

Black Mathematics at Cambridge

Katherine Adebola Okikiolu



Education

PhD, University of California at Los Angeles, 1991

Dissertation: 'The Analogue of the Strong Szego Limit Theorem on the Torus and the 3-Sphere'

Supervisors: Sun-Yung (Alice) Chang, John Garnett

Part III of the Mathematical Tripos, University of Cambridge, Newnham College, 1987

BA, University of Cambridge, Newnham College, 1986

Academic Positions

Professor, John Hopkins University (2011-)

Professor (previously Assistant Professor), University of California, San Diego (1997-2011)

Sloan Research Fellowship, 1997

Visiting Assistant Professor, MIT (1995-1997)

Assistant Professor (previously Instructor), Princeton University (1993-1995)

Main source: http://www.math.buffalo.edu/mad/PEEPS/okikiolu_katherine.html

Profile

Professor Kate Okikiolu came from a mathematical family: her father George was an eminent mathematician, who came to Britain from Nigeria in 1959 as a young student, to study mathematics at Sir John Cass College, where he met Kate's mother, Patricia, who later became a high school maths teacher. Kate's elder sister, Jeannie, is also a mathematician, who studied at Cambridge (King's College) and later worked as a forensic scientist. After graduating with a PhD from UCSD, Kate Okikiolu went on to a brilliant mathematical career, peppered by milestones in the history of black mathematicians: she was the first black recipient of a Sloan Research Fellowship, and the first to publish in the prestigious *Annals of Mathematics*.

Kate Okikiolu's research focus is harmonic analysis, spectral theory, and geometry, particularly the determinant of the Laplacian under smooth perturbations. Her *Characterization of subsets of rectifiable curves in \mathbb{R}^n* solved the Analyst's Traveling Salesman problem for any $n \geq 3$. She has made a major contribution to the field of elliptical differential operators.

Kate Okikiolu has worked for mathematical outreach to disadvantaged minorities since early in her career. In 1997 she was awarded a Presidential Early Career Award for Scientists and Engineers for both her mathematical research and her development of mathematics curricula for inner-city school children. In 2002 she delivered the Claytor-Woodward lecture at NAM, which was founded to promote the mathematical development of all under-represented minorities.

