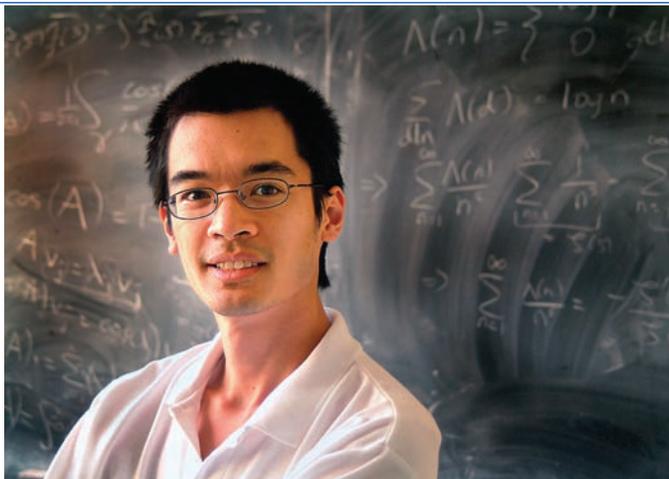


Fields Medal Winner Terence Tao



Terence Tao. Courtesy Reed Hutchinson/UCLA.

Terence Tao, a Clay Research Fellow from 2000 to 2004, was one of four recipients of the Fields Medals awarded August 22, 2006. The citation read: “for his contributions to partial differential equations, combinatorics, harmonic analysis and additive number theory.” The other awardees were Andrei Okounkov, Grigori Perelman and Wendelin Werner.

Tao, born in 1975, is a native of Adelaide, Australia. He began learning calculus as a seven-year-old high school student and by age eleven was well known in international math competitions. After graduating from Flinders University in Australia with a Masters Degree, Tao earned his Ph.D. from Princeton University under the direction of Elias Stein. He then joined UCLA’s faculty, where he became full professor at age twenty-four. Tao has also held professorships at the Mathematical Sciences Institute and Australian National University in Canberra.

Among Tao’s many awards are the Salem Prize in 2000, the Bôcher Prize in 2002, and the Clay Research Award in 2003. He is also the recipient of a MacArthur Fellowship.

Tao’s work is astonishing not only in its depth and originality, but also in its quantity and breadth. He is the author of more than 140 papers, about three-quarters of which have been written with one or more of fifty collaborators. While the core of his work to date has been concentrated in harmonic analysis and partial differential equations, it ranges from dynamical systems to combinatorics, representation

theory, algebraic geometry, number theory, and compressed sensing, a new area of applied mathematics. Of special note is his joint work with Ben Green, a Clay Research Fellow from 2005 through 2007. In their 2004 paper, “The primes contain arbitrarily long arithmetic progressions,” the authors answered in the affirmative a long-standing conjecture that had resisted many attempts. Vinogradov settled the case of arithmetic progressions of length 3 in 1939. Since then, however, progress had stalled, and even the case of progressions of length 4 was unresolved. For this and other work, Tao was awarded the Australian Mathematical Society Medal.

Tao is also unusual in the attention that he gives to the exposition of mathematics. At his website, one will find, among other things, a list of courses taught with an online edition of his textbook on partial differential equations (Math 251B, Spring 2006), and an archive of over ninety notes on topics ranging from a survey of harmonic analysis to the Black-Scholes formula in mathematical finance. More recently Tao started a blog. It makes for excellent reading and includes many of his recent lectures, including the Simons Lectures at MIT on structure and randomness, the Ostrowski lecture in Leiden on the uniform uncertainty principle and compressed sensing, and the ACM Symposium talk on the condition number of randomly perturbed matrices. There are also detailed notes on other lectures, e.g., Shing-Tung Yau’s, *What is a Geometric Structure*, in the Distinguished Lecture Series at UCLA, as well as talks and notes intended for more general audiences: *The cosmic distance ladder*, a talk given to UCLA chapter of the Pi Mu Epsilon society, and *Advice on mathematical careers, and mathematical writing*. Tao has also written an article on Perelman’s recent spectacular work.

On the web:

Home page: www.math.ucla.edu/~tao

Blog: terrytao.wordpress.com

Article on Perelman’s work: arXiv:math/0610903

Interview: www.claymath.org/library