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David A. Routenberg

Education

- **Doctor of Philosophy** in Electrical Engineering
  Yale University, New Haven, CT, Anticipated 2008
- **Master of Philosophy** in Electrical Engineering
  Yale University, New Haven, CT, December 2005
- **Master of Science** in Electrical Engineering
  Yale University, New Haven, CT, Sept 2005
- **Bachelor of Science** in Electrical Engineering
  University of Virginia, Charlottesville, May 2003

Employment

The MITRE Corporation 1999-2003 McLean, VA
Technical Staff, Nanosystems Group

- Led MEMs micro-robot design team
- Patent Research and Submission

Research Experience

The MITRE Corporation 1999-2003 McLean, VA

Supervisor: Dr. James C. Ellenbogen, Senior Principle Scientist

- MEMs-based robotics
- QCA architectures
- Nanotube-based electronics
- Theory of molecular transport
- Molecular electronic device fabrication and characterization

Yale University 2001-2002 New Haven, CT

Supervisor: Dr. Mark A. Reed, Professor

- Molecular electronic device fabrication and electrical characterization
- Process development

University of Virginia 2002-2003 Charlottesville, VA

Supervisor: Dr. Lloyd R. Harriott, Professor

- Silicon device fabrication

- Molecular electronic device fabrication
- Molecular and silicon-hybrid process development
- Molecular device characterization

Yale University 2003-Present Yale University, CT

Supervisor: Dr. Mark A. Reed, Professor

- Nanometer-scale semiconductor device design, process development, fabrication
- Molecular and silicon-hybrid device design, process development, fabrication
- Electrical and Cryogenic characterization of molecular, nanowire, and conventional semiconductor devices
- Characterization of charge trapping in molecular devices
- Electrochemical fabrication of metal and semiconductor nanowires
- Solution phase synthesis of metal nanoparticles, nanotriangles, nanowires

Teaching Experience

Yale University 2005-2006 New Haven, CT

Teaching Fellow, VLSI Design

Supervisor: Dr. Richard Lethin, Adjunct Professor

- CMOS Device and Circuit design
- VLSI system design and custom layout and simulation
- CADENCE CAD tool suite

Honors Received

National Science Foundation Graduate Fellowship, 2004-Present

- Raymond John Wean Foundation Fellowship, 2003-2004
- Graduation with Distinction, University of Virginia, 2003
- Rodman Scholarship, University of Virginia, 1999-2003

Publications

- Electrical Characterization of Single GaN Nanowires, E. Stern, G. Cheng, E. Cimpoiasu, R. Klie, S. Guthrie, J. Klemic, I. Kretzschmar, E. Steinlauf, D. Turner-Evans, E. Broomfield, J. Hyland, R. Koudelka, T. Boone, M. Young, A. Sanders, R. Munden, T. Lee, D. Routenberg, and M. A. Reed, *Nanotechnology* **16** 2941-2953 (December 2005)

- Nanowell Device For The Electrical Characterization Of Metal-Molecule-Metal Junctions, Nabanita Majumdar, Nadine Gergel, David Routenberg, L. R. Harriott, J. C. Bean, B. Li and L. Pu, Y. Yao and J. M. Tour, Journal of Vacuum Science and Technology B23(4), 1417-21 (Jul/Aug 2005)