

# Stephen Gibbs

3908 Ave C, Apt A ♦ Austin, TX 78751 ♦ sgibbs93@utexas.edu ♦ (407) 756-7300

## EDUCATION

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### **University of Florida, Gainesville**

*B.S. Chemical Engineering, Fall 2012 - Spring 2016*

- Summa Cum Laude
- Minor in Spanish Language

### **University of Texas, Austin**

*PhD Candidate, Fall 2016 - Present*

- Advisor: Dr. Delia Milliron
- NSF Graduate Research Fellow (2016 – 2019)

## RESEARCH EXPERIENCE

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### **Strano Research Group, Massachusetts Institute of Technology**

*Student Researcher, June 2015 – August 2015*

- Selected as one of twelve from nationwide pool of National Science Foundation Research Experiences for Undergraduates candidates to conduct research at MIT
- Further developed a recently discovered alternative energy production technique (thermopower waves) which uses fuel coated carbon nanotubes to propagate a voltage generating reaction wave

### **Dr. Rufina Alamo Polymer Science Lab, Florida State University**

*Student Researcher, June 2014 - August 2014*

- Selected as one of 29 from nationwide pool of National Science Foundation Research Experiences for Undergraduates candidates to conduct research at FSU
- Studied the structure and crystallization kinetics of randomly halogenated polyethylene (RHPE) chains
- Critically analyzed data to understand crystal formation of RHPE at various isothermal crystallization temperatures

### **Rinaldi Lab, University of Florida**

*Student Researcher, August 2013 – May 2016*

- Investigated precise synthesis of Mn-Zn Ferrite nanoparticles through thermal decomposition to make magnetic, monodisperse nanoparticles to be used for various biomedical applications
- Manipulated reaction conditions and characterized particles to optimize response to an alternating magnetic field

### **Comparative Orthopedics and Biomechanics Lab, University of Florida**

*Lab Assistant, May 2013 - August 2013*

- Helped prepare ring constructs for force testing that assist in canine leg elongation
- Soldered wires to terminals and strain gauges for data collection
- Observed preparation, testing, and data collection for a human patella study and dog leg fracture study

## ACTIVITIES AND INVOLVEMENT

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### **Thinkery, Austin, TX**

*Volunteer, October 2016 – Present*

- Help out in many ways, from setting up museum exhibits to guiding tours, with the ultimate goal of inspiring young children to think, create, and learn

**Material and Energy Balances (ECH 3203), University of Florida**

Teaching Assistant, August 2015 – December 2015

- Held weekly review sessions for ~35 students in the college's introductory chemical engineering course
- Assisted students through email and external office hours when additional help was needed

**American Institute of Chemical Engineers (AIChE), University of Florida**

Engineering Fair and Outreach Chair, August 2014 – January 2015

- Organized and participated in outreach programs that involved teaching young students through demonstrations
- For the UF Annual Engineering Fair: trained volunteers, orchestrated a booth with 10 engineering demonstrations, logged over 80 man hours in two days, and taught scientific principles to over 1000 young students through demos

**IMPACT Autism, University of Florida**

Active Member, January 2012 – May 2016

- Provided respite care for autistic children at monthly "play-dates" where I watched over and interacted with a child through sports, crafts, and other activities

**Freshmen Leadership Engineering Group, University of Florida**

Recruitment Committee Member, January 2012 – August 2013

- Hosted five recruitment events, interviewed over 200 applicants, and read over 200 resumes and applications to select the new 30 students of the 2013 FLEG class

Active Member and Mentor, August 2012 – May 2016

- Organized events and offered individual advice in order to increase retention rate among Freshmen engineers

**SKILLS**

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**Laboratory Equipment Operation**

- Solid and liquid sample analysis of vibrational peaks obtained from FTIR spectrometer
- Measured hydrodynamic particle diameter with Dynamic Light Scattering (DLS) and magnetic diameter using a SQUID Magnetometer
- Measured physical diameter with transmission electron microscopy (TEM)
- Measured magnetic relaxation of particles with an AC Susceptometer

**Computer programming**

- Proficiency with Python and Matlab

**Conversational proficiency in Spanish**

- Completed Spanish Minor in May 2015
- 5 weeks living with native host family in Mexico studying Ecology and Spanish at a local university (Summer 2012)
- 2 weeks building mud stoves and water purification filters in rural areas outside of Cusco, Peru in order to alleviate smoke inhalation from cooking fires and to provide clean water (Summer 2014)

**Eagle Scout**

- Achieved the highest rank in scouting, held many leadership positions (Patrol Leader, Troop Guide).
- Planned, fundraised for, and completed a community service project.

## **Publications**

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- S. F. Oliveira, G. Bisker, N. A. Bakh, S. L. Gibbs, M. P. Landry, M. S. Strano, "Protein Functionalized Carbon Nanomaterials for Biomedical Applications", *Carbon*, **2015**, 95, 767-779
- S. G. Mahajan, G. Bisker, A. T. Liu, A. L. Cottrill, Y. Kunai, D. Bender, J. Castillo, S. L. Gibbs, M. S. Strano, "Sustainable Power Sources Based on High Efficiency Thermopower Wave Devices", *Energy Environ Sci*, **2016**, 9, 1290-1298

## **Presentations**

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- S. L. Gibbs, X. Zhang, R. Alamo. "FTIR analysis of polymorphism in randomly substituted polyethylene", *NHMFL REU Poster Session*, **1 August 2014**, Poster.
- S. L. Gibbs, L. Maldonado-Camargo, C. Rinaldi. "Synthesis of manganese zinc ferrite nanoparticles for biomedical applications", *2014 AIChE Annual Student Conference*, **14-17 November 2014**, Poster.
- S. L. Gibbs, L. Maldonado-Camargo, C. Rinaldi. "Synthesis of manganese zinc ferrite nanoparticles for biomedical applications", *University of Florida Undergraduate Research Symposium*, **26 March 2015**, Poster.
- S. L. Gibbs, A. T. Liu, M. S. Strano "Enhancing voltage output of thermopower waves through magnetic flux compression", *CMSE/MPC Summer Scholar Poster Session*, **5 August 2015**, Poster.

## **SCHOLARSHIPS, HONORS, & AFFILIATIONS**

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- 2016 National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) Awardee
- John V. Lombardi Scholar: 4-year scholarship given to 8 UF Freshmen to enrich education through experiences abroad
- Gators of Tomorrow: Selected as one of top 25 UF Freshmen leaders, attended a leadership seminar
- 2014 AIChE National Student Poster Competition: 3rd Place, Materials Engineering and Science Division
- Tau Beta Pi Member: Engineering Honorary Society recognizing successful students with exemplary conduct.
- University Scholars Program Undergraduate Researcher: Scholarship awarded to students to fund a year-long research project culminating in a program-wide poster presentation at the end of the year.
- Smoyer Scholarship Recipient (2015) - Awarded for academic excellence and involvement within the department of chemical engineering at UF
- Florida High School Athletic Association (FHSAA) Male Scholar-Athlete of the Year (2012)