

# Elizabeth Quigley

equigley30@gatech.edu

## PROFESSIONAL EXPERIENCE

**I. Surface Engineering and Molecular Assemblies Research Lab, Georgia Institute of Technology** **Atlanta, GA**  
*Graduate Researcher* August 2016-Current

- Drug encapsulation using silk microcapsules fabricated via layer-by-layer technique

**II. Honeywell Senior Design Project/Senior Honors Thesis, Arizona State University** **Tempe, AZ**  
*Senior Design Group Leader* August 2015-May 2016

- Lead project that characterized metallic powder used for direct metal laser sintering in additive manufacturing to identify sources of contaminants and predict probability of contamination in a given volume

**III. Intelligent Systems and Advanced Materials Research Lab, Arizona State University** **Tempe, AZ**  
*NASA Space Grant Fellowship Awardee* August 2015- May 2016

- Experimental verification of varying CNT wt% in epoxy for space applications

*Fulton Undergraduate Research Initiative (FURI) Student*

January 2015-May 2016

- Developing nanoscale self-healing epoxy materials using carbon nanotubes
- Explored non-invasive methods of detecting internal damage using buckypaper in an epoxy/glass fiber composite

*Undergraduate Research Apprentice Program (URAP) Student*

August 2014- May 2015

- Characterized the polymer matrix component of carbon fiber/epoxy composite using digital image correlation and microscopy methods

**IV. Advanced Polymer Research Lab, University of Texas at Dallas** **Richardson, TX**  
*Undergraduate Researcher* May 2013-August 2013 and May 2015-August 2015

- Headed project to explore different processing methods on the mechanical properties of shape memory polymers.
- Aided research on flexible polymer intracortical implants for neural stimulation and recording
- Aided research on superoleophobic shape memory polymer surfaces and needle-implanted flexible neural electrodes.

**V. Center for Devices and Radiological Health, U.S. Food and Drug Administration** **Silver Spring, MD**  
*Undergraduate Researcher* May 2014-August 2014

- Aided in imaging and analyzing the surface morphology of corroded metal and ceramic hip explants

## RELEVANT SKILLS/CLASSES

- Competency with C programming, Microsoft Office, Prezi, MATLAB, GIMP, AXIOM, AutoCAD
- Research paper writing, technical presentations, general cleanroom experience: photolithography, plasma-enhanced chemical vapor deposition, reactive ion etching, ellipsometry, wet etching. Equipment: DSC (differential scanning calorimetry), DMA (dynamic mechanical analysis), laser cutters, digital optical microscopes, digital image correlation, non-contact and contact profilometry
- Static and Dynamic Forces, Biology of Microorganisms, Thermodynamics of Materials, Mathematical and Computational Methods for Engineers, Physical Metallurgy, Electrical/Magnetic Properties of Materials, Mechanical Properties of Solids

## EDUCATION/HONORS

**GEORGIA INSTITUTE OF TECHNOLOGY** **Atlanta, GA**  
*Materials Science and Engineering PhD Candidate*

**ARIZONA STATE UNIVERSITY** **Tempe, AZ**  
*Bachelor of Science in Engineering (Materials Science and Engineering), May 2016*

- Speaker at Smart Structures/Non-Destructive Evaluation SPIE in Las Vegas, Nevada March 2016
- Honorable Mention for NSF GRFP
- Won 3<sup>rd</sup> place in Arizona's Annual Materials Science Engineering Senior Design Competition

## PUBLICATIONS/PRESENTATIONS

[1] Quigley E, Datta S, Chattopadhyay A. (2016). *A Novel Methodology for self-healing at the nanoscale in CNT/epoxy composites*. SPIE: Smart Materials and Nondestructive Evaluation for Energy Systems II, Las Vegas, Nevada. March 20-24, 2016.

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[2] Datta S, Fard MY, Johnston JP, Quigley E, Chattopadhyay A. (2015). *In-situ strain and damage sensing in glass fiber laminates using embedded CNT membranes*, 10<sup>th</sup> International Workshop on Structural Health Monitoring, Stanford University, California. September 1-3, 2015.

## **EXTRACURRICULARS/ LEADERSHIP EXPERIENCE**

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- Member of Women in Engineering at Georgia Tech Fall 2016
- Member of GHOST (Georgia High School Outreach for Science and Technology) Program at Georgia Tech Fall 2016
- Arizona State Ignite speaker (TED Talk-like 5 minute presentation about reducing gender gap in STEM fields) Fall 2014
- Alternative Spring Break Leader (volunteering trip during spring break) at Arizona State (2014-2016)
- Barrett Honors Community Outreach Choir ( 2014-2016)
- Arizona State Sun Devil Marching Band (Fall 2012, Fall 2013, Fall 2014)