

Alyson Nichole Askew

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Education

University of South Alabama

Bachelor of Science: Computer Engineering | 2017

GPA: 3.57

Major GPA: 3.62

Honors and Scholarships

2016	Honored as a member of <i>Tau Beta Pi Honor Society</i>
2016	Elected as Vice President of <i>Eta Kappa Nu Honor Society</i>
2015	Offered and received the <i>Airbus Engineering Scholarship</i>
2015	Honored as a member of <i>Golden Key Honor Society</i>
2012	Honored as a member of <i>National Society of Collegiate Scholars</i>
2011 –2015	Seven inclusions on the <i>USA Dean's List</i> (Fall 2011:2012:2015 / Spring 2011:2013:2014:2015)
2011	Offered and received the <i>University of South Alabama Moulton Presidential Scholarship</i>
2007	Honored as a member of the <i>National Junior Honor Society</i>

Academic & Research Experience

Undergraduate Student Instrument Project Student Flight Research Opportunity

University of South Alabama Department of Electrical and Computer Engineering

Mentors: Edmund Spencer, Ph.D., Samuel Russ, Ph.D., Carlos Montalvo, Ph.D., and Saeed Latif, Ph.D.

Time Dedicated: August 2015 – February 2016: 3+ hours per week

Responsibilities:

In August of 2015, I began working on the development of a CubeSat to launch in NASA's CubeSat Launch Initiative program. This CubeSat is to be an expansion on the launching of a payload on a sounding rocket completed in 2015. The payload measured the changes in impedance as the rocket changed altitude. The payload on the CubeSat will measure the difference in impedance in different positions above the Earth's atmosphere. I developed a program to convert the illegible data given by the payload into a usable form so that the data can be interpreted as it is received.

Undergraduate Directed Studies

University of South Alabama Biology Department

Mentor: Glen Borchert, Ph.D.

Time dedicated: October 2013 – May 2014: 3+ hours per week

Responsibilities:

In October of 2013, I began assisting in the development and testing of a new way of producing miRNA sponges that decreases cost and increases throughput. MiRNA sponges are short miRNA strands that bind to certain miRNA sequences which can affect how cells behave. My duties included running PCR solutions (amplifies the miRNA sequence) on an agar gel to separate different sponge lengths and extracting the desired sponge lengths, cloning the miRNA sponges, testing for concentration of the sponges, writing lab procedures for performing the PCRs, cloning, and concentration testing, and keeping record of the results of each formula used in cloning.

UCUR Undergraduate Research Fellow (2013)

University of South Alabama Committee on Undergraduate Research

Mentor: Glen Borchert, Ph.D.

Biology Department, University of South Alabama

April 2013 – October 2013: 20+ hours per week

Responsibilities:

In March of 2013, I was invited to participate in the University of South Alabama's Undergraduate Research program known as UCUR. During my time in this program, I conducted research on sequencing the genome of the American Shiitake mushroom to explore its potential commercial use. My duties were to extract the DNA from the mushroom cells and monitor its sequencing. I then examined the data given by the sequencer and charted the trends of the genome to similar mushroom species within the same genus. After completion of this project, I presented a poster at the annual UCUR poster session and submitted a paper on our findings.

Research Published

Sara-Elizabeth Cardin and Tabitha J. Perry, Caroline J. Polska, Laura Valverde, **Alyson N. Askew**, Dillon G. Patterson, Glen M. Borchert. MicroRNA Sponge Production using PCR-based Concatemerization of Short DNA Oligonucleotides. *MOJ Cell Sci Rep.* May 2015, 2(2): 00025. doi: 10.15406/mojcsr.2015.02.00025

Research Presented

Askew, A., Roberts, J., Nguyen, M., Vakharia, B., Wallace, B., Mata, J., & Borchert, G. (2013, October). Next generation *de novo* sequencing of the *L. raphanica* genome. **Poster** presented at the University of South Alabama Undergraduate Research Program's Poster Session.

Volunteer & Community Involvement Experience

2016	Served as Floor Referee in <i>BEST Robotics Competition</i>
2016	Tutored students in <i>Digital Logic Design</i>
2016	Developed a recycling program through <i>IEEE</i> in collaboration with <i>AIChE</i>
2016	Headed <i>IEEE</i> involvement in the <i>American Heart Association's Mobile Heart Walk</i>
2015–Present	Founder and Secretary of the <i>USA Jagtronics Club</i>
2015	Participated in <i>IEEEExtreme 24-Hour Programming Competition</i>

Professional Affiliations

2016–Present	Student Member of the <i>IEEE Computer Society</i>
2016–Present	Student Member of the <i>Society of Women Engineers</i>
2016–Present	Student Member of the <i>Association for Computing Machinery</i>
2015–Present	Student Member of the <i>Institute of Electrical and Electronics Engineers</i>

Non-Academic Work Experience

Software Engineering Intern

February 2016 – Present

Red Lion Controls
3101 International Drive
Mobile, AL 36606

Responsibilities:

As an intern at Red Lion Controls, I test and troubleshoot problems with devices and software in development. I also develop and maintain automation programs in AutoIt to expedite the testing process for new releases, as well as fix bugs within the testing software in Java.

Electrical Engineering Co-op

August 2014 – August 2015

Alabama Power Company: **Substation Maintenance**
650 Michigan Avenue
Mobile, AL 36605

Responsibilities:

As a Co-op at Alabama Power in Substation Maintenance, I assisted in upgrading breakers in the Blakely Island Substation and in the addition of a high voltage side to Basset Creek Substation. The breaker upgrade involved altering substation plans to include the new breakers, as well as altering wiring plans to incorporate the changes required by the differences of the new breakers. My part in the addition to Basset Creek involved assisting with integrating the internal control wiring for the new side with the present systems that were already in place.

Alabama Power Company: **General Shops**

744 County Road 87

Calera, AL 35040

Responsibilities:

During my time in General Shops, I developed Microsoft Access databases to assist in management of the transformers in the shop. I also assisted with the execution of Alabama Power's yearly safety conference. I helped set up the venue and assisted in making sure the event ran smoothly.

Relevant Skills & Experience

I have proficiency in C++, Java, AutoIt, Python, LISP, VHDL, and Verilog. I am also proficient in the use of Microsoft Excel, PowerPoint, Word, and Access.

Relevant Coursework

Engineering		Computer Science	
EE 263	Digital Logic Design	CIS 210	Intro to C++ Programming
EE 264	Microprocessor System Interfacing	CIS 211	Advanced C++ Programming
EE 268	Digital Logic Design Lab	CSC 231	Intro to Data Structures Algorithms
EE 321	Signals, Systems and Digital	CSC 311	Networking and Communications
EE 368	Microprocessor Sys-Interface Lab	CSC 322	Operating Systems
EE 401	Intro To EE and CpE Design	CSC 416/516*	AI Theory and Programming
EE 438	Virtual Instrumentation		
EE 441/541*	Computer Networks		
EE 447	Programmable Logic Devices Lab		
EE 454/554*	Digital Computer Architecture		
EE 457/557*	Embedded System Design		
EE 494/548*	Computer-Network Security		

** Course double-listed and taught as a graduate course.*

References

Glen Borchert, Ph.D.

Assistant Professor, Biology Department, Arts & Sciences
Assistant Professor, Pharmacology Department, College of Medicine
University of South Alabama
251.460.7310
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Samuel Russ, Ph.D.

Previous Interim Chair: Electrical and Computer Engineering
Associate Professor, Electrical and Computer Engineering
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251.461.1378
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Michael Doran, Ph.D.

Director: *University of South Alabama Honors Program*
Professor of Computing
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Georgios Lazarou, Ph.D.

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Edmund Spencer, Ph.D.

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