

Craig E. Green

1726 Jobeth AVE SE • Atlanta, GA 30316 • 410-371-3128
cgreen8@gatech.edu

Education **Georgia Institute of Technology-** PhD Mechanical Engineering – Spring 2010
Cornell University- BS Mechanical and Aerospace Engineering - August 2002

Awards “Outstanding Paper” Award ITherm 2008 conference
Georgia Tech Graduate Research Assistant
GEM Foundation Fellow
3M Minority Engineering Scholar
Omega Psi Phi Fraternity 2nd District Scholar
GE Foundation Faculty for the Future Research Student
Three Mile Island R+ Award for Process Innovation
Dresser- Rand Dedication to Total Quality Award

Publications C. Green, A. Fedorov, and Y. Joshi, "Fluid-to-Fluid Spot-to-Spreader (F2/S2) Hybrid Heat Sink for Integrated Chip-level and Hotspot-level Thermal Management," in *ITHERM 2008* Orlando, 2008.

Research Experience **Graduate Research Assistant Georgia Institute of Technology, Spring 2007- Present**

- Developing a novel cooling method for removing the large background heat fluxes of next generation microchips while simultaneously cooling localized hotspots with heat fluxes up to 1000 W/cm².
- Performed heat transfer analysis to size various components to produce optimal thermal performance with minimal pressure loss.
- Verified theoretical calculations using Computational Fluid Dynamics simulations with *Fluent* software.

R&D Intern, Praxair Combustion Systems R&D group, Summer 2007

- Assisted in developing a process for producing activated carbon for coal-fired power plant emissions reductions.
- Theoretically and experimentally investigated methods for spray cooling the process stream to maximize cost effectiveness and efficiency.

Graduate Research Assistant, Georgia Institute of Technology, Fall 2006- Spring 2007

- Analyzed air flows in a model operating to develop a means of preventing airborne bacteria from entering patient wounds.
- Modeled airflows under varying conditions using Particle Image Velocimetry (PIV). Verified PIV measurements using Laser Doppler Velocimetry.
- Developed a prototype device that actively manages localized airflows.

R&D Intern, Praxair Cryogenics Systems R&D group, Summer 2006

- Utilized a boil-off calorimeter to experimentally determine the thermal conductivity of aerogels and other cryogenic vacuum insulations under varying test conditions.
- Designed and built an improved calorimeter to produce more accurate and reliable thermal conductivity results.
- Applied acquired knowledge about vacuum technology to achieve deeper vacuums, extending the low end of the range of available experimental data for the tested insulations.

Micro Air Vehicle Team, Cornell University, Spring 2002

- Measured the efficiency of commercially available propellers for use on remotely controlled aircraft with wingspans between 6 in and 10 ft.
- Designed and fabricated a propeller test bed for measuring thrust, current draw, voltage and RPM.

Undergraduate Research Assistant, Cornell University, Fall 2000

- Assisted in a project team developing small-scale diesel engines.
- Designed and fabricated a testing stand for use both with preliminary engines and the finished product.
- Developed a system for integration of an electric motor for testing of the engine as an electric generator.

**Work
Experience**

Systems Engineer- Three Mile Island Generating Station- May 04- May- 06

- Performed thermodynamic, heat transfer, and stress analyses on plant equipment to assess component performance under design basis accident scenarios.
- Used complex troubleshooting techniques to resolve longstanding equipment issues in the plant
- Developed mathematical models of plant performance under accident conditions for use in the plant training simulator
- Monitored system performance and recommend improvements to enhance component reliability
- Served as the engineering lead responsible for the execution of large scale equipment overhauls
- Prepared technical papers for internal organizations as well as the Nuclear Regulatory Commission supporting equipment operability and other operational or technical decisions.

Engineer, Dresser- Rand- Ingersoll-Rand Co., Jan. 03-May 04

- Completed a 12-month leadership development program
- Completed engineering studies analyzing the performance of reciprocating compressors under proposed new operating conditions
- Prepared budgetary proposals for new compressors and for revamping existing equipment
- Designed specialized tooling for removing an inaccessible part on a customer's compressor
- Developed detailed standard work instructions for diaphragm inspection procedures
- Responded to non-warranty customer issues and technical questions in a timely fashion
- Assisted in creating and mapping a streamlined process for collecting aging invoices
- Researched and presented cost savings measures showing \$500,000 in potential yearly savings

Engineering Intern, 3M, Summer 2000, Summer 2001

- Analyzed trends in inspection data and identified possible areas for process improvement
- Conducted repeatability and reproducibility studies of gauges used in a sensitive process
- Pinpointed sources of process variability that accounted for up to 66% of total uncertainty
- Developed a procedure for determining the material properties of process components
- Designed a beam preparation stand to decrease line downtime by 50%
- Managed and coordinated a 6-person team updating the traction system of a web line