



## Haley J. Barnes

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### SUMMARY STATEMENT

*Aspiring pharmacist, entrepreneur, and biomedical engineer. My immediate goal is to complete a PharmD/PhD program with emphasis on cerebral and cardiovascular physiological response to hemorrhagic trauma. My long-term goals include developing drug delivery technology, owning a small business, writing a novel, and chairing a non-profit public health or medical board.*

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### EDUCATION

**Degree:** M.S. in Medical Sciences **University of North Texas Health Science Center**

**Anticipated Graduation:** May 2020

**Practicum Report Title:** Sex Differences in Oxidative Stress and Inflammatory Markers During and After Simulated Hemorrhage.

**Faculty Mentor:** [Dr. Caroline Rickards, Ph.D.](#)

**Degree:** B.S. in Materials Science and Engineering **University of North Texas Denton**

**Graduation:** May 2018

**Honors Capstone Thesis:** Design of a Self-Healing Ceramic utilizing Oxidation Heating, Silicon Carbide, and Silver.

**Faculty Mentor:** [Dr. Samir Aouadi, Ph.D.](#)

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### EMPLOYMENT HISTORY

Aug 2016 - Current      Employer: Scribe.ology | Location: John Peter Smith Hospital, TX

**Emergency Department Scribe**

Healthcare Experience

Responsibilities include scribing in the Emergency Department, Critical Decision Unit, and Urgent Care Center, crafting patient history and provider assessment in patient electronic medical record (EMR; Software: EPIC), maintaining a professional bedside manner, and successfully training 9 employees who have stayed longer than 6 months in their position.

**EMPLOYMENT HISTORY CONT'D**

May 2019 - Current	Employer: UNT Health Science Center   Location: Fort Worth, TX
<b><u>Literacy Worker</u></b>	Responsibilities include drafting reading curriculum for 48 Pre-K through 4th grade students, maintaining discipline and decorum during tutoring sessions, and tutoring on homework assignments
Tutoring Experience	
Aug 2019 - Current	Employer: UNT Health Science Center   Location: Fort Worth, TX
<b><u>Campus Tutor</u></b>	Responsibilities include tutoring in Biochemistry, Molecular Cell Biology, Histology, Immunology, Anatomy, and Physiology, drafting tutoring reports after each session, and referring students to campus resources for further assistance.
Tutoring Experience	
May 2019 - July 2019	Employer: UNT Health Science Center   Location: Fort Worth, TX
<b><u>Biostatistics Teaching Assistant</u></b>	Responsibilities included hosting 1 online tutoring session, grading 50% of 24 students' overall grades, addressing 45+ student concerns through email, hosting 4 In-Person Review sessions, and referring students to the Center of Academic Performance and other campus resources.
Tutoring Experience	
Jan 2017 - May 2018	Employer: Bell Helicopter Textron   Location: Grand Prairie, TX
<b><u>Materials, Process, and Chemical Engineering Intern</u></b>	Responsibilities included supplying excellent daily, monthly, and yearly maintenance to 18 pieces of equipment in the processing lab, performing daily chemical tank quality analysis to 97 chemical, metallic, and oil tanks, implementing chemical tank corrections, compiling 4 technical reports per Bell Helicopter literature standards, performing tensile testing, hardness testing, weld testing, magnetic particle testing, shot-peening testing, and carbon analysis, operating with intention of safety throughout each laboratory, and working on an 11-person team to complete all assignments.
Engineering Experience	
	Notable achievements include reducing acid tank analysis by 50% and reducing basic tank analysis by 33%, organizing the chemical storage of 264 chemicals including developing a digital inventory sheet, and was the selected intern to work on a committee task force in charge of eliminating chrome products from the processing line.

## EMPLOYMENT HISTORY CONT'D

Nov 2014 - Oct 2017

Employer: UNT Denton | Location: Denton, TX

**Materials Science & Engineering Department Webmaster**

Administrative Experience

Responsibilities included posting dynamic department news on website and social media, managing 12 static webpages, facilitating 3 annual department events including end-of-semester department picnic, and organizing the high school Materials Advantage Summer Camp for 34 total guest students (Summer '15,'16'17).

## RESEARCH

Nov 2018 - May 2019

252 total hours, volunteer experience

**Cerebral and Cardiovascular Physiology**

Dr. Caroline Rickards

Responsibilities included performing peak statistical analysis on 224 inputs of physiological data to address how cerebral and cardiovascular vessels change with hemorrhagic stimuli, actively observe and learn from 5 Graduate School of Biomedical School seminars and lunches with visiting faculty, host 1 journal club to 7 faculty, postdoctoral students, and graduate students.

Notable achievements include earning 3rd Place at the [UNTHSC Research Appreciation Day 2019](#) in the Physiology Department Poster Category. Poster title was "Peak Analysis of Cerebral Blood Velocity Responses to Forced Low Frequency Oscillations during Simulated Hemorrhagic Stress in Humans."

Jan 2017 - May 2017

200 total hours, experience used for course credit

**Materials Science and Engineering**

Dr. Samir Aouadi

Responsibilities included emphasizing test development and execution with ethical, environmental, and economic considerations, presenting at [University of North Texas Senior Design Day](#), and gaining experience in ceramic sample preparation, building a furnace, ceramic microstructure analysis, and statistical analysis.

Notable achievements include being selected to present this poster at the Materials Science & Technology (MS&T) 2017 conference in Philadelphia, PA.

## RESEARCH CONT'd

Oct 2016 - March 2017

64 total hours, paid experience

### **Materials Science and Engineering**

Responsibilities included assisting 4 graduate students in tensile sample preparation and performing tensile testing, hardness testing, and other mechanical properties testing on metallic alloy samples.

Dr. Rajiv Mishra

Notable achievements were being trained on scanning electron microscopy (SEM) and x-ray diffraction (XRD) analysis.

Aug 2015 - Dec 2016

304 total hours, volunteer experience

### **Materials Science and Biomedical Engineering**

Responsibilities included gaining experience in biomaterials, drug delivery systems, and coaxial electrospinning, designing a coaxial electrospinning system for polybutylene adipate terephthalate (PBAT) polymer, and synthesis of over-the-counter medications dissolved within the PBAT polymer matrix.

Dr. Nandika D'Souza

Notable achievements were being invited to present current work at the 2015 DFW Biodegradable Materials Conference and earning 2nd overall place and "Top Bioengineering Poster" at the UNT Society for Advancement of Materials Processing and Engineering local conference.

June 2014 - Dec 2014

304 total hours, volunteer experience (summer) and experience used for course credit (fall)

### **Chemistry and Biomaterials**

Responsibilities included gaining experience in correct and ethical data collection, preparing electrodes and thin film electrodeposition apparatus, maintaining cleanliness of laboratory, reviewing literature, and refining communication skills through 6 group presentations.

Dr. Teresa Golden

## TRAVEL GRANTS & SCHOLARSHIPS

Aug 2013 - May 2017

Awarded to entering first-time freshmen that have a demonstrated record of academic success. This full-tuition scholarship was awarded for being Top 10% of my high school graduating class.

### **North Texas Scholarship**

May 2017

I applied for and earned a \$500 national Materials Advantage Outreach Grant to be used for educational outreach to promote materials science. The grant was used to purchase 11 materials science kits for high school and middle school demonstrations.

### **Materials Advantage**

## TRAVEL GRANTS & SCHOLARSHIPS CONT'D

March 2016

**PepsiCo Travel  
Scholarship & Apex  
Mastery Travel Grant**

Funded by PepsiCo and Apex Mastery, I was selected as a collegiate participant in the [Society of Women Engineers Congressional Outreach Day](#) to promote legislation that increases diversity and gender equality in the STEM workforce. I spoke with 4 Texas representatives.

Dec 2015

**American Association of  
Anatomists Student  
Travel Grant**

Awarded a student travel grant worth \$700 by the American Association of Anatomists to present finalized research over "Biodegradable coaxial electrospun polymers for in-vivo soft tissue repair." This grant was presented at the 2015 Dallas-Fort Worth Biodegradable Materials Conference.

## HONORS & AWARDS

June 2019

**June Valuability Award**

Institution: University of North Texas Health Science Center

The Valuability program was designed to recognize team members of the UNTHSC campus who live by the institution's values in extraordinary ways. I was nominated by a student peer who recognized my values of Respect, Collaboration, and Service. [Link](#).

May 2018

**Distinguished Honors  
Scholar**

Institution: University of North Texas Denton

Granted to those who graduate from the UNT Honors College with at least 21 Honors credit hours in addition to successful completion of an Honors thesis. I graduated with 33 Honors credit hours and successfully defended my capstone thesis.

June 2017

**Citizen Academy**

Institution: City of Denton

I was one of 12 citizens selected as a citizen academy participant to observe a behind-the-scenes look at vital city institutions and infrastructure. I interviewed the police department, fire department, and the electrical plant. This opportunity gave valuable insight into the institutions that support public health.

April 2016

**Golden Eagle Award**

Institution: University of North Texas Denton

Selected by the Dean of Students in symbolic recognition of outstanding student leadership that created a positive and meaningful impact on the UNT community. [Link](#).

## HONORS & AWARDS CONT'd

April 2016

Institution: University of North Texas Denton

**Mean Green Unity Individual Award**

Selected by the Dean of Students in recognition of a student leader whose work celebrated diversity. Award was granted due to my work with UNT Compliments, a positive social media experience. [Link](#).

Feb 2016

Organization: Society of Women Engineers (SWE) Region C

**Governor's Choice Award**

Awarded by the Governor for the Region for my service as a SWE Future Leader and as an officer with the University of North Texas SWE section.

Nov 2015

Organization: Society of Women Engineers (SWE)

**New Faces of Engineering College Nominee**

Awarded by the Society to recognize outstanding engineering students for their academic achievement and commitment to the Society. I was one of three nominees for the '15-16 year.

June 2015

Organization: Society of Women Engineers (SWE)

**SWE Future Leader**

Selected as 1 of 13 students internationally to participate in the Future Leader program to enhance professional development and leadership. Responsibilities include attending Society conference and observing conference calls between society leaders. [Link](#).

## CONFERENCES & TALKS

March 2019

Institution: University of North Texas Health Science Center

**UNTHSC Research Appreciation Day**

Presented a poster on "Peak Analysis of Cerebral Blood Velocity Responses to Forced Low Frequency Oscillations during Simulated Hemorrhagic Stress in Humans."

Nov 2018

Organization: Texas Christian University (TCU) & Girls Inc Tarrant County

**Keynote Speaker**

I was selected to present my workshop 'Engineering is a Mindset, Not a Title' to 103 Girls Inc of Tarrant County attendees for a TCU STEM outreach event for underprivileged girls of Girls Inc.

Youtube Link: <https://www.youtube.com/watch?v=r0FKBI3-cjo&t=2s>

## CONFERENCES & TALKS CONT'D

Nov 2018	Institution: University of North Texas Health Science Center
<b><u>Organization Speaker</u></b>	Hosted by the University of North Texas Office of Pre-Health Professions, I was invited to speak to 84 pre-health students about the Master's of Medical Sciences program and the benefits the program provides for those applying to professional school.
Sept 2018	Organization: Society of Women Engineers (SWE) Fort Worth Professional Section
<b><u>Conference Organizer</u></b>	Responsibilities included preparing the location and meal plan, advertising across 4 social media platforms, hiring a keynote speaker, and hosting 32 attendees across Texas and Louisiana. <a href="#">Link</a> .
Feb 2016	Organization: Society of Women Engineers (SWE) Region C
<b><u>Workshop Speaker</u></b>	I was selected to present my workshop 'Confidence to Competence' to 30 conference attendees. My workshop materials were also published on the Region C website for the conference. <a href="#">Link</a> .

## SERVICE

Oct 2018 - Current	16 total hours
<b><u>Habitat for Humanity Tarrant County</u></b>	The opportunity to volunteer with Habitat for Humanity Tarrant County has allowed me to contribute to 3 homes located in Fort Worth, TX.
Feb 2017 - Current	125 total hours
<b><u>True Worth Place (TWP)</u></b>	Volunteer opportunities included volunteering in the building's mail room, providing excellent customer service through front desk services, and organizing clothing and hygiene donations. Notable experiences include connecting 8 new volunteers to TWP guest workshops, and participating in 7 foot hygienic clinics.
Oct 2018 - Current	56 total hours
<b><u>UNT Materials Advantage Outreach Chair</u></b>	Coordinated and supervised in summer camps and organizing 20 people to participate in UNT Homecoming volunteer events.

## CERTIFICATIONS

Dec 2018	UNTHSC Information Security Training
Dec 2018	UNTHSC Student Security Training
Dec 2018	Blood Borne Pathogen Training

## PROFESSIONAL AFFILIATIONS

Aug 2013 - Current <b><u>Society of Women Engineers</u></b>	This organization is the world's largest advocate and catalyst for women in engineering and technology. I have served in multiple leadership positions for this Society. For FY20, I serve as a Leadership Coach, a SWE Graduate Learning Content Coordinator, and the Fundraising Chair for the Dallas Professional Section.
July 2019 - Current <b><u>American Physiological Society</u></b>	This organization is an advocate for the advancement of the understanding of life and health. Efforts lead to treatment of diseases affecting humans.

## SKILLS & INTERESTS

Exceptional proficiency in social media marketing	Proficiency includes Facebook, Twitter, Instagram, and Youtube. Past projects include renovation of the Fort Worth Society of Women Engineers professional section's website. This increased website traffic by 90% and social media traffic by 312%. Other outcomes included donations of \$300 within first 3 months of renovations and increased meeting attendance.
Baking	I enjoy making and decorating a three-generation sugar cookie recipe with royal icing.
Blogging	When inspired, I enjoy transforming lessons taught to or learned by me into blogs to catalyze conversation with other people experiencing similar lessons.