

# FELLOW PROFILE

## ACADEMIC YEAR 2017-2018

### COHORT 12



## Uvina Allen

**Year:** Senior

**Major:** Biology/Biotechnology

**Mentor:** Dr. Conner Sandefur

**Current Research Activities:**

Conducting research on the antimicrobial properties of medicinal plants.

**Career Aspirations and Goals:**

I aspire to become a research scientist in the field of environmental biotechnology. My objective is to use microorganisms to make environmentally friendly products and to help solve current environmental issues.

**Conference Attendance:**

ABRCMS 2017

**Clubs and Organizations:**

Biology Club Vice President. CASL Club.



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## Cora Bright

**Year:** Senior

**Major:** Biology

**Mentor:** Dr. Maria Santisteban

**Current Research Activities:**

I study histone variant in yeast.

**Additional Research Experience:**

Over the summer I worked in a plant lab at the University of California at Riverside.

**Career Aspirations and Goals:**

Work as a Professor of Biology and Faculty Researcher at a university.

**Conference Attendance:**

ABRCMS 2016 & 2017

**Clubs and Organizations:**

RISE (cohorts 11 & 12), Student Honors Council (Vice President),  
The Honors College

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## Ayanna Edwards

**Year:** Junior

**Major:** Biotechnology

**Mentor:** Dr. Ben Bahr

**Current Research Activities:**

I am currently working in Dr. Bahr's lab, which predominantly focuses on Alzheimer's.

**Additional Research Experience:**

I worked with Dr. Lindsey Constantini working with Kaposi's Sarcoma Herpesvirus replication process. We worked with specific viral replication proteins with the hope of being able to fully characterize them in order to look at the replication process as a whole to find inhibitors and hopefully drug targets that could be used for a virus.

**Career Aspirations and Goals:**

For my career I would like to eventually do research on cancer or disease in general. I am very fascinated with the ability of cells to manipulate and take over the human body. I would like to further investigate the abilities of cells and hopefully find inhibitors to the manipulation of cells all together.

**Conference Attendance:**

UNC SUP Symposium—July 2016  
ABRCMS—November 2016 & 2017

**Clubs and Organizations:**

National Association for the Advancement of Colored People—Secretary



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### Ereny Gerges

**Year:** Senior

**Major:** Chemistry and Biology

**Mentor:** Dr. Maria Santisteban

**Current Research Activities:** I am currently working with Dr. Maria Santisteban to test if SET2, which is a gene that encodes for a protein that methylates histone H3 on lysine 36 (H3K36) in RNA polymerase II, is a suppressor of the *htz1* RPB2-2SL synthetic lethality. The goal of the project is to understand the mechanism by which *rpb2-2*, mutated form of the gene that encodes for the RNA poly2, alone or in combination with *htz1*, mutated form of the gene that encodes for H2A.Z histone variant, promotes cryptic initiation in a yeast model.

**Additional Research Experience:** I worked with Dr. A.B Carter at the University of Alabama at Birmingham to investigate the mechanism by which cadmium from cigarette smoke down regulates the immune response of the lung's alveolar macrophages. I worked with Dr. Paul Flowers at UNCP on a project with the goal of developing a new clinical assay for biological and pharmaceutical compounds found in blood plasma or urine.

**Honors, Awards, Publications:** Friends of the Library Scholarship (Spring 2017) • Site Leader of the year Award, Office of Community and Civic Engagement (Spring 2017) • President for Alpha Chi National Honors Society, 2017-2018 • Poster Presentation Award in NCAS 2017 meeting in Molecular Biology • Junior Representative in the Honors College Council, Fall 2016 • Member, Alpha Chi National College Honors Society, Fall 2016 - Present • Chancellor Incentive Scholarship, The University of North Carolina at Pembroke, Center of Academic Excellence, 2015-2016. • Creating Opportunities for Students in Science (COMPASS) Program Scholar, The University of North Carolina at Pembroke, 2015-2018 (NSF funded Scholarship Program in Science, Technology, Engineering and Mathematics) • Research Initiative for Scientific Enhancement (RISE) Fellowship, The University of North Carolina at Pembroke, 2015-2016, 2016-2017 (NIH funded program) • Dean's Fellowship Award, UNCP Center of Academic Excellence, 2014 - 2018 • John E. Reissner Memorial Scholarship recipient, UNCP Department of Chemistry and Physics, 2015- 2016 • Chancellor's List, Fall 2014-Present • Maynor Honors College Scholar, 2015-Present • CRC Freshman Chemistry Award recipient, UNCP Department of Chemistry and Physics, Spring 2015

**Career Aspirations and Goals:** My dual passion for primary care medicine and biomedical research has helped me find my purpose in life to invest in my future toward the betterment of rural communities and diminishing health disparities. I hope one day to be a part of a scientific team that is constantly working toward applying research findings toward the betterment of humans' well-being.

**Conference Attendance:** ABRCMS, 2015- 2016, 2016- 2017, 2017- 2018. • UNCP PURC, 2015- 2016, 2016- 2017, 2017- 2018. • NCAS, 2015 -2016, 2016-2017, 2017-2018. • University of Alabama at Birmingham Summer Research Expo, Summer 2015

**Clubs and Organizations:** Site Leader, Office of Community and Civic Engagement, Fall 2015 - Present • President of Oak Hall Council, Residence Hall Association (RHA), Fall 2015 - 2016 • Vice President of Pine Hall Council, Residence Hall Association (RHA), 2014 - 2015 • Peer Tutor, Spring 2015 - Present (College Algebra, Calculus 1 & 2, General Chemistry 1 & 2) • Chancellor Ambassador, The University of North Carolina at Pembroke, Fall 2015 - Present

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## Sandra Huneycutt

**Year:** Junior

**Major:** Physics

**Mentor:** Dr. William Brandon

**Current Research Activities:**

Magneto-optics/Faraday rotation/photoelectric effect.

**Honors, Awards, Publications:**

Honors- Richmond Community College, Associate in Science, Magna Cum Laude

**Career Aspirations and Goals:**

Nuclear Physics / Mechanical Engineering

**Conference Attendance:**

N4CSGA in Rocky Mount, Durham, and Hickory, N.C. (Fall 2014 - Spring 2016); AAPT at ECU Fall 2017; ABRCMS in Phoenix, AZ Fall 2017

**Clubs and Organizations:**

RCC - Student Government Association (Fall 2014 - Spring 2016); Tau Sigma Honor Society (Spring 2017 - present); Health Careers Club (Fall 2017 - Spring 2018)

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## Amy Kish

Year: Senior

Major: Environmental Science

Mentor: Dr. John Roe

### **Current Research Activities:**

Studying the impact of prescribed fires on the Eastern Box Turtle .

### **Honors, Awards, Publications:**

Honor's List Fall 2016, Chancellor's List Spring 2017, Tau Sigma Honors Society Member

### **Career Aspirations and Goals:**

I would like to work in research concentrating on the estuary systems of NC/SC. I would like to help identify unknown microbial taxa of these systems and the importance of

### **Conference Attendance:**

American Association of Geographers Annual Meeting (April 2018)

### **Clubs and Organizations:**

Tau Sigma, Biology Club, Greener Coalition

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## Cheyenne Lee

**Year:** Junior

**Major:** Biotechnology/Biology

**Mentor:** Dr. Conner Sandefur

### **Current Research Activities:**

Testing the antimicrobial properties of the St. John the Worker plant by making teas used traditionally by the Lumbee people of North Carolina. More currently, I am trying to isolate what is common about bacteria that are inhibited by it genomically.

### **Additional Research Experience:**

Observed ribosomal dynamics in E.coli cells during the transition from exponential phase to stationary phase at Yale University in Dr. Christine Jacobs-Wagner's lab under the mentorship of William Gray. Ribosomes displayed an enriched profile around the nucleoid of the cells during the transitioning phase, and I worked to isolate potential causes of this enrichment such as metabolism, transcription, translation, and potential genetic pathways that are important for stationary phase survival.

### **Honors, Awards, Publications:**

2017 HHMI EXROP Awardee 2016 COMPASS Scholar

### **Career Aspirations and Goals:**

I want to be a university professor one day. Research is one of my passions, but I also love teaching other people than myself and seeing them succeed and grow. Mostly I want to enjoy my life, so my goal is to find happiness in helping others learn and prosper.

### **Conference Attendance:**

Attended 2016 ABRCMS, Attended 2016 SNCURCS, Attended 2017 NCAS, Will attend 2017 ABRCMS

### **Clubs and Organizations:**

UNCP Biology Club RISE COMPASS Esther G. Maynor Honors College

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## Dakota Lee

**Year:** Junior

**Major:** Biology

**Mentor:** Dr. Conner Sandefur

### **Current Research Activities:**

Right now I am working on the computational modeling of how airway surface liquid in the respiratory system is maintained and how cystic fibrosis can affect its maintenance.

### **Additional Research Experience:**

I worked with Dr. Brandon in the Physics Department over the summer on multiple experiments involving fundamental physics concepts. The core experiment was around the Verdet constant in various types of olive oil and the debunking of the improper findings of another research paper.

### **Career Aspirations and Goals:**

Someday I want to help amputees and people suffering from loss of mobility or other forms of interacting with their environment by applying non invasive, personal bionics to rehabilitate and empower victims of traumatic injuries.

### **Conference Attendance:**

I am going to be attending and presenting a research poster this year at ABRCMS.

### **Clubs and Organizations:**

I am currently a member of the Biology Club on the UNCP campus as well as the community of COMPASS.



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## Ashley Lytle

**Year:** Junior

**Major:** Biology

**Mentor:** Dr. Lisa Kelly

### **Current Research Activities:**

I am gathering data to make a database on medicinal plants used by local Native Americans. I am also looking into designing an experiment in the lab, perhaps dealing with the aloe plant and its medicinal properties.

### **Career Aspirations and Goals:**

I plan to get my Master's and then, eventually, my Ph.D. I would like to become a biology professor for a college. I also plan to do more field research, most likely dealing with

### **Conference Attendance:**

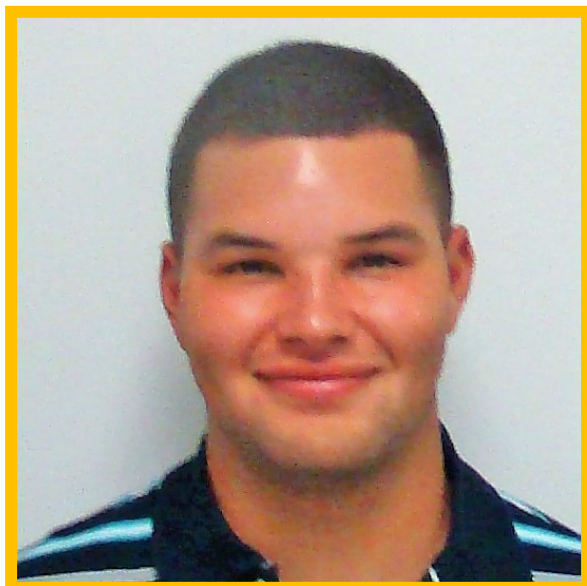
Association of Southeastern Biologists

### **Clubs and Organizations:**

RISE (cohorts 11 & 12), Student Honors Council (Vice President),  
The Honors College

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## Cody Morazan

**Year:** Sophomore

**Major:** Computer Science

**Mentor:** Dr. Conner Sandefur

**Current Research Activities:**

DNA sequencing and software development

**Career Aspirations and Goals:**

Pursue a Computer Science PhD

**Conference Attendance:**

ABRCMS 2017

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## Whitney Pittman

**Year:** Senior

**Major:** Biology

**Mentor:** Dr. Conner Sandefur

**Current Research Activities:**

Bacteria inhibition in plant extracts .

**Additional Research Experience:**

Ecological research at Miami university in Ohio .

**Career Aspirations and Goals:**

Work in research.

**Conference Attendance:**

ABRCMS 2017

**Clubs and Organizations:**

Biology Club President, Greener Coalition

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## Fredejah Royer

**Year:** Junior

**Major:** Biology

**Mentor:** Dr. Conner Sandefur

**Current Research Activities:**

Began the testing of 13 bacteria on the plant sassafras albidum.

**Career Aspirations and Goals:**

I wish to further my education after undergraduate school to get my Master's degree in the Biological Sciences or Medicine. As I am working to get my Master's degree I want to go through the training needed to become a Clinical Research Associate. That way I get a feel for what my future career will be like and get exposed to the right environment for my future job. Once I obtain this degree I would like to go into the career of a Clinical Research Scientist.

**Conference Attendance:**

ABRCMS 2017

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## Kaitlan S. Smith

**Year:** Junior

**Major:** Biotechnology

**Mentor:** Dr. Ben A. Bahr

**Current Research Activities:** In the academic year of 2017-2018 I will continue investigating the behavioral and oral dosing study done on triple transgenic mice (3xTg) that was conducted in the summer of 2016. My role specifically this academic year will be to sonicate brain slices that were sectioned off the 3xTg animals and run western blots on those samples to see if the same effects can be seen in vitro.

**Additional Research Experience:** In my research experience thus far I have been a student assistant in two different laboratories here at the University of North Carolina at Pembroke. I have worked in the William C. Friday Alzheimer's Laboratory under Dr. Ben A. Bahr for a year and a half, and in the S.I.M.B.A Laboratory under Dr. Paul A. Flowers for a year. In the William C. Friday Alzheimer's Laboratory, I was a part of a behavioral and oral dosing study involving triple transgenic mice. My role specifically involved executing and analyzing behavioral paradigm experiments to investigate episodic memory. My findings will be published in the European Scientific Journal in September, where I have contributed as second author. In the S.I.M.B.A Laboratory under the direction of Dr. Flowers, I developed an assay using spectroelectrochemistry, that can identify and quantify acetaminophen in aqueous buffer solution, and in serum. This research will be published in Electroanalysis later this fall, in which I am co-author.

### Honors, Awards, Publications:

Honors: Deans' List (2015) Awards: Athletic Scholarship (2015-2016), Merit Scholarship (2015-2016), Glaxo Scholarship (2017-2018)

**Career Aspirations and Goals:** I plan to pursue a Ph.D. in either biochemistry or pharmacology. I have found through my research and personal experience, that chemistry is one of my passions. I enjoy studying pathways in the body that are affected by disease, and finding potential therapeutics that will restore the pathway and alleviate associated symptoms. Most of my life, I suffered from an auto-immune disease called Chronic Idiopathic Urticaria, and due to the selfless work of pharmacologists and biochemists, an injection has been developed that has changed my quality of life for the better. Because of that experience, I have a goal and a dream to provide the same service to others that may be suffering from an illness that does not yet have an effective treatment.

### Conference Attendance:

RISE Summer Symposium (2016, 2017), PURC (2017, 2018), ABRCMS (2017), SERMACS (2017)

### Clubs and Organizations:

UNCP Softball (2015-2016), RISE (2017-2018)



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## Marica Thomas

**Year:** Sophomore

**Major:** Biology

**Mentor:** Dr. Ben Bahr

**Current Research Activities:**

Observing behavioral activity in mice with Alzheimer's disease treated with various drugs such as PADK.

**Career Aspirations and Goals:**

Environmental Scientist, Researcher, Physician.

**Conference Attendance:**

ABRCMS 2017

**Clubs and Organizations:**

Change Agent Academy and RISE.

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## ACADEMIC YEAR 2017-2018

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## Jeison Valencia Mazuera

**Year:** Senior

**Major:** Biology

**Mentor:** Dr. Leonard Holmes

**Current Research Activities:**

The mass production of beneficial nematodes by using solid and liquid state fermentation.

**Honors, Awards, Publications:**

NSF-S-STEM COMPASS Scholar Program (2015-2017) Lewis and Louise Austin Memorial Scholarship (2015-2017)

**Career Aspirations and Goals:**

I always wanted to become a scientist ever since I came to America. I plan to attend graduate school to continue my research career and make my dream come true. One day I will become a professor and have my own undergraduate students doing research alongside me.

**Conference Attendance:**

North Carolina American Society for Microbiology (2016) State of North Carolina Undergraduate Research and Creativity Symposium (2016) North Carolina Academy of Science 114th Annual Meeting PURC Symposium (2017) Chancellor's Challenge (2017) 8th Annual Farm Bureau BioAg Symposium (2017) R.I.S.E Symposium (2017) Will attend North Carolina American Society for Microbiology (2017) Will attend ABRCMS (2017)

**Clubs and Organizations:**

Alpha Sigma Phi (2014-2017) Lambda Sigma (2015-2016) R.I.S.E (2017-2018)