

Gregory L. Holst

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7008 Wingate Way
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EDUCATION

- PhD – Bioengineering** Dec 2015, Georgia Institute of Technology, GPA 4.0
- MS – Mechanical Engineering** June 2011, Brigham Young University, GPA 3.85
- BS – Mechanical Engineering** Aug 2009, Brigham Young University, GPA 3.89

WORK EXPERIENCE

- Graduate Research Assistant** Aug 2011 – Present, **Georgia Institute of Technology**
- Designed, fabricated, and programmed an automated in-vivo neural recording system comprised of precision pneumatic controllers, precision positioning stages, and precision amplifiers using C++, Arduino, multithreaded Qt, OpenCV, RS-232, ActiveX, CNC fabrication, EagleCAD, and optical and capacitive metrology.
 - Co-authored 3 journal articles (Biosensors and Bioelectronics, Nature Protocols (submitted), IEEE) and 21 conference presentations. (list <http://gregoryholst.com>)
 - Performed the equipment start-up for the neuroscience division of the lab.
 - Managed a team of 3 undergraduate engineers to develop an automated glass capillary handling system as part of the automated neural recording system.
 - Designed and tested a high-speed, open-loop IR laser thermocycling system using finite element analysis (FEA) and optimization techniques.
 - Programmed the automation software for a microscope stage and camera for data acquisition for week-long autonomous experiments.
 - Developed an automated scoring system, similar to Scantron, using image processing in MATLAB and Linux BASH.
- Visiting Researcher** May 2014 – Dec 2014, **Allen Institute for Brain Science**
- Performed patch clamp recordings in-vivo and developed new robot designs.
- Operations Project Engineer** Feb – July 2011, **L-3 Communications West**
- Developed MATLAB software to perform generalized automated robust design statistical analysis for FEA models using design of experiments (Taguchi).
 - Managed a team of two engineers to develop the software and train users.
- Graduate Research Assistant** Aug 2009 – May 2011, **Brigham Young University**
- Designed, analyzed, and tested silicon MEMS devices for underwater thermal microactuation of a DNA injection system using automated finite element analysis and elliptic integrals.

- Managed the semiconductor mask design for a team of 5 graduate students for submission to the MEMSCAP semiconductor foundry service.
- Designed and built amplifiers and a computer controller for the microactuators and DNA injection systems.
- Published 3 peer reviewed publications. (list <http://gregoryholst.com>)
- Graduated Cum Laude.

Graduate Teaching Assistantship Aug 2004 – Aug 2010, **Brigham Young University**

- Instructed students in material science, multivariable calculus, numerical methods, C++, and kinematics.

Risk Assessment Engineering Intern May – Aug 2010, **Idaho National Laboratory**

- Modeled the risk of transporting hazardous materials and collisions using automated FEA in LS-DYNA coupled with a Monte Carlo Simulation in Isight.

OTHER

Software

- MS Office, MATLAB, Adobe Flex, Actionscript, XML, CSS, jQuery, ProE, Solidworks, NX, NXOpen, ANSYS, ADPL, Fluent, LS-DYNA, HyperWorks, Isight, Gambit, Adina, C++, Qt, OpenGL, OpenCV, LabVIEW, DAQmx, Cadsoft Eagle, Linux OS, Arduino Microcontroller, BeagleBone Embedded Board.

International Experience

- Lived for 3 years in Tuxpan, Veracruz, Mexico (2001-03)
- Performed service for 2 years in Argentina (2005-07)
- Studied abroad in China for 6 weeks (May – June 2008)

Languages

- Fluent Spanish, some Mandarin

Awards

- 1st Place Student Team Competition ASPE 2014
- Student Scholarship ASPE 2014
- Integrative Graduate Education and Research Traineeship Stem Cell Biomanufacturing, Georgia Institute of Technology 2011
- Presidential Fellowship, Georgia Institute of Technology 2011
- 1st Place – ASME Micro/Nano Systems Photo Contest, ASME IDETC/CIE 2011
- 2nd Place – ASME Micro/Nano Systems Photo Contest, ASME IDETC/CIE 2010
- Convocation Student Body Speaker for Ira A. Fulton College of Engineering and Technology BYU 2009
- Full Tuition Academic Merit Scholarships, Brigham Young University 2004-09