

Community Outreach

Dr. Meredith Storms did the “Back to School Bash” on Saturday, August 20, in Bennettsville, SC. She presented a chromatography activity for the children to make butterflies. At the event, school supplies were distributed to the children and lots of other activities were done.

This is a great start both for the school children as well as for our departmental outreach activity. Your service is much appreciated by everyone. We need more activities like this in the future to get more students for our department. Awesome and many thanks to you, Dr. Storms.



COMPASS

Dr. Meredith Storms is serving as the co-PI on the leadership team for COMPASS.

In the Chemistry and Physics department, Dr. Rachel Smith, Dr. Cornelia Tirla, Mrs. Felicia Scott, and Dr. Storms all serve as mentors. Drs. Smith, Tirla, and Storms have served as mentors for two or three years now. This is the first year with Mrs. Felicia Scott.

The website is <https://www.uncp.edu/departments/biology/compass-scholarship-program/mentors/mentors-profiles> if you would like to see everyone listed. Essentially, our role is to meet with the mentees (Tirla has 3 mentees, Smith has 1, Scott has 1, and Storms has 2) each week to help direct them along their educational paths. The goal is to work closely with them to help encourage them to move forward, to establish goals for themselves, and to help them move into research internships and ultimately, to succeed at getting them to graduate school or employment.



Dr. Meredith Storms



Dr. Rachel Smith



Dr. Cornelia Tirla



Mrs. Felicia Scott

American Chemical Society (ACS) and American Association of Chemistry Teachers (AACT)



The American Chemical Society (ACS) and American Association of Chemistry Teachers (AACT) jointly sponsor and support the Science Coaches program. This program is designed to pair chemists (the science coaches) with AACT teacher members in K-12 grade levels across the United States.

Over the summer, Dr. Meredith Storms was accepted into the Science Coaches program for the 2022-2023 academic year. She was matched with a teacher, Mr. Raymond Grace, at West Hoke Elementary School in Raeford. Through this program, Dr. Storms will volunteer to work with Mr. Grace on brainstorming ways to bolster the scientific knowledge of students and engage in community service through a family science night in the spring. As part of the program, Mr. Grace will receive a \$550 gift certificate from Flinn Scientific which will be used to support science education in his classroom. Already, Mr. Grace visited the UNCP campus for a quick tour of the chemistry and physics labs to consider how this collaboration will be most fruitful for his students.

2022
End of Summer Research
Symposium

Come see UNCP Students present the research they conducted this summer!

When: August 26

2:30-5pm

Where: UC Annex

Schedule:

2:30pm Welcome and Opening Remarks

2:45pm Keynote Address

Cheyenne Lee

Ph.D. Candidate, Emory University and UNCP Alum

*"The Grad School Buidle: Skills to Take to and Through
the Journey"*

3:30-5pm Poster presentations



RISE

Research Initiative for Scientific Enhancement
at The University of North Carolina at Pembroke



UNC
PEMBROKE

Student Poster Presentations

ECDL For Rubidium Spectroscopy, Billy Ray M. Pait, Caleb W. Locklear, William D. Brandon

Evaluation of Kinetic Parameters for Lactate Dehydrogenase Enzyme using Lambert (W) Function,
Jameson T. McDonald, Chinemerem B. Edoh, Siva Mandjiny

Pathway Analysis of a Pulmonary Fibrosis Candidate Gene Set, Chinemerem Blossom Edoh, Silvia Smith
Optimization of Biological Control Agent *Bacillus thuringiensis*: Growth Using 5L Fermenters Under
Various Environmental Conditions and Different Media Broths, Grant A. Gabzdyl, Isabella J. Ortega,
Kishan R. Raval, Devang N. Upadhyay

The RISE Staff would like to thank and congratulate all the students who participated in the 2022
summer research presentations. We extend thanks to faculty mentors, and to their collaborating
institutions, as well as the Office of Academic Affairs for their continued support of summer research
projects.

"Special thanks" to Dr. Rachel Smith, Dr. Robert Poage, and Ms. Sailaja Vallabha.

The full program details about the Summer Research Symposium and more information about our
special guest, Cheyenne Lee, is included the attachment below.



Research
Symposium Program



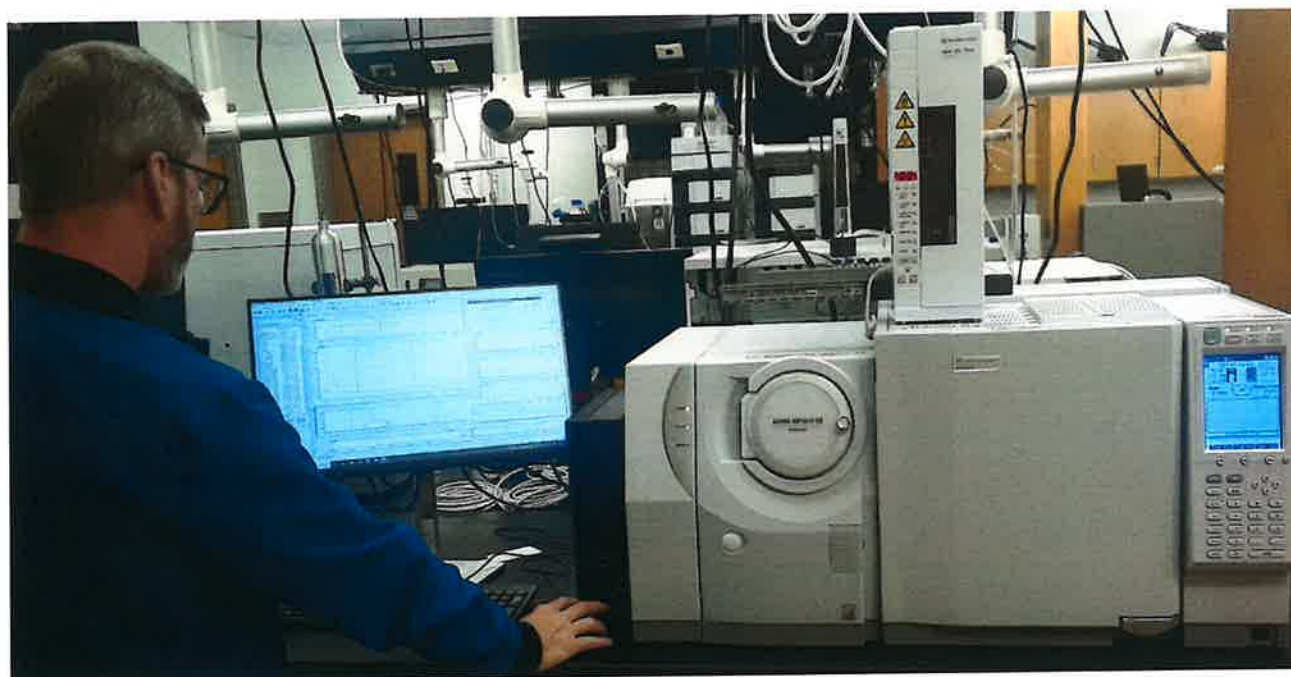
Dr. Rachel Smith



Ms. Sailaja Vallabha

GC - Mass Spec

Over the summer we replaced one of our two Agilent gas chromatography-mass spectrometry (GCMS) systems with a new instrument from Shimadzu, the QP2010-SE. This instrument has similar capabilities in identifying and quantifying the components of gaseous and volatile liquid mixtures. As always, faculty interested in exploring possibilities for use of this or any other of our departmental instruments in their curricular lab courses or research should consult Drs. Flowers or Singletary.





Student News

Kody Heubach, UNCP Graduate

Kody visited the department on August 18, 2022, with Dr. Mandjiny and several faculties. He will earn his doctor's degree in Osteopathic Medicine in May 2023. Currently he is doing rotation work at UNC Health Southeastern (SRMC) in Lumberton, NC.

Good to see you, Kody.



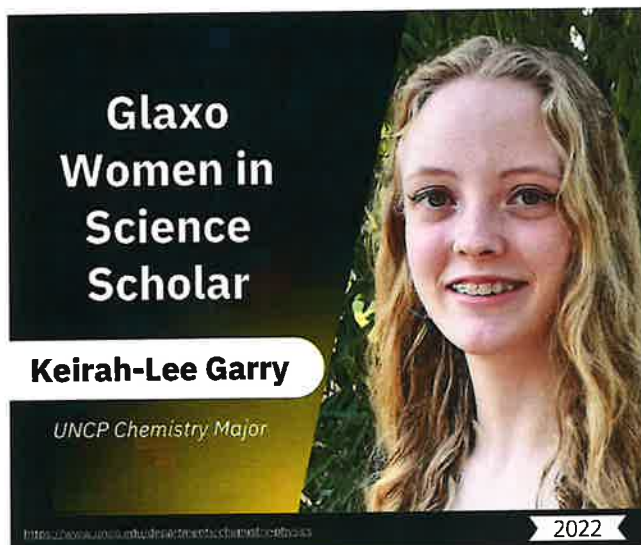
Keirah-Lee Garry Selected as Glaxo Women in Science Scholar

Congratulations, Keirah-Lee, on being selected as a **Glaxo Scholar for Chemistry for the 2022-2023 academic year!**

No fewer than 12 UNCP Biology/Chemistry students were considered for the Glaxo Women in Science Scholars Program. The scholar's program has important benefits, including a scholarship administered

by the University's financial aid, a science mentor assigned by Glaxo, and the opportunity to apply for a **summer internship** with Glaxo. This scholarship is valuable for **career and professional development**. The Annual Women in Science Scholars Meeting will be **Monday, October 24, 2022**, at the Rizzo Center in Chapel Hill.

Congratulations, once again, and we hope you will benefit from this wonderful opportunity!



Dana Lamberton Won the Best Student Poster Award in 2019



Student Poster Presentation: "Educational Resources in Magneto-Optics: Faraday Rotation in F2 Glass," Dana Lamberton and William Brandon, NCS-AAPT 2019 Spring Meeting, Wake Forest University, Winston-Salem, NC, Mar. 23, 2019.

Recall that Dana is 3+2 ME graduate and presently working for a small company which uses piezoelectric transducer technology to custom design and fabricated various sensors.

Tiffany Sampson, UNCP Chemistry Graduate (2021)

Looking to obtain Master of Science in Chemistry (Dec. 2022) and travelling to career fairs.

Alexander McGirt, UNCP Graduate (2015)

Transferred upon completion of first year at UNCP (2015). Alexander participated in research as a freshman, presenting two posters and an AAPT physics workshop with Dr. Brandon. He is currently working on his MS (Mechanical Engineering: Robotics and Automation).

Don Malloy, UNCP Graduate - Applied Physics (2011)

Don joined the Navy as a commissioned officer through Officer Candidate School and flew a P-3 Orion for 5 years. After the Navy he worked in the field of simulation and mechanical design for Dassault Systems in Boston, MA, training customers, mainly about design work and utilizing their software. He then returned to aviation as a pilot, flying the Boeing 747 internationally for a DHL cargo carrier. Recently he launched an aerospace startup with the goal of delivering newly certified training aircraft to market. Don is a busy man, and he emphasized, *"I am constantly learning and am open to new, and challenging opportunities."*

Don – then and now



Ed Derosier, UNCP Graduate - Applied Physics (2013)

Ed is working for Advance Auto as a Competitive Intelligence Analyst, making business decisions based on dynamic marketplace parameters. Ed relayed *"success in our industry of aftermarket auto parts requires not only monitoring competitor's pricing, but quality comparison, inventory levels, warranties, and other details that drive customer decisions. We use sophisticated web-scraping and reporting tools to gather, analyze, and disseminate that information to our internal stakeholders"*.

Zach Miller, UNCP Graduate - Applied Physics (2018)

After graduation, Zach worked for three years as a Switchboard Engineer for ABB (a leading power and automation technology company). He is now an Electrical Engineer for a small business (QT Corporation, Wilson, NC) manufacturing switchboards and control panels. He is responsible for the mechanical and electrical drawing packages supporting customers and shop personnel. Most customers are in the solar industry looking to safely, and efficiently, harness power from their solar panels to either local building and/or the utility grid. Zach is optimistic about his future, *"I truly enjoy being a key part of that business and opportunities arising in this booming industry."* Zach, and his domestic partner (now his fiancé), have two children, Sophia (7), and Elisa (1½).

Sandra Huneycutt, UNCP Graduate - Applied Physics (2018)

Presently a PhD candidate (Electrical Engineering) University of North Carolina at Charlotte

Anticipated Degree: Ph.D. in Electrical and Computer Engineering at UNC-Charlotte

Academic Focus: Electronic Devices and Systems / VRL Research Assistant

Sandra is currently taking a class (Optical Properties of Materials), teaching at the University level, and doing research on solar cell technology.

Sandra has taken courses primarily focused on semiconductor theory and applications – closely tied to her research, which involves using copper as an alternative to the traditional, yet prohibitively expensive, silver contacts for silicon-based solar cells. Her work is done in through a collaboration of a company in Louisville, KY and with UNC-Charlotte. She recently presented her research at two venues; the 49th Photovoltaic Specialist Conference in Philadelphia, PA, and the Hands-on Photovoltaic Experience (HOPE), which was hosted at the National Renewable Energy Laboratory in Golden, CO. Sandra's anticipated graduation is set for spring 2024. Congratulations Sandra – our first PhD student!

Killian McDonald, UNCP Graduate - Applied Physics (2018)

MS: Electrical Engineering, North Carolina State University (2019)

Killian graduated with a Bachelor of Science in Applied Physics in May 2018 from University of North Carolina at Pembroke and went on to complete his Master of Science in Electrical Engineering in December 2019 from North Carolina State University. He began full time employment as a Research Engineer I for GTRI in March 2020, operating in both leadership and support roles involving sponsored projects and several internal research and development (IRAD) efforts. Killian's current fields of interest and involvement include direct energy, radar, and antenna design, digital beamformer design, mixed signal circuit design, and electronic countermeasures. Killian appreciates his roots, *"my work adaptability and critical thinking skills can be traced back to the tools I gained, and polished, while attending UNCP in the chemistry and physics department, which was further enhanced by several research projects."* Dr. Brandon (Professor of Physics) added *"Killian's resume is extremely impressive. He has proven to be a high-energy individual who can handle a heavy workload."*

Dana Lamberton, UNCP Graduate - Applied Physics (2018)

BS: Applied Physics and Mechanical Engineering, UNCP/NCSU Dual Degree (2021)

Representing UNCP, as our first dual degree graduate of the "3+2" program, Dana began working as a manufacturing engineer for PCB Piezotronics directly upon graduating. She is beginning six sigma green belt training. PCB Piezotronics is a truly unique company - it is not a mass production facility. Dana assists in the design, production and testing of custom high precision sensors and instruments for specialized applications

in a variety of fields. Typically, instruments and devices are made in small batches of five, or so. Dana emphasized, *"I really enjoy the continual learning that goes into custom engineering work."* We expect Dana will have an enormously positive impact on that business. Dr. Brandon added, *"we were recently informed that Dana also won first place for student presentations for her poster":*

"Educational Resources in Magneto-Optics: Faraday Rotation in F2 Glass," Dana Lamberton and William Brandon, NCS-AAPT 2019 Spring Meeting, Wake Forest University, Winston-Salem, NC, Mar. 23, 2019

Cory Brown, UNCP Graduate - Applied Physics (2020)

MS Electrical Engineering, University of North Carolina at Charlotte (2022)

Cory graduated without a hitch and loves his work as Power Systems Engineer focusing on hardware in loop support for Open Energy Solutions, Inc. Cory conveyed, *"I love it – really is next level stuff."*

Terry Chavez, UNCP Graduate (2022)

Having completed the applied physics requirements at UNCP (Spring 2022), Terry enrolled at North Carolina State University working on the dual degree (Applied Physics and Electrical Engineering). She is presently taking a full load of classes, while also considering getting involved in an additional research and development project. Terry wrote, *"Transitioning to NC State has been a wonderful experience. Of course, it has its up and downs such as getting used to the large class sizes. Luckily with the summer course load that I took, I was able to get to know my professor and some of my classmates that I will be seeing from now on. It is also so interesting to cover some of the material I was exposed to at UNCP in different ways. For example, I am diving deeper into circuit analysis and learning more details about the components that we use. I am excited to see what this semester and the remainder of this program have in store for me."*

Wells Graham, UNCP Graduate - Applied Physics (2021)

Presently a Ph.D. candidate (Physics) Wake Forest University

Anticipated Degree: Ph.D. in Physics at WFU

Research Focus: Theoretical/Computational Solid-State Physics

While currently participating in a condensed matter seminar class, Wells is a full-time research assistant in an area involving Metal Organic Frameworks (MOFs).

He has completed all required courses in the first year of his Ph.D. program and has 3 elective courses remaining. He is presently concerned with characterizing MOFs; primarily how they interact with molecules of interest utilizing Density Functional Theory (DFT). His research group is funded by the Department of Energy and carried out in collaboration with a MOF synthesis group at Rutgers and an experimental group at the University of Texas at Dallas. He is interested in pursuing theory development in the future. Wells will be presenting his research at the upcoming APS March meeting in Las Vegas. *We congratulate Wells in exhibiting such impressive progress in his first year, especially in this rigorous field of condensed matter physics – a compelling display of ability and tenacity!*