



Volume 11,
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*What's going on in
the North Carolina
Academy of Science:*

- Reflections from NCAS Annual Meeting
- 2023-2024 CAN-CAS Officers
- Derieux Winners!

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Reflections on the 2023 NCAS Annual Meeting

By Micah Daugherty, Dean Foggan, Gretchen Gillenwater, Hunter Ivey, Hannah Leviner, Ariana Locklear, Kyra Locklear, Luca Matthews, Kegan McDonald, Sean Musselwhite, Kayla Patrick, Tiffani Roberts, Alexis Strickland and Dr. Marisol Santisteban, UNC Pembroke.

Each year, we love hearing from the Annual Meeting participants! This year, we have reflections from the **UNCP COMPASS group**. Some content that would not fit into the space available for this article will run in the [website news](#) over this coming week or so.

For some of us the NCAS Annual Meeting was not the first conference we attended, but for most of us, it was our first, or at least our first in-person. The experience was incomparable to the online conferences. Since some of us are chemistry or geoscience majors, we also appreciated that there were various disciplines beyond biology. “Being surrounded by peers who share the same feeling of wanting to continue... making their path in [STEM] was something truly amazing to witness”.

We had the opportunity to present on topics we are very passionate about and plenty of interaction with people coming to talk to us and from our judges. One of our peers even won an award! Those of us who did not present were very proud of and happy for our peers who presented. They definitely made UNCP proud! It can be said that we agreed that our favorite part about this conference was just being able to see the research of students from many different colleges and backgrounds.

In preparation for this conference, we were asked to plan which posters and oral presentations we would like to see, and that was our least favorite task because it was hard to choose. Also, we differed in our preference for posters versus oral presentations. The posters were a great way to interact with others and “were very intriguing and getting to hear about how their research was useful in economic, medical, and scientific ways”. Some of us were fonder of the oral presentations, we felt that the student presenters were more prepared and had more information about their topics. “I think all the presenters that I saw explained their topics really well.” [See more of their impressions in our [News](#).] Getting to explore and discuss scientific topics with other people was inspiring and uplifting! The keynote speaker, Jamie Vernon, was very insightful, informative, and motivational. The persistence that characterized his career is what resounded with some of us the most.



Reflections on the 2023 NCAS Annual Meeting

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Despite the lengthy presentation, Dr. Vernon kept us engaged and attentive. Speaking with him after his presentation, we learned about the possibility to join Sigma Xi, and even to start a chapter at UNCP!

Of the 14 attending, 9 were females so the workshop about “Bias Against Women in STEM” led by Dr. Rachel Roper from the Brody School of Medicine at ECU intrigued us. “I knew women were unequal in many things especially stem degrees but the amount of evidence the Dr. presented was truly breathtaking”. This was a great talk, and we liked the insightful discussion that ensued instead of having a typical Q&A session. We also enjoyed the workshop on resume writing which we found very useful from a student perspective. “Writing a resume may seem easy, but there are so many things to consider when creating one.”

At the CASCAS business meeting, we had the opportunity to learn about how to get involved. “This was the first time we had ever been to a meeting like this, and we learned of opportunities to participate in CASCAS government positions.”

Overall, the conference turned out informative and fun. We appreciated the welcoming and supportive environment created by the conference organizers, making it an enjoyable and rewarding experience for everyone. The campus was beautiful, and the food was glorious. “I can’t forget to mention that the dates and feta cheese appetizers were really good!” We highly recommend the NCAS conference to STEM majors. “I had a very great time and look forward to attending again, and maybe presenting my own research. Thank you for the opportunity, it was a great one!!!!”

The Yarbrough Research Grants program supports undergraduate research. Top awards may receive as much as \$500 or more. Awardees earn more than just funding for their research. Receiving a grant is an honor that tangibly demonstrates your critical thinking and communication skills and looks great on anyone's resume!

Talk to your research advisor and apply today. For more information, visit the [Grants & Awards webpage](#).

Institutions with CASCAS Group Membership

- Campbell University
- Elon University
- Lenoir–Rhyne University
- Pfeiffer University
- UNC- Pembroke

A Sincere “Thank You” to Derieux Judges

From Dr. Laura Reichenberg, Pfeiffer University & Ryan Brandt, Elon University, CASCAS Co-Directors

A sincere “thank you” to our Judges

On behalf of the Collegiate Academy of the North Carolina Academy of Sciences, we would like to thank our judges for offering their time and expertise for our Derieux Award for Excellence in Undergraduate Research Competition and for providing valuable feedback to our student presenters. Your willingness to volunteer was critical to the success of this event. We appreciate your generous support and hope that you will consider supporting us again in the future.

List of Judges for the Derieux Award for Excellence in Undergraduate Research Competition

- Luc Dunoyer
- Evan Reynolds
- Marisol Santisteban
- Mark McCallum
- Evan Reynolds
- Maria Santisteban
- Lei Zhang
- Emanuel Waddell
- Darryl Bing
- Taek You
- Laura Reichenberg
- David Cartrette
- Jennifer Perkins
- Emanuel Waddell
- Daniel Elias
- Marsha Fanning
- Judy Moore
- Michelle Thomas
- David Parker
- Daniel Grimm
- Stephanie Mathews
- David Parker
- Timothy Goldberg
- Scott Schaefer
- Maria Pickering
- Marisa Myers
- Ryan Brandt

Congratulations to our 2023-2024 CASCAS officers!



CASCAS Board 2023-2024

From left to right:

- President: Reagan Womeck; Lenoir-Rhyne University
- Vice President: Diego Sanjuan; Lenoir-Rhyne University
- Secretary: Erica Schulz; Lenoir-Rhyne University
- Historian: Kevin Reza-Villa; Wake Technical Community College

Support the Academy: Consider Institutional Sponsorship

Report By NCAS Finance Committee

As an individual, you have many ways to support the Academy: become a member, attend the Annual Meeting, or talk to your administrator about Institutional Sponsorship. What is Institutional Sponsorship and what is it not?

Institutional Sponsorship is a way for institutions to support the sciences and to gain recognition for doing so.

Institutional Sponsorship is not a form of membership so does not provide discounts for events or other memberships

We hope your institution will consider becoming a sponsor!

If you are interested and need more information, contact the NCAS Treasurer, Dr. Evan Reynolds, ereynolds@campbell.edu

Welcome to our new board members!

Election results are in for the 2022-2023 board. **Dr. Danielle Graham**, of Fayetteville State University, will fill the position of **Elected Member**.

Dr. Emanuel Waddell, of North Carolina Agricultural and Technical State University, will fill the position of **Yarbrough Research Grant Committee Co-Chair**.

Transitioning from other positions on the board, **Dr. Mark McCallum**, of Pfeiffer University, will become our **President-Elect**, and Dr. Jia Zhenquan of UNC-Greensboro, will become our Bryden Research Grant Committee Chair.

Thanks to our other board members who are continuing to serve in their current position. See our website for a full list of board members and additional information.

You can see the full list on the **Board of Directors** page under **About** in the menu of our [website](#).



Dr. Danielle Graham
Fayetteville State University



Dr. Emanuel Waddell
NC A&T State University

Derieux Award Winners

Oral Presentation Derieux Awards

Oral Presentation Derieux Awards: Ecology, Botany, & Zoology			
1 st Place	Ainsley Shan	Elon University	Examining the potential tradeoffs of vibrational signals: who's listening?
2 nd Place	Caleb Fluno	Lenoir-Rhyne University	The effects of cobalt chloride and zinc chloride on the c-start reaction of zebrafish (<i>Danio rerio</i>)
3 rd Place	Matthew Brueshaber	Mountain Lake Biological Station	The effects of competition on populations of <i>Plethodon montanus</i>
Oral Presentation Derieux Awards: Chemistry			
1 st Place	Deborah North	Durham Technical Community College	Wastewater treatment using microbial fuel cell technology
2 nd Place	Tanner White	Lenoir-Rhyne University	Methotrexate's dual effects on <i>Lumbriculus variegatus</i> metabolism: adenosine-mediated pulse rate alterations and regulation of regeneration via caveolin-1
Oral Presentation Derieux Awards: Molecular Cell Biology			
1 st Place	Heather McDowell	Lenoir-Rhyne University	In vitro inhibition of zebrafish (<i>Danio rerio</i>) oocyte maturation by exposure of endocrine-disrupting chemicals: atrazine, malathion, perfluoroheptanoic acid
2 nd Place	Stephanie Stewart	East Carolina University	Fertilization and information theory: a stochastic model of sperm cell population dynamics
3 rd Place	Ashley Sierzenga	Lenoir-Rhyne University	Prevalence of the cyanogenic glycoside, amygdalin, in white clover (<i>Trifolium repens</i>) based on various plant parts
Oral Presentation Derieux Awards: Microbiology			
1 st Place	Anna Braaten	Lenoir-Rhyne University	Prevalence of the cyanogenic glycoside, amygdalin, in white clover (<i>Trifolium repens</i>) based on various plant parts
2 nd Place	Luis Guevara	East Carolina University	Trehalose effects on soybean lipoxygenase-1 catalysis and activation energy
3 rd Place	Michael Cavallero	East Carolina University	Investigating the role of coding gene 8093 in the Germline Stem Cells

Derieux Award Winners

Poster Presentation Derieux Awards

Poster Presentation Derieux Awards: Ecology, Botany, & Zoology			
1 st Place	Gretchen Gillenwater	University of North Carolina at Pembroke	Hurricane-induced tornados: hurricane Frances and Jeanne
2 nd Place	Mayra Rudy	Campbell University	Examining interactions between polyethylene terephthalate plastic and organic aquatic hazards
3 rd Place	Alexander Gehron	Catawba College	Mycoremediation of mercury: bioremediation potential of fungi
3 rd Place	Rhea Wilder	North Carolina Wesleyan University	Effects of Salinity and Acetaminophen on <i>Physa acuta</i> shell length and movement
Poster Presentation Derieux Awards: Chemistry			
1 st Place	Abigail Riccardi	Campbell University	Development of a simplified purification method to reliably remove silanol and ruthenium impurities from benzyl silyl esters
2 nd Place	Kyle Kellar	Campbell University	Development of a pedagogical multistep synthesis involving alcohol bromination and Williamson ether synthesis
3 rd Place	Neha Joseph	East Carolina University	Spring evaluation and calibration of low-cost aerosol sensors
Poster Presentation Derieux Awards: Molecular Cell Biology			
1 st Place	Justin Cornelison	University of North Carolina at Pembroke	Localizing presynaptic ion channels and synaptic structures using high-resolution confocal microscopy
2 nd Place	Grant Koher	University of North Carolina at Pembroke	Mapping of the lumber river and its process
Poster Presentation Derieux Awards: Microbiology			
1 st Place	Matilde Strocchi	Shaw University	The Journey to Iron (III) Resistance in <i>Escherichia coli</i>
2 nd Place	Markis' Hamilton	Fayetteville State University	Evaluating antibiotic resistance levels in soil bacterial isolates
3 rd Place	Kaley Mueller	Guilford College	Pharmacological and Genetic Manipulation of Longevity Pathways in the Model Organism <i>Caenorhabditis elegans</i>
3 rd Place	Sarina Maybank	Fayetteville State University	Analyzing the effects of nanoparticles to combat biofilm-forming and antibiotic-resistant bacteria

Thank you to our Annual Meeting Sponsor!

Sigma Xi Platinum Sponsor for the 2023 NCAS



Photos from the Annual Meeting

Thanks to our Photographers! Ryan Brandt, Lisa Kelly, & Teak You





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The **objective** of the North Carolina Academy of Science is to “encourage the advancement of science within the state of North Carolina by promotion of scientific research and by the fostering of education in the sciences”. The North Carolina Academy of Science meets these objectives by...

- Publishing a peer reviewed scholarly journal, the *Journal of the North Carolina Academy of Science*.
- Fostering and encouraging student involvement in the sciences through support of the Collegiate (CANCAS) and Student Academies (NCSAS).
- Promoting interactions among scientists and students throughout North Carolina.
- Providing a forum for exchange of ideas for solving issues important to North Carolina.

The Academy members include individuals from academia, industry, government, and all others who support the objectives and goals of the Academy.

North Carolina Academy of Science

Our Mission

The North Carolina Academy of Science promotes public appreciation of science, science education, scientific research and a meaningful role for science in public policy.

Our Goals:

Promote public appreciation of science

- Partnership with Science Centers
- Public Lecture Series
- Newsletter

Promote science education

- NCAS Webpage
- Academic Lecture Series
- NCAS Publications: Journal, Educational Publications
- Student Academy - Middle & High School

Promote scientific research

- Yarbrough and Bryden Research Grants
- CASCAS Undergraduate Research Workshop
- Presentation Opportunities at Annual Meetings
- Journal of the North Carolina Academy of Science

Promote science in public policy

- Symposia
- News Releases
- Position Statements
- Interactions with Public Officials

