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# NEWSLETTER

**April  
2021**

Chemistry and Physics Department, Oxendine Science Building – Room 3101, Pembroke, NC 28372  
[chem\\_phy@uncp.edu](mailto:chem_phy@uncp.edu) 910/521-6247

## ***Walk-Thru Open House Saturday, April 17***

The Office of Undergraduate Admissions host an on-campus Walk-Thru Open House on Saturday, April 17. Students and their guests were able to sign up for one of three sessions, where they will walk campus, visit tables, speak with departmental representatives, and receive material. This event, which will closely mimic an outdoor information fair, has been carefully planned, with limited capacity and precautionary measures in place. Special “thanks” to Dr. Rachel Smith in representing our department during the open house and meeting our prospective students and helping recruit future Braves. There were lot of parents and students on our campus since last Friday. Thank you very much, Dr. Smith, for all you do, both for the University and the department. Your service is greatly appreciated.



Rachel B. Smith, Ph.D. Professor / RISE Program Director

***Some of our Graduating Students  
Educational Journey  
News***





### ***James Wellington Graham Educational Journey (Applied Physics)***

After graduating from Scotland high school in 2016, I attended Richmond Community College. I was unsure what I wanted to do, but decided on the Electrical Utility Substation and Relay Technology program because it sounded interesting and provided a well-paying career upon graduation. I did not focus much of my energy on academics in high school, opting to apply far more into sports; but when I focused myself in college, I realized I had a passion for learning. I was especially enthralled with math and science. This passion and my family pushed me to further my education, which led me to UNCP. The first class I took at UNCP was College Physics 2 taught by Dr. Bill Brandon in the summer of 2019. This class inspired me to study physics, and thankfully, Dr. Brandon asked me to do research with him when the class ended. His mentorship has led to a seemingly exponential growth in my knowledge and skills when it comes to physics, and I will always be thankful for that. I have also done research with Dr. Dooling, another physics faculty member at UNCP, where we used computer programs to model physical systems. This has gone a long way in improving my programming skills, which are becoming more and more valuable each year. I have loved my time at UNCP and only wish I had attended sooner. The quality of education, interaction with professors, and affordable tuition has all been amazing. This mentorship and education I have received has inspired and provided the opportunity for me to further my education once again. I have accepted a spot in the Wake Forest University Physics PhD program and will be starting there in the fall. I am excited for what the future holds and cannot wait to get started. I would also like to thank the rest of the physics department at UNCP, Dr. D'Arruda and Dr. Rice. Although, I have not done research with them, their teaching has also been instrumental in my growth as a physicist. Lastly, I am grateful for the RISE program and staff for funding my research and preparing me as a scientist.

Wells will be graduating this spring with excellence. He has been accepted at Wake Forest University for Ph.D. Program in Physics. **Congratulations, Wells !!!**



### ***Evert Garcia-Guzman Educational Journey (Applied Physics)***

At the time of applying to UNCP, I had been considering majoring in Chemistry because at the time it was my strongest interest; however, I decided on physics because I had never taken a physics course and I wanted to learn more. During my first year of physics courses, Professor Thomas Dooling gave me an opportunity to participate in a high-powered rocketry competition, and the following summer Professor William Brandon offered me a spot in his lab to conduct research in magneto-optics. Both of these experiences “sealed the deal” for me. The professors provided me with practical and hands on experience, and a level of challenge that pushed me to improve. Ever since then, I have been having a blast doing research with Dr. Brandon and Dr. Dooling. I have really enjoyed all my courses. I strongly believe that the faculty is by far this university’s greatest asset; I have only had overwhelmingly positive experiences with the faculty. They are fantastic teachers and mentors, and their passion for their disciplines make learning much more fun. There is a lot of hard work required on the part of the student; however, the student will not get as far alone as they will with the aid of the professors, and it is much easier to become acquainted with your professors at UNCP. The physics faculty at UNCP, Professors Brandon, Dooling, Rice, and D’Arruda, are all phenomenal professors; they are great at their jobs! The UNCP RISE staff, Fatima Oliver, Professor Rachel Smith, Professor Sailaja Vallabha, and Professor Robert Poage, will also jump through hoops and provide an invaluable service. They provide funding for students’ research and preparation for graduate school.

I will be starting my Physics PhD program at UNC in the fall where I am currently planning to study Biomedical Physics, a great suggestion made to me by Professor Sivanadane Mandjiny. I am very grateful for all the help I have received throughout my undergraduate journey.

**Congratulations, Evert !!!**



### ***Tiffany Bramblett Simpson Educational Journey (Chemistry)***

I am currently a senior undergraduate research assistant and RISE fellow at UNCP. I am not the typical college student coming straight from high school. I graduated from Fuquay-Varina High School in 2006 and worked in the banking industry for about ten years. After witnessing many of my clients reach financial freedom in their twenties with just a four-year degree, I knew I wanted to begin my educational journey. I applied to UNCP because it was affordable which allowed me to pursue my degree without going into student debt. Once I enrolled, I did not know what subject I wanted to major in; so, I decided to go with the major that I felt would open the most doors for me. What better way to prove to myself that I could tackle anything than to study analytical chemistry. I must admit, there were a ton of sleepless nights, many tears, and a head full of doubt; but with each obstacle that came my way, I was able to face it with optimism knowing that no matter how hard things were, I had my UNCP family there to help guide me along the way. The Chemistry and Physics Department worked together to make my experience at UNCP phenomenal. I had so many advantages that students at larger universities do not have as small class sizes with lots of opportunities to interact with faculty including the opportunity to conduct and present my own research.

So many people helped mold me into the scientist that I was always meant to be. Because of my hard work and persistence, I was accepted to one of the top analytical chemistry graduate schools in the United States. I will be starting my graduate education at Florida State University in the fall of 2021 to pursue my PhD in chemistry. I am so excited to be able to share the knowledge that I have gained at UNCP with Florida State University's campus. I am so grateful for the faculty, staff, and students that have crossed my path here at UNCP and for the people that paved the way for my success.

**Congratulations, Tiffany !!!**

## Student Profile: Aida Cortez

Chemistry student Aida Cortez is featured in the April edition of TarHelium, the official newsletter for the North Carolina Section of the American Chemical Society.

B.S. student in General Chemistry at UNC Pembroke



### Describe yourself.

I was raised in a small town in Florida called Arcadia; but, moved to North Carolina during my senior year of high school. After graduating high school, I decided to attend Nash Community College in Rocky Mount, NC, where I received my AS. Being accustomed to a small class setting, I didn't want to feel a drastic change when transferring, so UNCP was perfect for me. When I am not in school, I enjoy traveling. I enjoy being exposed to new places, people, and cultures. I also love animals and have five cats of my own, so I like spending time with them when I am home. Also, I would like to describe myself as ambitious and driven when it comes to my goals.

### What has been your educational trajectory so far, and what do you plan to do with it?

As of right now, I plan to attend graduate school once I graduate from UNCP. I am interested in working in the industry once I have completed my studies.

### Describe a source of inspiration for you.

I would say that my cousin Marcos is a source of inspiration for me. He is the only person from my close family that went off to college and received his chemical engineering degree. His immigration status was a considerable drawback, and affording school while pursuing his degree, but he was still able to overcome those obstacles. He inspires me because, despite his obstacles, he still managed to accomplish his goals. Compared to him, I have it very easy, and there are no excuses for me not to achieve my goals when he was able to with all his drawbacks.

### What has been the most rewarding aspect(s) of your professional life thus far?

My favorite subject so far in college has been Organic Chemistry. I found the chemistry of carbon compounds fascinating. I also found naming organic molecules using the IUPAC nomenclature quite fun

because it was new for me. Also, being a part of the COMPASS Scholarship Program at UNC Pembroke has probably been the most rewarding. Before transferring to UNCP and being a part of COMPASS, I never knew what route I wanted to take after graduating. But with the help of COMPASS, I have felt more confident in my future plans and studies, so overall, it is a rewarding feeling.

**What is your view of the future of chemistry?**

Examples: new innovations, shifts in the industry, potential challenges that are on the horizon, importance of topics such as sustainability or diversity, or even how you expect your own career trajectory to go.

**What STEM resource (book, website, etc.) do you recommend to others?**

I recommend The Organic Chemistry Tutor on YouTube to anyone who needs help with STEM-related subjects. Whenever I am struggling on a specific topic, this channel is my go-to because it offers many tutorials and practice problems.

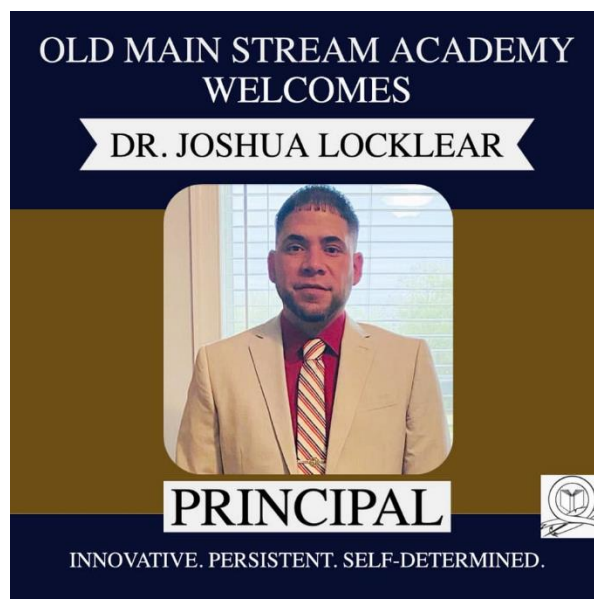
Click on the link below to view more of the TarHelium, the NC ACS Newsletter.

<https://drive.google.com/file/d/1tj1-TWxeBkynQN9fKTdycyunUEDthtbx/view?usp=sharing>

Great job, Aida.

## ***Dr. Joshua Locklear***

Dr. Joshua Locklear graduated with a chemistry degree from UNCP. He will be the first principal of the new Old Main STREAM Academy, which is scheduled to open across the street from us in August. Congratulations, Dr. Locklear.



## ***Chase Middle School Outreach***

On the mornings of Friday, April 23 and April 30, Dr. Meredith Storms worked with two Gamma Sigma Epsilon Chemistry Honor Society students, Glorimar Cruz-Pagan and Haleigh Grace, to present several chromatography-related demos to approximately 140 students at Chase Townsend Middle School in Forest City, NC, Randolph County. Students were exposed to several activities involving the separation of ink dyes in both washable and permanent markers, the hydrophobic nature of cocoa powder, and capillary action -- all topics which are important in chromatography. Students were also given a brief presentation to describe the use of chromatography to ensure the safety and efficacy of our medications. In addition to the demos, students were provided a virtual tour of our chemistry labs.

The presentation was conducted virtually as part of the SciMatch Program, which is coordinated by the NC Science Festival Staff. This program matches middle school teachers to scientists in an effort to help students learn more about research, careers, and how science impacts our lives. The goal of the program is to talk to middle school students about our backgrounds, research, and answer questions in an effort to help the students think about a career in the sciences and to see how science impacts our lives. In addition to sharing our stories, we will conduct a few demonstrations on the subject of chromatography, showcase our labs, provide an "at home" activity for the students, and give them an abbreviated discussion about HPLC research.

Thank you, Dr. Storms, for your leadership, continued good and excellent work.

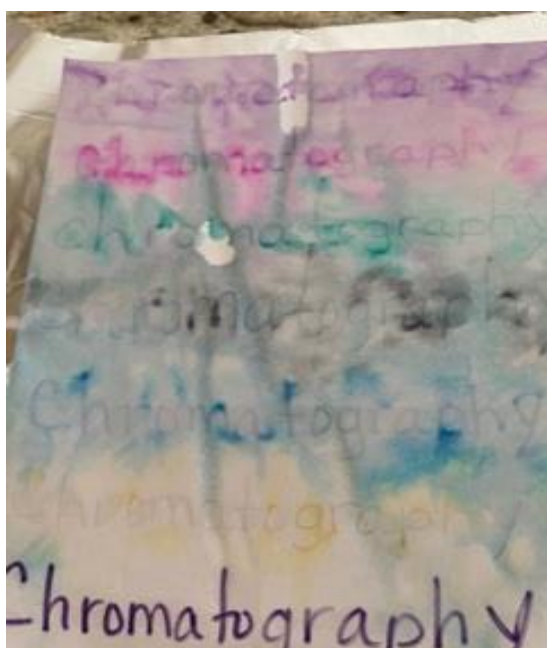


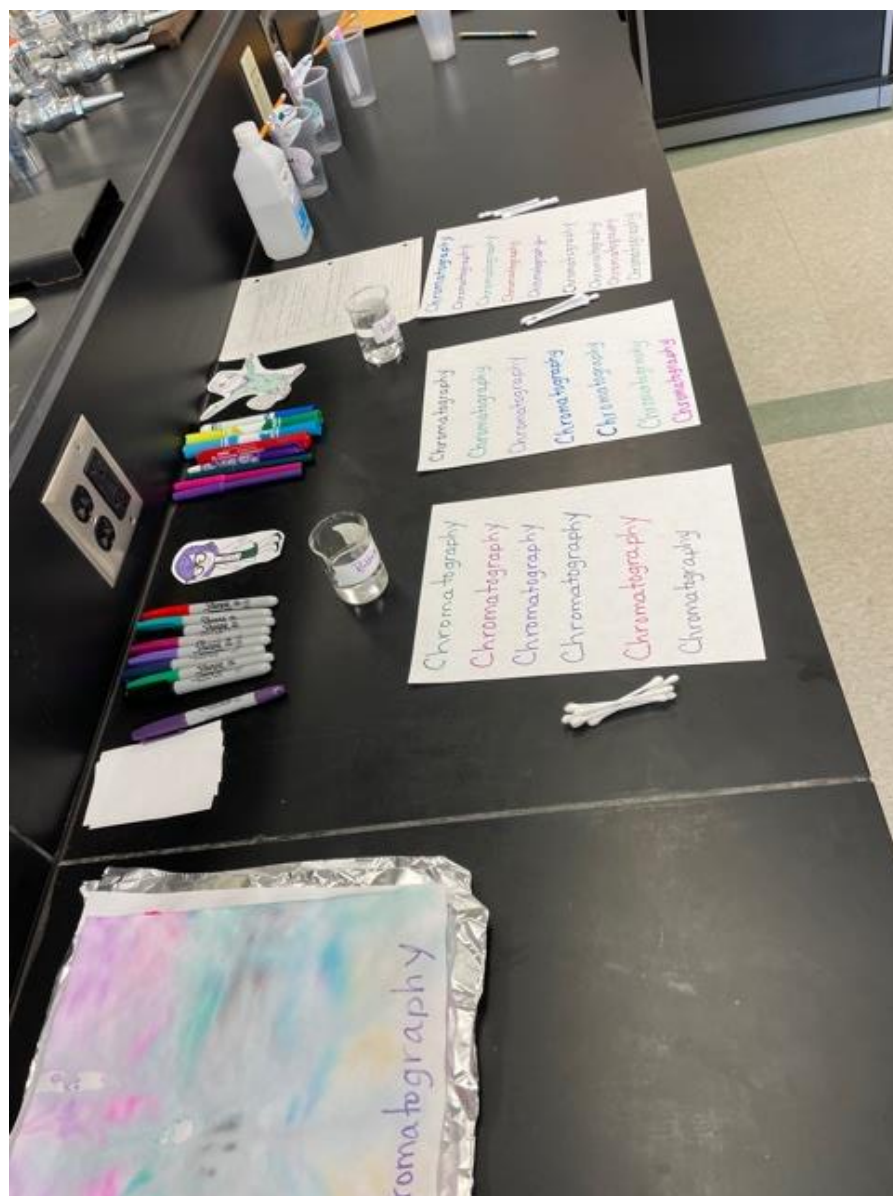




*Haleigh Grace  
and  
Glorimar Cruz-Pagan*

Haleigh and Glorimar even made chromatography shirts. Haleigh's shirt shows the color separation with Sharpies and rubbing alcohol. Glorimar designed her shirt with washable markers, so the color mostly disappeared.









***Dr. Meredith Storms' Promotion***



Meredith Storms, Ph.D.

**Congratulations**, Dr. Storms,  
on your promotion to Full  
Professor of Chemistry.  
Job well done!

## **ACS Approval Program - Review Outcome**



The ACS Committee on Professional Training (CPT) reviewed our 2020 periodic report at their recent meeting and determined that our program meets all requirements in the ACS guidelines. This report is for every six years. The Committee has recommended continuation of our ACS Approval. The department can continue to provide certificates to its graduates.

Special “thanks” and appreciation to Dr. Paul Flowers for his hard work in writing this report over the summer last year. It requires lot of effort in collecting data for six years and summarize them. Dr. Flowers, we thank you for all you do for the department and for the University.

**Congratulations!!!**

## **2021 PURC Symposium**



A special “thank you”, Dr. Rebecca Bullard-Dillard for organizing a wonderful PURC Symposium/meeting with students’ oral presentation and posters Monday, April 26, on online. It is very hard to pull students together to give a presentation and motivate them in doing research. Thanks, Rebecca, for all you do for our department and to our University Community. Job well done!

## **Summer Research Project**

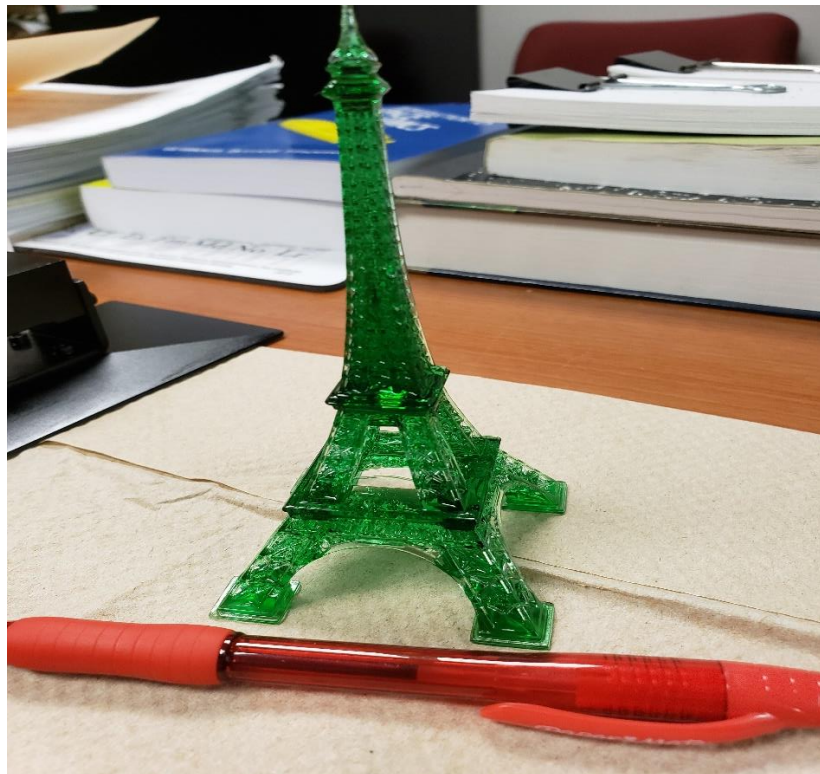


Dr. Cornelia Tirla received the notice that the Summer Research Project regarding the Plastic Recycling was approved. Congratulations on your award.

## ***New Resin Based 3D Printer is Online***



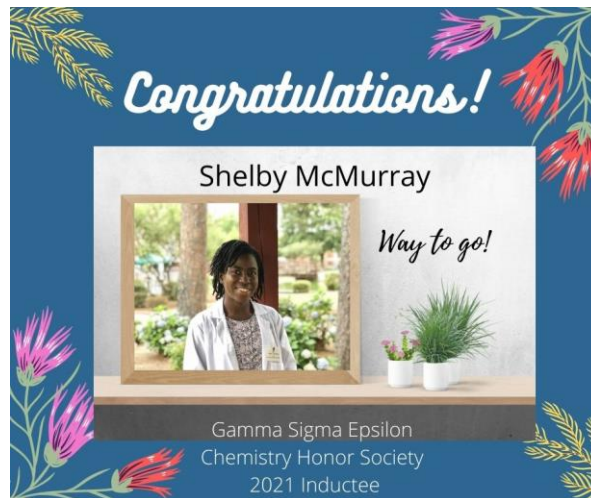
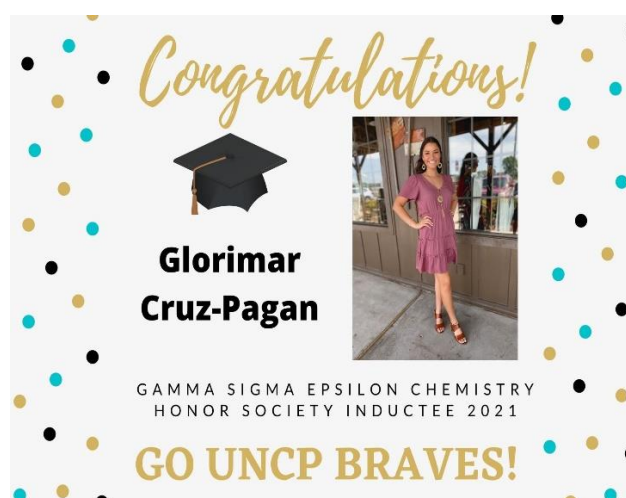
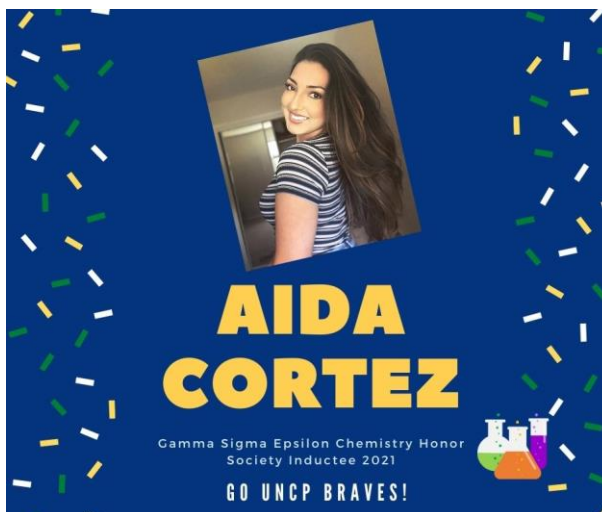
Dr. Steven Singletary has introduced the first print from the department new resin 3D printer (ordinary pen added for scale). The level of detail and print resolution is amazing. It works using a photosensitive resin that is polymerized layer by layer. The printed object rises from the vat containing the liquid resin. An LCD screen acts as a mask for the UV lamp (405 nm) below the resin vat. Many colors and different resins are available (many with additives to achieve different object properties such as heat resistance, electrical conductance, elasticity, etc.) – please feel free to reach out if you think we can print anything to help in your work! Good job, Steven. We appreciate for all you do in exciting students in their research. Thank you.

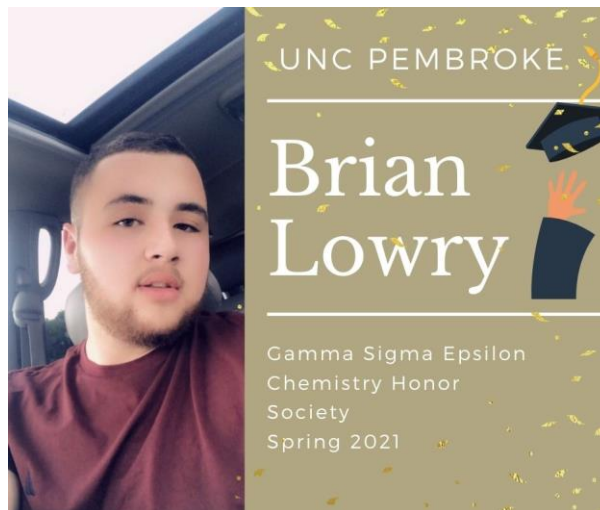


## Gamma Sigma Epsilon Chemistry Honors Society



The Gamma Sigma Epsilon Chemistry Honors Society Induction Ceremony was cancel due to the COVID-19. The inductees for this year are **Timothy Britt, Emily Britt, Haleigh Grace, Danaisha Moore, Bradley Parrish, Shelby McMurray, Brian Lowry, Glorimar Cruz-Pagan, Abigail Canela, Jennifer Valladarez Castrejon, Crystal Flinchum, Aida Cortez, and Kathryn Durden.** This is our 18<sup>th</sup> year of the GSE CHS at UNCP with 128 inductees. Congratulations to each of you. Thank you, Dr. Storms, for the preparation of this special event for the department and our students. Thank you, Dr. Meredith Storms, Mrs. Felicia Scott, and Mrs. Hope Bullock for helping with the Gamma Sigma Epsilon Honors Society Induction Ceremony.





### ***Departmental Awards Day Ceremony Cancelled***

Due to the ongoing of COVID-19, the Faculty and Staff members and Dr. Siva Mandjiny took the decision to cancel the Academic Awards Day Ceremony.

Thank you Dr. Storms and Mrs. Bullock for all the hard work you put together for this Awards Ceremony and the programs. Also, thank you to the Scholarships Committee members: Drs. Storms, Flowers, Mandjiny, Dooling, Brandon, and Rice. Each recipients will receive a certificate and a cash award.

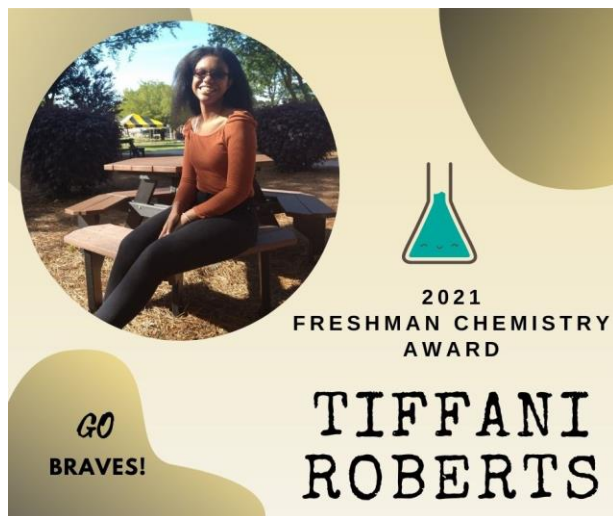
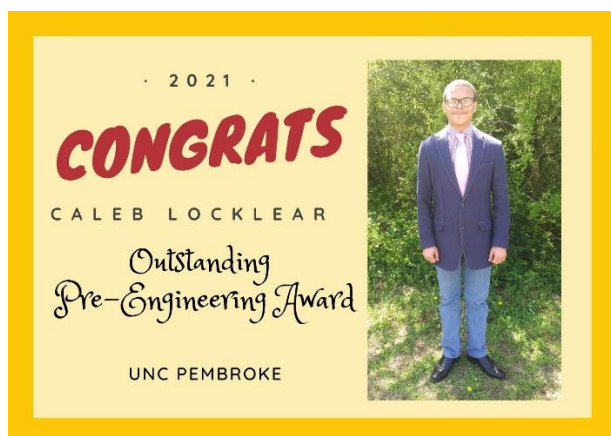
### **This year's recipients are:**

<b>Lauryn Blakely</b>	American Institute of Chemists Outstanding Senior Award
<b>Kathryn Durden</b>	Professional Promise Award
<b>Haleigh Grace</b>	Continuing in Chemistry Award
<b>Jennifer Valladarez-Castrejon</b>	ACS Sponsored Award in Analytical Chemistry
<b>Crystal Flinchum</b>	ACS Sponsored Award in Inorganic Chemistry
<b>Minh Huy Giang</b>	ACS Sponsored Award in Organic Chemistry
<b>Angel Williams</b>	ACS Physical Chemistry Undergraduate Award
<b>Tiffani Roberts</b>	CRC Freshman Chemistry Award
<b>Tiffany Bramblett Simpson</b>	Undergraduate Research Award in Chemistry
<b>Evert Garcia-Guzman</b>	Undergraduate Research Award in Physics
<b>Caleb Locklear</b>	Outstanding Pre-Engineering Student Award
<b>James Graham</b>	Einstein Achievement Award in Physics
<b>Terry Chavez</b>	"3+2" Student Award
<b>Stenson Sampson</b>	"3+2" Student Award
<b>Kathryn Durden</b>	Outstanding Department Assistant



The recipients for the scholarships will be announced in the Fall.

- Drs. Cecil and Naomi Lee Conley Endowed Scholarship
- UNCP Biotechnology Endowed Scholarship
- Anne Marie Teague Memorial Endowed Scholarship
- Jose and Dorothy D'Arruda Endowed Scholarship
- Comstock Foundation Pre-Engineering Scholarship





**Jennifer Valladarez Castrejon**  
ACS Award - Analytical Chemistry  
Gamma Sigma Epsilon Chemistry Honor Society  
Inductee  
2021



**KATHRYN DURDEN**  
Professional Promise  
Award  
and Gamma Sigma  
Epsilon Chemistry Honor  
Society Inductee



**Congratulations**