RTG
Logic and Dynamics

UNDERGRADUATE MATHEMATICS RESEARCH COLLOQUIUM SERIES

Friday,
March 22, 2013

2:00-3:00 PM

General Academic Building, Room 105

A pre-lecture reception with cookies, coffee and tea will be held at 1:30 PM in the General Academic Building, Room 472.

The ***RTG in Logic & Dynamics*** is a research training group supported by the National Science Foundation and the University of North Texas.

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For UNT campus parking information visit:
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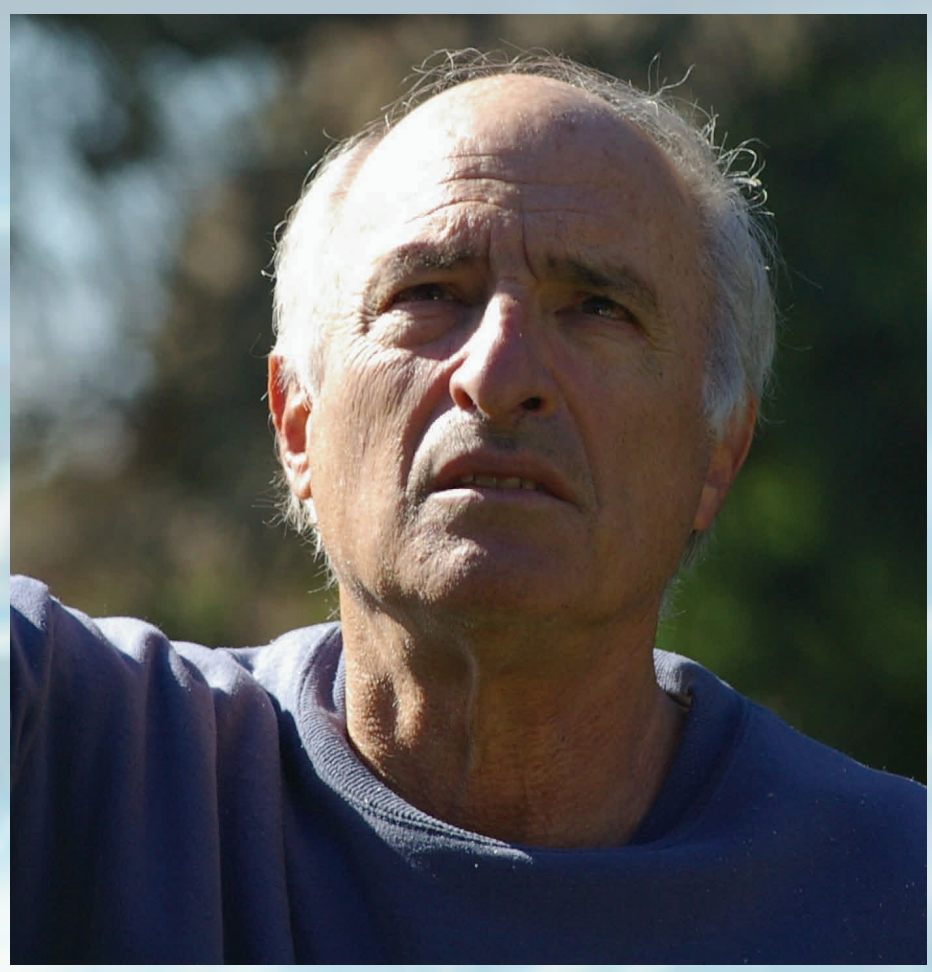
NOLAN WALLACH

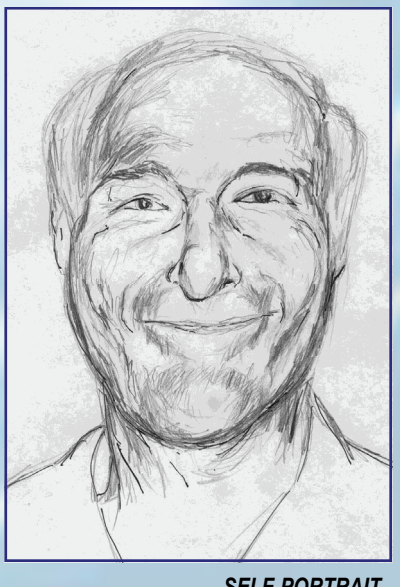
UNIVERSITY OF CALIFORNIA, SAN DIEGO



WHAT IS QUANTUM ENTANGLEMENT?

Quantum entanglement is one of the strangest aspects of "quantum strangeness". When two elementary particles are entangled, the outcome of the measurement of a specific property of one implies that the other will have a constrained value of the same measurement. For example, two electrons which initially have opposite spins will be entangled relative to spin. That is, if one is measured spin up the other will have spin down. This lecture will start with a crash course in quantum mechanics. Entanglement will be put in mathematical terms. Then it will be shown how to use invariant theory to measure it.

Nolan Wallach's fundamental contributions to mathematics have influenced representation theory, harmonic analysis, algebraic geometry, combinatorics, number theory, differential equations, Riemannian geometry, ring theory, and quantum information theory. He earned an Alfred Sloan Fellowship in 1972 and a Linback Award for Research Excellence in 1977. Professor Wallach gave an invited address at the International Congress of Mathematicians in Helsinki in 1978. He was elected Fellow of the American Academy of Arts and Sciences in 2004. He retired as full professor at the University of California at San Diego in 2011 and now teaches an annual topics course pro bono. His hobbies are cycling, painting and puzzles.



SELF-PORTRAIT, NOLAN WALLACH