

Home Address

100 Wildwood Ave, Apt #1
Arlington, MA 02476
(781) 646-3041

SHAWN K. KELLY

skkelly@alum.mit.edu
<http://alum.mit.edu/www/skkelly/>

Work Address

50 Vassar St, Rm. 36-576
Cambridge, MA 02139
(617) 324-1890

OBJECTIVE A challenging position in analog or mixed signal VLSI or systems design.

EDUCATION **MASSACHUSETTS INSTITUTE OF TECHNOLOGY** **Cambridge, MA**
PhD in Electrical Engineering. Graduate GPA: 4.8 / 5 **October, 2003**
Thesis: "A System for Efficient Neural Stimulation with Energy Recovery"
Advisor: Professor John Wyatt
 MEng degree in Electrical Engineering **June, 1998**
 SB degree in Electrical Engineering **June, 1996**
Awards Sigma Xi Honor Society (2002-present); Catalyst Foundation Fellowship (1998-2003);
 Richard P. Simmons '53 Scholarship (1992-1996); US Presidential Scholar (1992)

EXPERIENCE **BOSTON VA MEDICAL CENTER - Retinal Implant Project** **Boston, MA**
Analog VLSI Circuit Designer, Project Manager, Visiting Scientist at MIT
 October 2003 – Present Working to develop and test a prototype retinal prosthesis for the blind. I lead a design and test group of 2 other engineers and a technician, and I oversee design of all the implant's electrical systems. Designing custom analog and mixed signal IC and telemetry circuits for next generation, coordinating implant assembly by outside vendors.

November 2006 – Present **RHYTHMIA MEDICAL - Circuit Design Consultant** **Woburn, MA**
 Designed analog and mixed-signal test circuits for client.

Spring 1999 – October 2003 **MASSACHUSETTS INSTITUTE OF TECHNOLOGY** **Cambridge, MA**
Graduate Research Assistant - PhD Project
 Designed an analog VLSI system to stimulate neural tissue using 53% less power than the most aggressive traditional design, 66% less than common designs. Designed a coupled coil RF system with class E amplifier to deliver power to the implant. Built and tested system, filed patent application for novel low-power stimulation method.

Spring 1997 – Spring 1999 **Graduate Research Assistant - MEng Project**
 Designed and built a retinal stimulator system, involving significant analog and digital circuitry, for the Retinal Implant. Operated this system in six human surgical trials.

Fall 1996 **Graduate Teaching Assistant - Digital Electronics Lab**
 Taught recitations, wrote problem sets and exams, advised students in design and debugging.

Summer 1996 **M/A-COM, INC. - Test Design Engineer** **Lowell, MA**
 Designed a 50 GHz system to test S parameters for microwave and millimeter wave chips.

Summer 1995 **UNIVERSITY OF PITTSBURGH** **Pittsburgh, PA**
Research Assistant - Department of Neurosurgery
 Designed and built analog circuitry to measure brain tissue resistivity at various frequencies. Wrote Matlab models of current distributions near multiple resistivity boundaries.

SELECTED PATENTS / PUBLICATIONS **"System for and Method of Power Efficient Electrical Tissue Stimulation"**
 S.K. Kelly, J.L. Wyatt, and J.F. Rizzo. United States Patent Number 7,295,872.
 International Patent Application PCT/US02/32509. Issued 2007.

"A Power-Efficient Voltage-Based Neural Tissue Stimulator with Energy Recovery." S.K. Kelly, J.L. Wyatt. IEEE International Solid-State Circuits Conference (ISSCC), Feb 2004.

"Exploration of Optimal Coil Designs for Retinal Implant Power and Data Telemetry." S.K. Kelly, et.al. Poster 674, Vision and Ophthalmology (ARVO), May 2007.

TECHNICAL SKILLS Analog and digital circuit design and debugging equipment; Tanner Tools, Cadence; SPICE, PC board layout, Matlab, machine shop equipment, Windows and Unix platforms, Latex.

LEADERSHIP / ACTIVITIES Alumni Advisory Board, Tech Catholic Community (2005-); Volunteer ESL adult math tutor (2003-2006); Strategic Advisory Committee to the Chancellor (1999-2000); Dorm President, Dorm Council (1995-1996); Varsity Cross-country, Indoor, Outdoor Track (1992-1996)