

Gary R. Oas

Education Program for Gifted Youth
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Home address on request.

Personal Data

Birthdate: October 9, 1964

Birthplace: Romulus, Michigan, U.S.A.

Education

Phd., Physics, University of California, Davis, March 1995.

Dissertation: Normal Matrix Models.

Bachelor of Science, Physics, University of Michigan, Ann Arbor, May 1987.

Work Experience

Head of Physics, Education Program for Gifted Youth, Stanford University:
Teaching and Research Assistant, UC Davis,
Researcher, Lawrence Livermore National Laboratory,
Accounting Manager, NIC Travel,

January 1995 - present
Jan 1988 - June 1995.
May 1990 - June 1991.
Sept 1987 - May 1989.

Teaching Experience

EPGY, Stanford University. Developing, implementing, and tutoring computer-based distance learning courses from introductory algebra-based physics through intermediate quantum mechanics. Jan 1995 - present

EPGY Summer Institutes, taught 3 and 4 week courses in special and general relativity (SRGR) and introductory quantum mechanics (QM) on the Stanford campus.

SRGR: Each summer from 2001 until present, 212 students total.

QM: Each summer from 2002 until present, 131 students total.

Middle school physics: Two week course on introductory physics. (2006)

Introductory physics: 4 week accelerated introductory course for gifted high school students. (2004, 2005)

EPGY Singapore Holiday Camp, taught 2 week course versions of SRGR and QM to gifted Singaporean high school students. Dec. 2004, Dec 2005, June 2006, June 2007, May 2008. 63 students total.

Misc. Several lectures on physics to middle and high school students from Hong Kong and Korea.

Research Interests

Random matrix theory, quantum chaos, random networks.

“Universal Cubic Eigenvalue Repulsion for Normal Random Matrices” Phys Rev E 55, 205 (1997).

Foundations of quantum mechanics.

“A Collection of Probabilistic Hidden-Variable Theorems and Counterexamples”, P. Suppes, J.A. de Barros, G. Oas, in Conf. Proc. “Waves, Information and Foundations of Physics”, Nouvo Cimento 60 (1998).

Current research (2007): Joint probability criteria for defining quantum separability (with P. Suppes and J.A. DeBarros).

Foundations of special relativity, pedagogical issues of relativity.

“On the Abuse and Use of Relativistic Mass” arxiv.org: physics/0504110 & physics/0504111 (2005).

Current research (2008): Visualizations of special relativistic scenarios, observations versus measurements.

Pedagogy of computer-based instruction.

“Computer-Based Mathematics and Physics for Gifted Remote Students”, R. Ravaglia, R. Sommer, M. Sanders, G. Oas, C. DeLeone, in Proceedings of the International Conference on Mathematics/Science Education and Technology, p405 (1997)

Neural networks, brain function, and cognition.

“Neural Phase Oscillator Representations of Behavioral Stimulus-Response Models” P. Suppes, J.A. de Barros, G. Oas. submitted to Proceedings of the National Academy of Sciences, September 2008.