

MAY 2014

# RISE NEWSLETTER

***Everyone can rise above their circumstances and achieve success if they are dedicated to and passionate about what they do. Nelson Mandela***

It seems, at times, in the life of a university student difficult to remember that you really do have the power to affect change. Globally, yes, you certainly can, but let's talk about what might be more immediate...how about today, tomorrow, this semester? There are many challenges, even obstacles you may face that would cause you to forget the power you truly possess. The most challenging part of the work I do is helping students realize that you are already equipped with what you need to be a successful (not just passing) student. Yes, *success* is relative but you are preparing for your life as a contributor to society and as someone who can provide for your own needs. Mr. Mandela's quote above begins with the very significant "everyone". There isn't one student who I have had the pleasure to work with who could not be successful. But, there were many who doubted their ability. We all have moments when doubt creeps into our thoughts. Ask anyone you trust and if they are honest, you will find the previous statement to be true. It is, however, what happens after the doubt that defines your ability to be successful.

Today, we celebrate your success, your determination, your passion. The completion of your first year of university study is cause for celebration. The completion of the 2<sup>nd</sup> or 3<sup>rd</sup> year is certainly cause for celebration. And, without question, the completion of the time that now confirms you are ready to become a contributor to society and provide for your own needs is cause for celebration! Is this the end of doubt, challenges, obstacles? Absolutely not. But, I hope, very sincerely, you recognize that you really do have the power to affect change; starting with yourself.

Ms. Johnson

***You are not here merely to make a living. You are here in order to enable the world to live more amply, with greater vision, with a finer spirit of hope and achievement. You are here to enrich the world, and you impoverish yourself if you forget the errand.***" Woodrow Wilson, 28th President of the United States



*RISE Program Newsletter provided through generous support from:*

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

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# RISE NEWSLETTER

## A WORD FROM RISE ALUMNI



My name is Mason Gibbs and I am a Specialist in Engineering in the Global Engineering Services at Merck & Co., Inc. I studied Mechanical Engineering at the University of Delaware and was an active participant in the RISE Program for all 4 years.

In my current role, I am a Process Engineer that designs, procures, tests, installs, commissions, and qualifies manufacturing equipment for Merck's vaccine and oral solid dosage products. The position is both challenging and rewarding. Merck provides products that have saved the lives of millions around the world and my work on capital projects contributes to that effort.

I honestly believe that I would have not made it through college without the RISE Program. The engineering curriculum is challenging, time consuming, and at times discouraging. At times, I thought I would not make it through the Mechanical Engineering program.

Thankfully, RISE was there, the program helped me stay on track, connected me with study groups, friends, and even my future employer. RISE played a huge role in helping me gain a position at Merck. The resources and connections the program provided set me aside from other college students and through the program I was offered an internship with Merck & Co. Inc.; that lead to my current position. RISE was my home, the program was a benefit to me, and it can be to you. If you are a member, actively participate and use the program's resources, it may help you find your career.



My name is Thomas Ebanja. I graduated in May of 2010 with a Bachelor of Science in Mechanical Engineering from the University of Delaware. I am a Field Engineer at DuPont where I've had two assignments. In my current assignment, I am a Production First Line Supervisor at our Cyrel® Packaging Graphics production plant in Parlin, NJ. In this role, I provide leadership for Cyrel® operating personnel in the manufacturing process, lead safety, quality, yield, uptime, and work system efforts in conjunction with area objectives and business critical operating tasks. In my previous assignment, I was a Manufacturing and Quality engineer at the Pyralux® coating line in Towanda, PA. In this role I led productivity and quality initiatives for over 75 products and supported intermediate production in the raw material and finishing areas. I also led RCFA efforts to support on-time response to customer complaints and implementation of corrective actions.

Prior to joining DuPont, I was a Sales and Service engineer at PRUFTECHNIK based in Blackwood, NJ. At PRUFTECHNIK, I was both a marketing agent; created and closed deals with new and existing clients and performed demonstrations of the roller alignment technology at trade shows and customer locations, and a service engineer; doing the actual work on the field.

The RISE Program at the University of Delaware really helped me develop my interpersonal skills, a trait that I believe is crucial for success at any level and within any sector. Through the RISE Program I learned to interact effectively with a variety of personalities and individuals from different backgrounds with different perspectives.



My name is Pernell Dongmo, a 5th year graduate student pursuing a Ph.D. degree in Materials Science and Engineering at the University of Delaware (UD). I have a Bachelor's degree (also at UD) in Electrical Engineering.

Being part of the RISE Program helped me tremendously because the program helped me ease into college, when I started as a freshman. From my experience, the workshops we had to attend (time-management, etc.) made my college experience a less stressful one. Another benefit of being in RISE was being able to communicate with some of the older Electrical Engineering students to gain some tips and advice on classwork, homework, and many other skills.

As you can see, RISE had a positive effect in my college life; I cannot imagine where I would be if I was not a member of RISE. I think every other past/current RISE member would agree with me.

# RISE NEWSLETTER

## UNDERGRADUATE RESEARCH

### **Jonathan Galarraga** Chemical and Biomolecular Engineering Sophomore

My involvement in the RISE Program has helped me learn the importance of growing professionally and engaging in career development experiences outside of the classroom. During spring break of my freshman year, I reached out to a wide variety of different professors in the Department of Chemical and Biomolecular Engineering and asked about available research opportunities. Although many of the faculty members that I contacted did not have available positions in their research groups, I thoroughly enjoyed the experience of networking with them and learning about their work. I later received offers to join multiple labs, allowing me the opportunity to further explore my academic interests in different research fields. Today, I am a proud member of the Christopher Kloxin Research group, which specializes in polymer synthesis.

In the summer of 2013, I worked on a project pertaining to the development of solid state self-healing materials and learned about the fundamentals of organic synthesis. Then, at the start of Winter Session 2014, I started my current project on developing cytocompatible hydrogels to treat articular cartilage defects in collaboration with the Kiick and Duncan research groups.

Osteoarthritis is a chronic condition in which the cartilage that cushions load-bearing joints degenerates causing inflammation, loss of mobility, and pain. Unfortunately, a procedure that effectively treats arthritis by recreating the mechanical function of native cartilage does not yet exist. However, in my current research I hypothesize that articular cartilage defects may be treated with a novel implant that fuses with bone and simultaneously facilitates the regeneration of cartilage complexes. I am constructing three-dimensional

cell scaffolds that redevelop articular cartilage and simultaneously recapitulate the mechanical function of native cartilage by adhering to bone. The aims of my research are to effectively create a hydrogel cell scaffold under *in situ* conditions, to maximize the mechanical properties of this cell scaffold and to study how mesenchymal stem cells or chondrocytes may be integrated into this cell scaffold for the therapeutic treatment of osteoarthritis.



After successfully removing cartilage defects found in bovine joint samples, I created polymer matrices by using photopolymerization through quartz rods in direct contact with monomer solution. The quartz rods used act as light guides, which are then directly attached to hydrogels on bone samples. I am currently measuring the mechanical properties of the adhered materials and quantifying the interfacial strength of my samples by observing how the attached quartz rods respond to tensile and shear forces. Through this process, I am exploring how photografted hydrogels bind to self-etching adhesives applied on bovine bone. I will later explore the process of patterning cells throughout hydrogels by functionalizing polymer matrices with specific peptide sequences, and I intend to study how the formation of modulus gradients through light attenuation impacts the mechanical properties and efficacy of the constructed hydrogels.

My involvement in undergraduate research has been instrumental in realizing and pursuing my professional goals. I aspire to

conduct research in tissue engineering and drug delivery mechanisms so that I may impact a large patient population and revolutionize the way modern medicine is perceived and developed. My current research will allow me to complete a Senior Thesis and will later translate to my graduate studies, since I am learning how to apply fundamental Chemical Engineering principles to biological systems. My research has also augmented my experiences within the classroom because it has provided context and motivation behind the material that I am learning on a daily basis; as a result, I am performing better in the classroom, which will later provide me with more career opportunities.

I strongly recommend that underclassmen get involved in research. I found that getting involved in research as a freshman only opened more opportunities for me. By immersing themselves in research, underclassmen may quickly learn about the differences between academia and industry so that they may explore their interests in graduate school or their respective work fields. I have personally found research and the prospect of graduate school to be engaging and fulfilling, but many of my peers have utilized research as a medium to meet their own career aspirations and goals. For example, some students have been offered multiple internship opportunities and gained access to different leadership positions as a direct result of their work experience and involvement in research. More importantly, research may help students develop engineering intuition and soft skills necessary for industry. These assets are universally important in engineering and undergraduate research enriches students' experiences here at the University of Delaware by providing them with exposure to innovative technologies and a more comprehensive understanding of their coursework.

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## INTERVIEW

### Christopher Youngquist Civil Engineering Junior

#### What is engineering to you?

Engineering is a way to design and improve the world. Engineers are vital for society to grow as a whole.

#### What do you feel are required attributes of an engineer?

Engineers need to be hard-working and have an undying passion, this passion keeps them driven and determined.

#### How do you cope with being an engineering major when things get strenuous?

When things get strenuous I try to take a step back and reflect on the amount of work I'm doing. Then I try to fully remember my purpose and potential as an engineering graduate.

#### How have you changed since your freshman year?

I certainly have changed a lot since my freshmen year. On the academic front, I changed my major. As a person, I grew in many ways. I really learned the value of working hard and striving for the ultimate goal of leaving the world a better place from when I first entered it.

#### Do you believe that engineers play a leading role in today's society? If so, what is that role?

Of course! What would the world be if it wasn't for the ingenuity of engineers? Engineers help advance mankind into what we are today and will continue to take us even farther.

#### How has your experience at the University of Delaware impacted your decision in becoming an engineer?

My experience at the University of Delaware has been incredibly important in keeping me interested in becoming an engineer. The College of Engineering really provides a wonderful community to be a part of.

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

RISE is a wonderful resource whose ultimate goal is to assist underrepresented engineering students. I've had a great time being a part of the RISE community and have become a better engineering student as a result.

#### What is one thing you would tell someone who's considering engineering as their major?

I would encourage them to explore it as an option. I would tell them to stay true to their cause and they too, one day will be able to help improve the world.

#### What advice would you give to someone who no longer thinks that engineering is for them?

I would first ask them about what difficulties they are incurring and point them towards the plethora of resources aimed to help engineering students succeed.



#### What are some things you enjoy most about being an engineering major?

I mostly enjoy the community that engineering majors have fostered and knowing that I'll be going into a field that makes a difference.

#### What are some things you least enjoy about being an engineering major?

It is tough work, but we do what we must because we can.

#### What are your ultimate goals once you have achieved your degree in engineering?

My ultimate goal is to be able to look back and say I saved the world in one way or another.

#### What or who inspired you to become an engineer?

My passion to make a difference in the world is what led me to pursue an engineering degree.

#### What's your favorite place on campus to hang out during your down time?

My favorite place to hang out in my free time is wherever my friends are.

#### What campus activities do you participate in for fun? Give a brief description of the activity.

I participate in a lot of organizations around campus. Most of them deal with the Residence Halls and making them feel more like a home for the residents. One of them in particular is called the Christiana Towers Green Team which focuses on making the residence halls more sustainable and environmentally friendly. I also like to participate in various service activities around campus.

#### What do you enjoy most about being at UD?

I really enjoy the community and the environment UD provides. I like how the university has opportunities to be a part of organizations that really can make a change throughout the campus.

#### What (if any) leadership roles do you have at the university? Who on campus is a leader to you?

President of Christiana Towers Green Team, Governor of Christiana Residence Advisory Board, Chair of Sustainability, Technology and Communications for NACURH Bid Team are the leadership roles I hold at the university. All of my wonderful advisors have been leaders to me, such as Ashley Nickelsen and Dillon Kimmel.

# RISE NEWSLETTER

## MY EXPERIENCE WITH DEPRESSION AS AN ENGINEERING MAJOR

**Zachary Sheffield**  
**Chemical and Biomolecular**  
**Engineering**  
**Junior**

Any engineering discipline requires a lot of time and effort. Internships, jobs, extra-curricular activities, and personal matters may conflict with academics, and this conflict can lead to serious consequences. I've experienced these consequences first hand. As someone who has been diagnosed with clinical depression, my life as a Chemical Engineering student has been a struggle.

As I attempt to write this, I can't think of anything to say; it's frustrating. I honestly want to cry. I thought it would be easy to write an article about having overcome my depression, but it isn't. And that's because I haven't overcome my depression, at least not entirely, and unfortunately I know I never will. It isn't something that kind words and motivational speeches can fix. It's a condition caused by a chemical imbalance and exacerbated by stressors, such as school work. I'm not depressed all the time, but when I am, I am amazed I can function. When I'm not panicking about school, I'm procrastinating because I have no motivation. These are normal things that happen every week. When I'm truly depressed, I have to fight myself from completely shutting down.

Spring semester 2013, I was depressed for weeks. During that time I absolutely hated myself. My self-esteem was already low, but at that time, I somehow managed to lower the bar even further. I was stressed. Personal problems and sickness in my family occupied my thoughts. I had difficulty keeping up with my schoolwork, and as a result my grades were not looking all too peachy, as you can imagine. The worst part was I worked extremely hard. In my eyes, my grades determined my self-worth. Every poor test score further lowered my confidence and self-esteem, and I found it increasingly harder to pull

myself together in preparation for the next assignment. I put a lot of effort into my work, and none of that effort showed. In fairness, I did not take advantage of my resources at the time. My anxiety just crippled me. I was afraid of failing, letting others down; my peers' perception of me, that I wouldn't be able to recover. I was spiraling wildly out of control. Each day felt like a daze. My head throbbed constantly. All I wanted was to enjoy the life given to me, and I couldn't. No matter how hard I tried, no matter what amazing thing happened I always ended back at the bottom with a single word on my mind.

To anyone who has considered suicide, it seems a quick way to end your troubles, but it's not worth it. I'm lucky to have a supportive group of family and friends who love me, and I'm grateful for everything they've done for me. I know it may sound crazy, but I'm glad all of that happened. The experience made me a wiser man. I needed to rethink certain aspects of my life, primarily, if I should change my major.



It wasn't an easy decision. I chose to stay. It would seem that Chemical Engineering was the cause of my troubles, but that's not being fair. Chemical Engineering is stressful and difficult, but I amplified those aspects. I overemphasized grades to the point of setting unrealistic goals. As a consequence, I would constantly be disappointed in myself. Identifying that was a major accomplishment and I was able to adjust my perspective. Making a few changes to my study habits has shown major improvements. Previously, I avoided office hours because I'm uncomfortable asking questions in front of others. Now, if I have a question I immediately email my professor or TA and set up private office hours. Working individually with someone helped my comprehension, which translated to better grades. It illustrates how more self-awareness can have a positive impact. Having a clear, sound mind helped give me direction in my life.

With this clarity, I recently realized I no longer want to be a Chemical Engineer. I enjoy the material, but I do not want to do this for the rest of my life. I believe that, when it comes to your career, happiness is paramount. I enjoy Material Science a lot more than Chemical Engineering; however, I do not regret choosing Chemical Engineering as my undergraduate major. I received a lot more from this major than what I've put into it. I would call that a success. I now see light at the end of the tunnel and I'm motivated to strive forward.

If anything should be learned from my story, it is that through guidance, hard work, and perseverance, a seemingly hopeless situation can become a rewarding experience. My problems consumed me, but support from my loved ones helped me pull myself together.

*The Center for Counseling and Student Development provides assessment, counseling, and support for students with difficulties that interfere with their academic progress. An initial assessment is available to all UD students; for more information, please see [www.udel.edu/counseling](http://www.udel.edu/counseling) or call 302-931-2141.*

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## STUDENT ORGANIZATIONS



The current National Society of Black Engineers (NSBE) chapter is comprised of an executive board of sixteen members and general body of mostly African American Engineering majors. This year, the chapter was led by the ambitious President Rossiny Beaucheur and goal oriented Vice President Scott Amankwatia. With their leadership and shared vision the University of Delaware chapter of NSBE continues to blossom and build a strong academic and social community. There were a number of events this year that upheld the NSBE mission. That mission states "to increase the number of culturally responsible black engineers who excel academically, succeed professionally, and positively impact the community."

One of those events was College 103. College 103 is an annual event NSBE hosts at the beginning of the fall semester. At this workshop, which is catered toward the freshmen class, students learn the do's and don'ts for surviving their first year of college. Students learn about study strategies and resources through exploring academic and social stressors unique to a university atmosphere.

Two popular programs NSBE hosts are the Show and Tell Fashion Show and A Day in the Life. The fashion show informs students on appropriate yet stylish attire for a professional setting. A Day in the Life gives students the opportunity to speak with professionals about a typical day in the workforce.

Through NSBE, members can expect to make lifelong friends, gain useful experience and seek a valuable job opportunity. Each year the chapter strives to uphold the NSBE mission.



The Society of Asian Scientists and Engineers (SASE) is a new Registered Student Organization (RSO) at the University of Delaware. Founded in March 2014, it is an organization that is dedicated to helping student members of all ethnicities and majors succeed in their goals. SASE's mission is to help students achieve their full career potential by hosting workshops, providing resources, and building up leadership skills. SASE wants its members to be prepared for their future goals and careers. For additional information, please e-mail [udsase@gmail.com](mailto:udsase@gmail.com), or tweet at [@UDSASE](#). Join our group page, "SASE – University of Delaware" for updates in the upcoming 2014-2015 year.

In April 2014, we had our first informational meeting and workshop session. Our meeting kicked off with introductions from the executive board and information about SASE and the goals. SASE invited Henry Ma, an applications engineer from DuPont, to speak with us about his career and career plans. After that, he held a question and answer session about topics such as career planning and the importance of community involvement.

The executive board has a lot planned for the upcoming year with the help of its advisors Dr. Bingtong Chen, Dr. Jingyi Yu, and Dr. Lian-Ping Wang. Although SASE is a new group, it strives to be a successful RSO, such as the National Society of Black Engineers (NSBE) and the Society of Hispanic Professional Engineers (SHPE). Some examples of future events that SASE will hold are career-oriented workshops, community service and fundraisers. SASE wants to work with other RSOs as well to hold larger events so that its members can network with members of other organizations.



**SHPE**

Since its reactivation last year, the Society of Hispanic Professional Engineers (SHPE) at the University of Delaware has made significant strides toward accomplishing its ultimate goal: to instill core professional principles and skills into aspiring minority engineers. For example, SHPE at UD attended the SHPE National Conference in Indianapolis, IN this year. Workshops on leadership and cultural awareness helped students gain perspective on what prospective employers and companies desire in SHPE members applying for internships. SHPE at UD also met with leading SHPE administrators nationwide to establish a connection between our community and the mission of SHPE as a whole. Not only was this a great experience for students to make new friends, but also a chance for SHPE at UD to establish meaningful and supportive relationships with multiple chapters in the Mid-Atlantic region. We look forward to collaborating with these chapters' in the future on events such as "La Noche de Ciencias," which engages K-12 students and their families in interactive workshops pertaining to STEM education. The conference's research symposium offered another opportunity for students to learn about innovative research topics, and the conference's career fair provided a unique opportunity for students to meet and interview with prospective employers and learn about different graduate programs.

SHPE at UD would like to thank Dr. Lobo for all of his mentorship and guidance. Although there are many things we are excited to accomplish in the near future, we attribute a large part of the successes we have enjoyed so far to the support and direction he has provided. We would also like to thank Ms. Johnson and everyone involved throughout the RISE Program for their continued encouragement and support, as well as the College of Engineering for their sponsorship for the 2013 SHPE National Conference and their endorsement for all of endeavors.

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## RISE STUDENT ACTIVITIES (2013-2014)

FALL WELCOME BACK, MONTHLY WORKSHOPS, STUDY BREAKS, SITE VISIT



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# RISE NEWSLETTER

## RISE STUDENT ACTIVITIES (2013-2014)

2013 RISE BANQUET, MULTI-ETHNIC CAREER DEVELOPMENT, SYMPOSIA



# RISE NEWSLETTER

## EXTRA-CURRICULAR ACTIVITIES

### Brian Reyes

#### Chemical and Biomolecular Engineering Sophomore

They call me the "chick magnet" back home. All my friends are baffled by the amount of chicks that surround me each day. My secret? Just buy a few dozen hens and bam, instant chick magnet. Why do I have a lot of chickens you ask? It all started back when I was a sophomore in high school. I was part of the Animal and Botanical Science Academy, one of the many learning centers in my district; being in this program also meant that I was a member of a national organization called FFA, which stands for Future Farmers of America. To be a good standing member, I had to maintain an SAE project, a Supervised Agriculture experience, to last me at least the remaining three years of my high school career. I brainstormed for weeks and the project that seemed the most manageable was raising chickens. If you think about it, it is the ideal project. I would be getting free eggs every day and all I had to do was take care of my lovely hens.

### Carlos Velez

#### Chemical and Biomolecular Engineering Sophomore

This spring I participated in the intramural basketball league, and so far it has been a great experience. I enjoy the competitive yet easy going atmosphere of the games. Even if you're not a great player you can still go out on the court and contribute something for your team as long as you put in the effort. Effort is another good thing about the game, namely physical effort. After so many days of classes and being cooped inside studying, playing basketball is a great way to release energy and relieve stress. Another thing I like about intramural basketball is the camaraderie. Working together as a team on the court helps build friendship off the court and its great having dinner with everyone after a hard fought win. Overall, intramural basketball is a really enjoyable experience that I hope to continue in the future.

### Jay Bhatt

#### Mechanical Engineering Sophomore

Recently my life has been super exciting and hectic. Fall semester sophomore year, I decided to try something new because being an engineering major was not enough. So I joined the Army ROTC Program and ran for a position in the student government of my complex with one of my best friends. He decided to run for President, so I decided to run for Vice-President and we both won. Before joining these two groups, I was already a part of a fraternity, and was working at the Academic Enrichment Center. So, as you can imagine, I had a lot on my plate and things started to fall apart. Almost a month into the ROTC Program, I realized that it was going to be impossible for me to continue and decided it was in my best interest to quit. I am still the Vice-President of I.C.E (we renamed our Complex name), and instead of continuing with ROTC, I became the Historian/Associate Director of Communication for my fraternity.

After the first semester, I decided to also get another job. I scored a job at Chipotle and started working two jobs, while also being involved in my fraternity, ICE, and NACURRH (a national conference held for hall governments and student organizations). I worked at Chipotle for a little over two months and decided to quit that job because it was taking too much time away from school work. So, overall my semester has been pretty insane considering I am trying to catch up to basically everything, but I love it. This year I decided to challenge myself and become more involved with campus community (even more than freshman year) and that turned out to be a bigger challenge than expected. Next year I hope to join a sports team and continue to join other organizations that provide me with diverse experiences and help me grow more as a person. At this moment, I am involved in I.C.E, Sigma Phi Delta, Sigma Alpha Pi, S.S.S.P., and the NACURRH delegation team. Next year I hope to add a sport, NSBE, and MESS on this list.

### Jessica Wong

#### Environmental Engineering Sophomore

Some things I like to do in my spare time are Zumba and baking. I find Zumba to be a great way to get a workout in while having fun with my friends. Although I'm terrible at dancing, the Zumba Club here at UD is great at making me feel comfortable and always has a great selection of music. I like baking because it's relaxing, and I love eating the end product. I'm still learning how to make food from scratch, but in the meantime, I like to use baking mixes from the supermarket. My favorite thing to make is Nutella cheesecake, which is something I can actually make from scratch.

This spring semester, I joined the executive board of a new RSO called Society of Asian Scientists and Engineers (SASE) and am currently the Marketing Executive Chair. It's a group that is open to all students of any ethnicities and majors and focuses on developing leadership skills and networking. We are still pretty new, and are always looking for people to join us! In the future, we hope to have workshops and fundraisers. I am very excited to be on the E-Board so that I can meet new people and enhance my skills as a leader. If you would like to learn more about SASE and keep connected through our email list, please email [udsase@gmail.com](mailto:udsase@gmail.com). Through the email list, you will receive more details about the information sessions we are planning to hold later on in the semester. Or, like us on Facebook: "SASE – University of Delaware Chapter."

### Scott Amankwiatia

#### Mechanical Engineering Sophomore

Once I set foot on the University of Delaware's campus, I knew I needed to get involved in extracurricular activities as soon as possible. The RISE Program served as a gateway that exposed me to groups on campus specific to my major. Through RISE I have joined the National Society of Black Engineers (NSBE). NSBE has helped me grow as a leader, as a professional and as a worker. I am currently the Vice President of this wonderful student run organization. Through NSBE I was blessed with the experience to travel to New Orleans and work at a summer engineering camp for minority inner-city children. In addition to NSBE, I joined the Intervarsity Christian Fellowship. I currently lead a Bible study on campus. Intervarsity has also played a crucial role in my growth as a person on campus. In my spare time I get involved with intramural sports such as soccer and softball.

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## INTERVIEW

### Anna Pimenta Environmental Engineering Junior

#### What is engineering to you?

Applying math and science concepts to widespread real-life problems to do work that will benefit a large amount of people.

#### What do you feel are required attributes of an engineer?

A hard work ethic, a natural tendency towards problem solving and an ability to work in groups are required attributes of an engineer.

#### How do you cope with being an engineering major when things get strenuous?

The feeling of an A at the end of the semester is motivation enough for me to study as hard as I can. I've learned that if I put more effort into time management, the stress of homework and studying is reduced.

#### How have you changed in your transition from a freshman until now?

Freshman year I was very dedicated to my studies, and sophomore year my work habits were really inhibited when I made a lot of new friends and had my own apartment. Since then, I've just had to make a conscious effort not to procrastinate and be as productive as I can with the time I have.

#### Do you believe that engineers play a leading role in today's society? If so, what is that role?

Yes, engineers are tasked with solving a lot of the world's toughest problems. Engineers in certain industries have the skill and power to change things that will affect huge amounts of people. For example, biomedical engineers create innovative prosthetics, environmental engineers work on new water treatment methods, chemical engineers work on new drug treatments, etc.

#### How has your experience at the University of Delaware impacted your decision in becoming an engineer?

The resources made available to engineering majors here are very helpful. There are a lot of ways to find jobs and internships, get tutoring, network with professors, etc. The RISE Program is also a unique way of creating an engineering-specific support group where students can go with any kind of problem.

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

The RISE Program has taught me a lot about business etiquette and what to do at an interview as well as how to succeed in classes (i.e. ways of forming good study habits and using every resource available to succeed in classes).



#### What is one thing you would tell someone who's considering engineering as their major?

Engineering requires more discipline than they've probably ever needed to have in the past, but it is perfect proof that hard work pays off and challenges are rewarding.

#### What advice would you give to someone who no longer thinks engineering is for them?

There's a difference between not liking the subject matter and not liking how much work the subject entails. If they don't like the subject, then it's probably not for them, but if they are just stressed because of the workload, then working harder and changing a few habits could make all the difference.

#### What are some things you enjoy most about being an engineering major?

Understanding a subject that's really challenging and doing well in a class, after putting in some hard work for a difficult class, is that much more rewarding because your hard work paid off.

#### What are some things you least enjoy about being an engineering major?

There are often times when no matter how hard you work, you'll still struggle with a class. It's just very frustrating when you work hard studying for an exam and don't do as well as you think you should have because that subject is just not your strong suit (or whatever the reason).

#### What are your ultimate goals once you have achieved your degree in engineering?

I'd like to do environmental work, hopefully with some sort of innovative technology, that will cause the biggest improvement for the largest amount of people possible.

#### What or who inspired you to be an engineer?

My dad was an engineering major and we've always been very alike in that we have very similar thought processes and tendencies to try to understand exactly how certain things work.

#### What's your favorite place on campus to hang out during your down time?

I usually hang out in my apartment with my roommates, just talking and watching TV. I also enjoy hanging out on the Laird turf during the spring because it's so nice outside and there are a lot of other people there.

#### What campus activities do you participate in for fun? Give a brief description of the activity.

I'm in the Christiana Resident Advisory Board and the Christiana Towers Green Team. I like being a member of these because I like the feeling of being in a group and planning events that will benefit residents of the Towers.

#### What do you enjoy most about being here at UD?

I'm most thankful for the friends that I've made here and the things I've been exposed to whether it be internship opportunities, exceptional professors and leadership opportunities.

# RISE NEWSLETTER

MAY 2014

## Stanley Anderson Mechanical Engineering Senior

The anxiety that shows up every two weeks or so for a college student is neither foreign nor commonplace, but strikes most students every time when exams are returned. For some that moment of uncertainty is rewarded with bliss, while others have the challenge of averting a crisis in their minds before they walk out of the room. This crisis is overcoming failure. Not all exams go well, but it is important that this failure becomes an isolated incident. Failure has a way of extending its reach, but if one follows these critical steps, no failed test will destroy your resolve.

### ➤ Take a deep breath.

Most times we already know if we have done well on an exam or not. In the rare cases that we were completely taken by surprise, this step is essential. The deep breath de-stresses your body and gives you a second to calm down. The stress hormones are already at a natural high, but breathing is a way of keeping them low so you will be able to function at an optimal level going forward. There is no point sweating before the heat wave comes.

### ➤ Judge yourself objectively, by what you put on the paper, not by what you were thinking.

Part of the stress people feel when they perform poorly is caused by the fact that they are looking at the work they put out; judging themselves by their thinking. Yes, it was a *sign* mistake, but it was incorrect and as a result you lost points on that question. It is always sensible to fight for points, but it is important that you are not seen as a person who "cries wolf" when it comes to grading. It is best to be honest when challenging a grade, and one needs to think

clearly to make sure they've followed the right processes, but went awry at another point.

### ➤ Don't take your grade personally.

It is an objective evaluation of your work, not your being.

Everyone has an ego, and when it gets crushed it can be devastating. The grade is not the definition of personal failure; it is as simple as not reaching the mark you set. When that happens it **is** difficult to not interpret this poor performance on an exam as a personal failure. However, this is an isolated event. You received a score for four of the most challenging problems that you had seen in your coursework and as a result you did not test well. Had the questions been different, the exam may have taken a different path. Now this is the result that you have and it is up to you to continue to value your being even if your work has not been up to your standards.

### ➤ Don't dwell on your poor performance.

You have a host of other things that need to be taken care of and you can't afford to waste time.

This may be the most important step to overcoming a poor exam score. The exam is over, yet you have this sullen look on your face days later as if your entire life hinged on those two to twelve questions that featured your least favorite integral, vector space and boundary conditions to the wave equation. I will be the first to tell you that your career as a student is far from over and you will need to continue to work as hard as you did before you took that exam to remain successful. Your success is dependent on so many other things that one can never be tested on, but have as much to do with your ability to be as great as your intellect. Your tenacity, determination, discipline, ambition nor leadership will ever be tested on paper and can't be listed as technical job skills. A failed exam can take your GPA, your scholarship and your honor status, but don't allow it to take your happiness, emotional health nor your ability to function as there will be other things in your life outside of school that you will also need to manage.

like the one you could be facing now, you will need the internal strength to overcome failure and continue fighting the good fight to be academically successful.

### ➤ Commit to doing a better job next time by any means within reason.

Failure hurts, but if one does not decide to change their habits to put on a better showing next time, the loss was in vain. You literally failed for no reason at all. Give that poor performance some value and commit to being a better student to avoid having to go through this frustration again.

### ➤ Remember what place exams have in your life!

This auxiliary step is for anyone who does not believe the advice given in the first five. This life is going to be full of ups and downs, and getting down over an exam is not the way to go. No matter what happens on that test, your career as a student is far from over and you will need to continue to work as hard as you did before that exam to be successful. Your success is dependent on so many other things that one can never be tested on; things that have as much to do with your ability to be great as your intellect. Your tenacity, determination, discipline, ambition nor leadership will ever be tested on paper and can't be listed as technical job skills. A failed exam can take your GPA, your scholarship and your honor status, but don't allow it to take your happiness, emotional health nor your ability to function as there will be other things in your life outside of school that you will also need to manage.

I hope that this list helps you in your quest to graduate. I encourage you to continue to take your studies seriously, but refuse to allow a bad experience to negatively affect your confidence and personal life. Appreciate every aspect of this journey and never forget that you are intelligent, diligent and a hard enough worker to excel in any situation. I wish you continued success and infinite serenity going forward.

MAY 2014

# RISE NEWSLETTER

## ENGINEERING ON THE RISE

### GENEROSITY ON THE RISE

#### Elizabeth Chandler Environmental Engineering Junior

CDA Engineering, Inc. is a Civil Engineering firm located in Wilmington, Delaware that is beginning to make quite the name for itself. They have had their hands in a variety of projects, such as working for the Department of Defense and several projects on campus, here at the University of Delaware. CDA Engineering played an integral part in the renovations on South Campus. They have paired with the University of Delaware's chapter of Engineers Without Borders and aided in designing the new dining and residence halls on East Campus. In addition to their professional importance on campus, Colm and Stephanie DeAscanis, owners of CDA Engineering, have taken a personal interest in the university. I was fortunate enough to be the recipient of some of that attention when I received a generous scholarship in their name.

As the fall semester wrapped-up, I was contacted by a university employee asking if I would be willing to give an interview detailing the effect the scholarship had on my experience at Delaware. The article was going to be printed in the University of Delaware's Impact Brochure and required a picture of me. A few weeks later, I found myself in the foyer of DuPont Hall with a photographer, waiting to meet Mr. and Mrs. DeAscanis. Moments later, they walked through the doors all smiles, nothing like the rigid, frightening businessmen I had imagined. While we were having our photo taken, we began talking about what they do, and what I hope to do.

They answered a multitude of my questions, including the biggest of them all—what do engineers actually do?

In answering this, they gave me the opportunity to stop by their office and experience first-hand how an engineering firm works, what kind of work is done, and how it is accomplished. I was able to see the instruments used to survey a given area, the software used to develop a plan, and finished proposals. Because of this happenstance meeting I was able to get one step closer to understanding what it means to be an engineer.

### 3D PRINTING ON THE RISE

#### Sharnita James Mechanical Engineering Senior

The first working 3D printer was created in 1984 by Charles W. Hull of 3D Systems Corp. Hull published a number of patents on the concept of 3D printing, many of which are still used today. In recent years, 3D printing has increased in popularity for a number of reasons. For engineers, it is a great tool for developing a prototype of potential concepts. Artists use 3D printing as a new art form, and fashion designers have created shoes and dresses with it. As technology improves, new uses for 3D printing are developed.

Here are two categories of third dimensional (3D) printing: Subtractive and Additive. Subtractive 3D printing starts with a block of material and then eliminates the material to create a part. Additive, the most commonly known type, builds a part by

adding a material layer by layer. The Mechanical Engineering department, at the University of Delaware (UD), uses a PolyJet modeling printer, which uses an additive type process. Similar to ink-jet printing, 3D print heads deposit polymer material onto a build tray. Two different materials are used: one for the actual model and another for support. After the part has finished printing, the support material is broken off, leaving just the final product.

There are four general steps when developing a part. First, a concept is created using Computer Aided Design (CAD) software. At UD, students use Solidwork® to draw the part they wish to have 3D printed. The part must then be converted to a software language the printer will recognize. This will allow the printer to map the most efficient path for printing. Third, the file is opened in a program, similar to the print dialog box that appears after clicking "Print" in Microsoft Word. Like the print screen in Word, properties and other features may be changed before the part is actually printed. At UD, this program is called Catalyst. Finally, the part is printed. Printing time varies depending on the size of the part. Small parts may take an hour while large parts can take 10-plus hours.

3D printers allow users to visualize concepts and ideas at an inexpensive cost. As technology continues to improve, 3D printers are becoming more affordable. Individual printers are becoming available, which give users of all sorts a chance to express their creativity.

