

Curriculum Vitae
Nathan Darden George
Department of Mathematics
University of California, Berkeley
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Berkeley, CA 94720
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Education

- Ph.D.** Economics or Real Estate Est ????
University of California, Berkeley - or elsewhere????
Research Interests: International Finance and Real Estate
- M.A.** Mathematics May 2008
University of California, Berkeley
Thesis Topic: Reduction in Generalized Complex Structures
Adviser: Prof. Alan Weinstein
- Certificate of Advanced Study in Mathematics** June 2004
Cambridge University, Cambridge, United Kingdom
Gates - Cambridge Scholar
- M.S.** Pure Mathematics May 2002
North Carolina State University, Raleigh, NC
Project Title: Off-Axis Neutrino Scattering in GRB Central Engines
Adviser: Prof. Arkady Kheifets
Minor: Statistics
- Summa Cum Laude** Graduate GPA: 4.0/4.0
- B.A.** Physics May 2002
North Carolina State University, Raleigh, NC
- B.S.** Applied Mathematics June 2001
North Carolina State University, Raleigh, NC
With Honors: Major GPA 4.0/4.0
Minor: Physics
- B.A.** French Language and Literature June 2001
North Carolina State University, Raleigh, NC
- Summa Cum Laude** Undergraduate GPA: 3.76/4.0

Fellowships for Graduate Study

- Gates-Cambridge Scholar,** Class of 2003
Gates-Cambridge Trust, Cambridge, UK
Invited to attend Cambridge University for graduate study in Mathematics & Physics
Award: All expenses paid: tuition, college fees, travel, lodging, stipend for living expenses, additional research funding.
- National Science Foundation (NSF) Graduate Research Fellowship,** Awarded April 2003
National Science Foundation, Division of Graduate Education
Award: All expenses paid (3 years) in any University program leading to a PhD:
tuition and fees, medical healthcare plan, stipend for living expenses,
international travel research allowance, and additional research funding.

National Defense Science and Engineering Graduate (NDSEG) Fellowship, Awarded Mar 2003
Department of Defense, American Society for Engineering Education (ASEE)

Award: All expenses paid (3 years) for a program leading to a PhD in any U.S. Institution: tuition and fees, medical healthcare plan, stipend for living expenses, and additional research funding.

Publications

Contributed: Ashok Bardhan and Cynthia Kroll, “Globalization and Real Estate: Issues, Implications, Opportunities”, Fisher Center for Real Estate & Urban Economics. Fisher Center Research Reports: Report #0407, April 1, 2007.

Nathan D. George and Kevin Vixie, “Variational Analysis, PDE’s and Image Analysis”, to appear in the *Proceedings Third International Workshop on Contemporary Problems in Mathematical Physics, (COPROMAPH3)*, Porto-Novo, Benin, West Africa, November 1 - 7, 2003.

Nathan D. George et al., Title and Content Classified: Published internally with the National Security Agency, S-???? (contact for reference number).

Adrian P. Gentle, Nathan D. George, Arkady Kheyfets, and Warner A. Miller, “The constraints as evolution equations for numerical relativity”, accepted by *Classical and Quantum Gravity*, gr-qc/0307007.

Adrian P. Gentle, Nathan D. George, Arkady Kheyfets, and Warner A. Miller, “Constraints in Quantum Geometrodynamics”, accepted by the *International Journal of Modern Physics A*, gr-qc/0302044.

Nathan D. George, Arkady Kheyfets, John M. McGhee, and Warner A. Miller, “Off-Axis Neutrino Scattering in GRB Central Engines”, *The Astrophysical Journal*, v583 n2, February 1, 2003. astro-ph/0205213

Nathan D. George, Adrian P. Gentle, Arkady Kheyfets and Warner A. Miller, “The Issue of Time in Quantum Geometrodynamics”, to appear in the *Proceedings of the XXIV International Colloquium on Group Methods in Theoretical Physics*, Paris, France, July 15-20, 2002. gr-qc/0302051

Invited Talks

“Teaching and Understanding Higher Mathematics from an Elementary Level”, Innovative Teaching of Mathematics 2003: New Concepts & Cutting Edge Technology Applied to Mathematical Education, Research Institute for Mathematical Sciences, Kyoto, Japan, November 20-22, 2003.

Plenary Review Talk: “Gravity Quantization: Current Progress and Problems”, Third International Workshop on Contemporary Problems in Mathematical Physics, (COPROMAPH3), Porto-Novo, Benin, West Africa, November 1 - 7, 2003.

with Adrian P. Gentle, Arkady Kheyfets and Warner A. Miller, “Canonical Quantum Gravity”, International Colloquium on Group Methods in Theoretical Physics, Paris, France, July 15-20, 2002.

Professional Employment

Graduate Student Researcher, Nov 2006 – present
Fisher Center for Real Estate and Urban Economics

Graduate Student Instructor, Aug 2006 – May 2007
Mathematics Department, University of California, Berkeley

Senior Researcher, May 2005 – March 2007
Convexus Advisors, LLC

Achievements: First employee; worked to develop trading algorithms for start-up quantitative hedge fund.

Graduate Research Assistant, August 2003 – present
Applied Physics Division, Los Alamos National Laboratory

Achievements: Worked on mathematical techniques used in Face Recognition and Image Analysis: geodesic flows, geometric PDE's, level set methods, and optimal transport.

Applied Research Mathematician, Graduate Mathematics Program, Summer 2003
Mathematics Research Group, National Security Agency, Fort Meade, MD

Achievements: Colaborated with NSA Mathematicians on mission-critical problems; Included a focus on information processing; Jointly authored a paper, Title and Content Classified.

Temporary Faculty Member, Spring 2003
Mathematics Department, University of New Mexico Los Alamos, Los Alamos, NM

Editor, Central European Journal of Mathematics, Sep 2002 – Present
Central European Science Journals, Warsaw, Poland

Post-Masters Graduate Research Assistant, Jun 2002 – May 2003
Theoretical Division, Los Alamos National Laboratory, with Dr. Warner A. Miller

Achievements: Canonical quantum gravity: reformulated techniques to avoid the notorious problems of time; Extended calculations for off-axis energy deposition rates around rotating black holes to include non-isothermal disk models; Numerical Relativity: incorporated all four constraint equations with ADM evolution equations to create a fully-constrained hyperbolic evolution scheme much more stable than before; Explored properties of traversable wormholes and time travel as well as topology change at the quantum level; Investigated the methods of bubble differentiation used in quantum electrodynamics.

Lab Consultant, Jul 2001 – Jun 2002
Theoretical Division, Los Alamos National Laboratory, with Dr. Warner A. Miller

Achievements: Improved Gamma Ray Burst models to include off-axis calculations of the relativistic effects on Momenergy Deposition Rates; Discovered a significant increase in the MDR due to the off-axis contributions.

Graduate Teaching Fellowship, Aug 2001 – May 2002
Mathematics Department, North Carolina State University, Raleigh, NC

Teaching Instructor, May 2001 – Jul 2001
Mathematics Department, North Carolina State University, Raleigh, NC

Teaching Assistant, Aug 2000 – May 2001
Mathematics Department, North Carolina State University, Raleigh, NC

Technical Translator, Nov 1999 – Apr 2000
SCA Hygiene Products SA, Lille, France

Achievements: Translated 1000+ page manual for machine operation and maintenance