

RISE NEWSLETTER

SPRING 2018



RESOURCES TO INSURE SUCCESSFUL ENGINEERS
COLLEGE OF ENGINEERING • UNIVERSITY OF DELAWARE



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The editors wish to extend their gratitude to all who contributed articles to this newsletter and aided in its publication.

I am pleased to invite you to share in this edition of the RISE Program Newsletter. Throughout the academic year, as well as during the summer and winter, RISE Program participants are excelling academically; supporting our campus through their leadership and service; traveling to other countries to study abroad, and making discoveries through research that can literally change our daily mode of operation. It is important that all those who have a vested interest in the students of the RISE Program understand the scope of the many accomplishments they experience during their matriculation at the University of Delaware.

We look forward to this newsletter serving as a vehicle to highlight our students and the many interests they have in addition to their primary goal of obtaining a degree in the College of Engineering. Our students have worked diligently to produce this newsletter and we hope you will enjoy the articles enclosed. We look forward to your feedback and your continued support.

Marianne Johnson ~ Academic Program Manager ~ Student Development & Support ~ RISE Program



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Words from RISE Alumna

Dr. Monique Head



MCE '02

BCE '00

Since January 2017, Dr. Head has led the School of Engineering at Morgan State University as the Associate Dean of Research and Graduate Studies, where she has focused on increasing the funding allocations for engineering graduate students and increasing research grant submissions. Prior to joining the faculty at Morgan State University in 2011 from Texas A&M University as a tenure-track Assistant Professor (2007-2011), Dr. Head has secured more than \$1.5M in grants involving cutting-edge technical research projects while also creating experiential learning and discovery opportunities for both undergraduate and graduate students via the research projects. Her research lab, Green Transportation Infrastructure Center (GTIC), is focused on addressing our nation's deteriorating transportation infrastructure through the application of fundamental engineering principles and use of fiber reinforced polymer (FRP) bars to replace conventional steel rebar within concrete bridge decks and columns, especially within seismic zones (i.e. bridge and earthquake engineering). Dr. Head has published in top-tier journals, and is a member of several national professional organizations. In 2014, she received the American Society of Civil Engineers (ASCE), Maryland Section, Outstanding Educator of the Year Award and the University of Delaware, Department of Civil & Environmental Engineering Citation for Outstanding Alumni Achievement. In addition to her national and international service, she enjoys facilitating engineering outreach activities for middle and high school students to stimulate an excitement for science, technology, engineering and mathematics (STEM). She is passionate about increasing graduation and retention rates, especially of female engineering students and students from diverse backgrounds, and is focused on enhancing research and innovation at Morgan State University.

Dr. Monique Hite Head is a native of Newark, Delaware. She received her bachelor and master of civil engineering degrees from the University of Delaware in 2000 and 2002, respectively, and her doctorate in civil (structural) engineering from the Georgia Institute of Technology in May 2007. Dr. Head is also an Associate Professor in the Department of Civil Engineering, and conducts large-scale experimental testing using advanced materials like fiber reinforced polymer (FRP) bars to develop better design methodologies as part of performance-based seismic bridge design.

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Where are RISE Alumni now?

Monroe Hite

BCE '98

During my senior year (1995-1996), I interviewed for a position here at DE Department of Transportation through UD's Career Services. I saw a posting for interviews while obtaining information at the Career Services Building on campus.

Currently, I am the Group Engineer for the Right-of-Way Engineering Section. I oversee the Team Support, Utilities, Railroad and Survey Sections with a total staff of almost 40 employees. I am a Professional Engineer (PE) with the State of Delaware. I've been at DelDOT for almost 22 years (16 years in a managerial/supervisory role).

**Amber
(Dove)
Young**

BEE '03

Sr. Manager, Transmission Planning for a major energy company (PHI, An Exelon Company). I am responsible for long term reliability of the electric transmission system for Pepco, Delmarva Power, and Atlantic City Electric. I manage groups of engineers that evaluate the long range plan of the transmission system and determine the long term needs of the system.

**Dawn
(Dove)
White**

BEE '03

Sr. Manager, Investment Strategy for a major energy company (BGE, An Exelon Company), responsible for developing long range financial and business plans and ensuring execution of current year spending.

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Senior Spotlight

Jalisa Delauney - Chemical Engineering



My name is Jalisa Delauney. I am a senior chemical engineering major from West Orange, New Jersey. I am involved in a number of things on campus outside of the RISE Program: Alpha Kappa Alpha Sorority, Inc. , Each One Reach One mentor, a NSBE Senator and a member of AIChE. Participating in Pre-College Initiatives (PCI) through various NSBE chapters along with my high school chemistry teacher is what inspired me to become an engineering major. I fell in love with the concept that I could have a hand in creating products that make people happy and add value to someone's life.

Advice to an incoming freshman: Work hard, play hard, then take a moment and get back to work again. There are going to be some areas of study that come easily and others where you really have to work to understand the information and not just pass the exam. Comprehension will get you a lot farther than memorization but if you are burnt out from studying all the time without a work-life balance it will be a lot more difficult to succeed.

I chose to attend the University of Delaware because of the reputation that the Chemical Engineering department has. In addition, when I visited campus there was such a strong feeling of community and pride associated with being a Blue Hen. Once I earn my engineering degree I plan to work in industry as a practicing engineer for a consumer goods or personal care company. At some point I plan to attend law school and pursue a degree in patent law.

My favorite places to do work on campus are the third floor of the library when I need to study for an exam because it is quiet and there are personal cubicles with outlets and a lot of space, the NSBE office when I am doing homework because it is mildly social but still a good place to focus and Pearson Lab for simulations because the temperature does not change every hour like in the other labs.

Patience, perseverance, and passion are the three things I would say you need to get through an engineering program. The patience to know that you may not get everything correct the first time or understand every concept quickly. Perseverance to keep pushing yourself when the nights get long and the courses get difficult or you have a huge credit load. Finally, passion, because that is what will fuel your internal fire, knowing that all your hard work will be worth it at the end.

I found out about the RISE Program through an invitation to participate in the Get Ahead Program during the summer semester prior to the start of my freshman year of college. Why chemical engineering... this is the broadest discipline of engineering and I wanted the freedom to be able to have a robust career post graduation. I knew that I was interested in making personal care products and majoring in chemical engineering would set me up for success in addition to giving me the tools and information I need to pass the scientific portion of the bar.

My experience in the RISE Program has been beneficial. It is nice to know that there is a community of people with similar interests and backgrounds in engineering to communicate and study with. When I was a freshman I was able to find a support group from the upperclassmen and now I am able to be that support system as a senior. The RISE Program has opened my eyes to a lot of opportunities within the engineering field and made me realize the importance of being a well rounded engineer. Their personal branding, networking and professional development workshops have provided me with skills that I will hold on to and use for a lifetime.

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Student Interview

Gustavo Silveira - Chemical Engineering, Freshman



How was your first semester of college?

My first semester was filled with excitement. The excitement came at the diversity of activities available within on-campus life, and the knowledge that I would never run out of new, constructive experiences. The challenge was that I simultaneously never ran out of fast-paced coursework. The composition of these feelings required not only the re-doubled studying of a new college student, but also that I cultivate ability to balance short-term coursework with the longer-term benefits of participation in college life.

What campus activities/clubs and extracurriculars are you in?

I am mainly involved in the RSOs: The Food Recovery Network, Honors Engaging in Neighborhood Service, the Global Language and Culture Partnership Program, the organization-building stages of Honors Mosaic, and the American Institute of Chemical Engineers.

What inspired you to have an engineering major?

I chose the *chemical engineering major because I had the greatest experience with the chemical engineering problem-solving framework, and also the greatest interest for the sorts of mass- and energy-transfer-focused work in the curricula.*

In your opinion, what personal qualities should a student possess to be a successful engineering student?

I believe a successful engineering student must be diligent and creative in some dimension of intelligence (as givens), but must also be humble in order to maximize the benefit of the engineering curricula, and have a thorough understanding of their self.

Engineers must constantly re-evaluate their status quo, and determine the degree to which we have fully learned all required material, are connecting our day-to-day with our long-term plans, and be able to enumerate exactly what and how we are thinking (in professional/academic and in personal settings) on demand.

How has the RISE Program helped you in your process of becoming an engineer?

This may seem like a standard line from the program coordinators, but participation in the program's events has been immensely helpful to me. The RISE workshops, including the October research symposium and the March career conference, have demonstrated the facets of the community of professional engineers, and allowed me to trace various possible paths for myself through my chosen curriculum. The ability to connect with older students in the program in an authentic setting has given me a much-needed picture of my possible future, and also contacts with whom I may discuss shared experiences throughout my college career.

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Student Interview

Kai Starnes - Civil Engineering, Freshman

How was your first semester of college?

It was challenging but rewarding. After I finished the semester with good grades, I recognized my own potential and what I can really achieve with hard work and commitment.

What campus activities/clubs and extracurriculars are you in?

I am on the Track and Field team and I am involved in the National Society of Black Engineers (NSBE) and Each One Reach One mentoring program.

What inspired you to have an engineering major and what do you enjoy most?

My dad works around many engineers and picks up a lot of their knowledge and amazes me with what he is able to do with that knowledge. Also, introductory engineering courses in high school allowed me to discover my love to design. I enjoy being surrounded by people with the same passion for innovation and the major consists of a lot of teamwork so you feel like we are all in it together, even if we differ in fields.

Tell us about your experience with the RISE Program?

The RISE Program introduced me to many academic as well as social resources. It is an opportunity to expand your social network and provides a lot of academic support which was really beneficial for me.

How has your experience at UD impacted your decision in becoming an engineer?

Yes, I used to think engineering was going to be so boring and difficult but the courses at UD (especially Intro to Engineering) keep you engaged and make you feel accomplished when you understand, so it drives my passion for engineering and reassures me that this is what I want to do.

In your opinion, what personal qualities should a student possess to be a successful engineering student?

Passion, because if you forget why you are here, you are not going to put in the same effort and you will be bored.

Why did you choose your type of engineering (mechanical, civil, chemical, etc.)?

A recent visit to Jamaica, where my family is from, motivated me to use my passion for design to design and build in order to increase the quality of infrastructure.

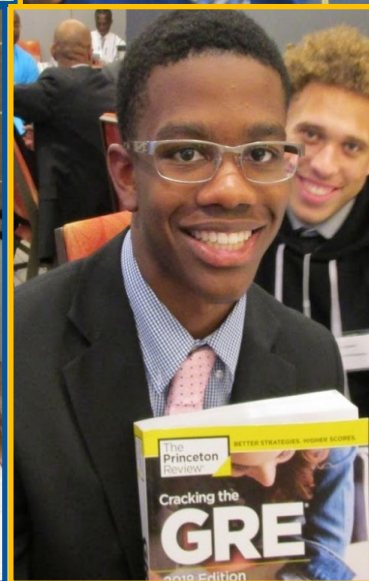
How has the RISE Program helped you in your process of becoming an engineer?

It has given me the opportunity to attend conferences with graduate students and more experienced students presenting their work. This gave me a sneak peek and examples of what I will be doing in a couple years and the provided feedback is helpful for me in the future.



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RISE Student Activities



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RISE Student Activities



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Winter Session

Muizz Hassanali - Mechanical Engineering, Freshmen



Muizz chose to major in mechanical engineering because he likes to create tools to fix things. He has known for a while that he wanted to be an engineer, because he sees problems in the world and wants to make it better. Another passion of his is cultural diversity and awareness. Over 2018 winter session, Muizz decided to combine his two passions through research. He worked with Professor Buckley in the Mechanical Engineering Department on a research project to increase diversity in the engineering field at the University of Delaware.

The majority of Muizz's research relied heavily on the problem JMP for statistical analysis. Professor Buckley had conducted a survey during the summer of 2017, before Muizz started his journey at UD, and he was given the role to sort the data. The data contained responses from high school students who were interested in pursuing an engineering degree before and after they completed the summer program. The goal of his and Professor Buckley's research is to identify trends in high school to improve the summer program that will encourage more students to enter the field of engineering in college.

In addition to his number-crunching this winter he also took a winter class. The class was MATH 242 which is a required course for his major.

Muizz is continuing his research with Professor Buckley and has begun to help create the report for the project. After this summer, Muizz will analyze another set of data that will be compared to his data from this past winter. He is glad to have been given the chance to contribute to the increasing diversity in the College of Engineering at the University of Delaware.

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Student Interview

Jared Pineiro - Electrical Engineering, Sophomore

What inspired you to have an engineering major?

I have always been fascinated by technology and the idea of making new technology, and I love math and science, and hate writing, so engineering seemed to be a perfect fit for me. Plus, my family works in IT and my dad was pushing for me to study engineering since there are a lot of jobs in the field now.

Tell us about your experience with the RISE Program?

My favorite part of my experience with RISE has been fulfilling my obligations with my close friend in the program and being able to have fun together.

What advice would you give to an incoming freshman?

Try to get to know a decent amount of people early on when there isn't a lot of work (go to the Hen Zone, attend events, etc.), don't spend too much time in the library or secluded in your room, and try to work with (either cooperatively or separately in the same space) other people as much as you can. The workload isn't terrible first semester, so it's better to make friends then that will make life easier when the work gets harder. But also try to get a good start for your GPA; it's really all about balance.

What campus activities do you participate in for fun?

I participate in Perkins Live occasionally, especially for Bingo because that's the best event every semester, as well as various other events, such as Ag Day.

In your opinion, what personal qualities should a student possess to be a successful engineering student?

I feel that in order to be a successful engineering student, you have to be patient when working through new concepts and be willing to take the time to learn it right early on. Another important asset is good time management, which is really applicable to any student in any major.

How has the RISE Program helped you in your process of becoming an engineer?

RISE has given me comfort in the knowledge that there are resources available to me should I need them, such as tutoring, and I have taken note of what opportunities are available through RISE for potential internships, connections, etc.

How do you feel about your major so far?

I really love my major so far, nothing has been insanely difficult, the classes are interesting, and all the projects have been a lot of fun. The atmosphere of the major is fairly peaceful, and the other students in the major are generally pretty helpful and amicable.



Our Gradating Senior **RSAC Members**

Kierstyn Harris - Chemical Engineering



As a chemical engineer, I plan to pursue a career in cosmetics, personal care products, and consumer product manufacturing. I aspire to have my own line of cosmetics for women of color.

Being a part of RSAC, I was very excited to be a part of the process of creating the RISE Newsletter. It's a lot of hard work, but getting to work with my fellow RSAC members, it was definitely worth it. Being in RSAC, I have been able to be more involved in RISE and I have gained leadership experience by being one of the secretaries.

This is my fifth year as a RISE participant and I have been in RSAC for three years. Working with all of my fellow RSAC members, Ms. Johnson, and Ms. Tolson was an absolute pleasure and an incredible experience. I would definitely recommend RISE members to join RSAC!



Tobias Mazal - Chemical Engineering

My time in RISE has allowed me to grow as a person and has expanded my horizons through numerous opportunities for success. I will be pursuing a PhD at UCSB next year and am thankful for everyone I've connected with in RISE throughout my journey.



Amy Nicolas - Chemical Engineering

I want to use my chemical engineering degree in the pharmaceutical industry. I want to participate in research and development of new drugs.

Meet Our RSAC Members

Latifa Ali - Junior



I plan on using my mechanical engineering degree to land a job in the manufacturing sectors.

Alainee Barkley - Sophomore



With my major in civil engineering and my minor in Sustainable Infrastructure, I plan on going into the Construction or Construction Management field.

Danielle Cevis - Sophomore



As a biomedical engineering major, I intend to go into neuroscience research on brain mapping and neuroimaging.

Jorge Hernandez - Junior



I want to be a civil engineer because we are the most CIVILized major. Also I want to enter the realm of politics with a scientific perspective instead of a political science approach.

Heidi Herrera - Sophomore



As a chemical engineer, I plan on going towards an environmental route by working with water treatment or energy.

Meet Our RSAC Members

Nicole Moylett - Senior



I hope to use my degrees in mechanical engineering and Japanese to work for Toyota as a liaison for Japan and America.

Joy Muthami - Junior



With my degree, I hope to go to graduate school for nuclear engineering, and eventually become a researcher in the field of nuclear energy.

Jared Pineiro - Sophomore



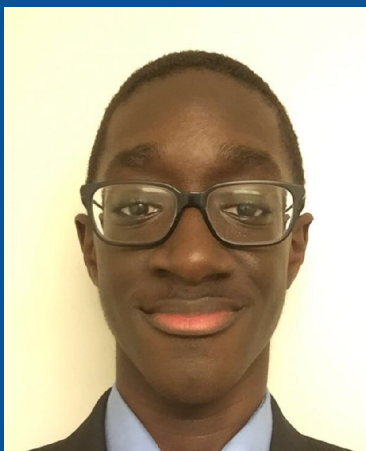
I want to use my electrical engineering degree to learn and design products that I can sell and eventually own a company of my own.

Ian Pierce - Junior



I intend to use my degree to pursue a job in industry, working in the exciting field of tissue engineering. I would also be interested in using it to further pursue my education, in the future. Overall, there is a lot that can be done with a degree in biomedical engineering and I am open to the various options.

Mohamed Seck - Junior



As an aspiring chemical engineer, I have many career paths to choose from. Yet I have a particular interest in one of two career choices: either industry and process safety design or pharmaceuticals.

Alexis Withers - Sophomore



I plan on attending graduate school through a fellowship program to earn my Master and/or Doctorate degree in civil engineering. I plan to use these degrees to land a job in either the transportation or structural sectors of the Civil Engineering field.

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Toby's Tips ***For Applying to Graduate School***

Written by Tobias Mazal

If you've decided to apply to graduate school following your undergraduate education at the University of Delaware, check out these tips for some application advice:

- Start early! Applications are generally due in December or January, but that doesn't mean you should leave them until then. Getting in touch with your recommendation letter writers early in the semester also ensures those will be submitted in time. Furthermore, applications submitted earlier are typically considered first through the nature of rolling admissions.
- Plan your GRE examination in advance. Most schools will require GRE scores on their application. Planning ahead gives you time to take the exam again, need be. However, proper studying and taking practice exams is the best preparation for the real thing.
- Look out for fellowship opportunities such as NSF, NDSEG, or GEM Fellowships. These prestigious opportunities provide a chance to make you a more competitive candidate both for applying to schools and when selecting a research advisor.
- Don't be afraid to reach out to professors. If you really like a specific program or research area, a courteous e-mail can demonstrate your interest and make your name stand out.
- Prepare your statements in advance. You may have a wide array of required documents ranging from statements of purpose to diversity statements to personal essays and resumes (fun!). It takes time to develop these fully. If you have the chance, ask your advisors or letter writers or even career building services provided by the College of Engineering to look over your statements to make them competitive.
- Stay organized! Depending on how many schools you apply to, there may be plenty of files to keep track of. I recommend organizing and backing up folders on a few storage devices or online.
- Be sure to do your research regarding the programs you want to apply to. Online rankings only tell you so much, so if you know professors or graduate students in the research area you're interested in, they may be able to offer their opinions to help you consider programs.



RESOURCES TO INSURE SUCCESSFUL ENGINEERS
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Student Organization Partners



NSBE
NATIONAL SOCIETY OF BLACK ENGINEERS

Since its establishment by two Purdue University undergraduate students in 1971, the National Society of Black Engineers (NSBE) has since grown from 6 to over 16,000 active members in the United States, with over 500 chapters. NSBE is one of the largest student-run 501(c)(3) nonprofit organizations in the nation. The University of Delaware's chapter of NSBE attended the 44th Annual Convention in Pittsburgh, PA this past March giving our chapter members exposure to a global network of engineering students and professionals. Our chapter has held events to foster a community of black engineers at UD including College 101 (a survival guide for freshmen), General Body Appreciation Day, and a Study Skills Blitz workshop which was hosted in partnership with the Office of Academic Enrichment. We have also partnered with the Society of Hispanic Professional Engineers (SHPE) to host a dodgeball tournament during National Engineers Week. Throughout the year our members have participated in community service initiatives including the annual Breast Cancer Walk at the Wilmington Riverfront, work with Urban Promise in Wilmington, and our annual Earth Day Clean up at White-Clay Creek Park. NSBE UD will continue to live our mission; ***"to increase the number of culturally responsible Black Engineers who excel academically, succeed professionally and positively impact the community"*** by advocating for and supporting black students studying engineering on both the undergraduate and graduate levels.



The mission of The Society of Hispanic Professional Engineers (SHPE) is to change lives by empowering the Hispanic community to realize its fullest potential and to impact the world through STEM awareness, access, support, and development. This year the UD Chapter of SHPE held workshops to help students become proficient in LinkedIn and Handshake. These workshops taught students how to increase their likeliness of obtaining summer internships and securing employment after college. SHPE also co-hosted a dodgeball tournament with the National Society of Black Engineers (NSBE) during the University of Delaware's National Engineers Week celebration. The event had participation from many different engineering majors and was a fun way to kickoff E-Week. Overall, it was a great year for SHPE with many opportunities for members to network, learn, and have fun.