



Volume 12,  
Issue 3

April 2024

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

- Reflections from NCAS Annual Meeting
- CASCAS Officers & Board
- Derieux Awards

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## Participating in the 2024 NCAS Annual Meeting: Our Reflections

*Abbreviations of contributing institutions:*

*LRU - Lenoir-Rhyne University; PfU - Pfeiffer University; UNCG - University of NC Greensboro*

*Thanks to the students, whose names appear below with their contribution, for sharing their experiences during the recent Annual Meeting. Also, thanks to the faculty mentors, Drs. Judy Moore (LR) and Laura Reichenberg (PfU), who helped to collect these reflections.*

“This was my first experience at a scientific conference, both as a guest and a presenter. It was intimidating at first to walk in and see all the other presenters for the poster session, but as the event progressed, I became both confident and comfortable with sharing and discussing my research and others. It was an absolute pleasure to meet all the other students and professors, especially those who shared the same scientific interests as me.

On the second day I got to enjoy watching other students give their oral presentations and was thoroughly impressed with all the knowledge and passion that was put into their projects. I also had the pleasure of learning about an interesting technique used to measure the bite-force of insects with Mr. Guzman. It was exciting for me especially since I want to eventually work in the field of Entomology.

Overall, this conference gave me excellent experience for future scientific research endeavors and many future connections in the field. I was also extremely grateful to be awarded a 1st place Derieux Research Award for my research poster presentation in the Microbiology section.”

***Cheyenne Kimberlin, LRU, Derieux award winner***

“The conference was my first experience to present research in a formal setting. I was incredibly nervous; however, the opportunity proved to be an invaluable confidence-builder. In addition to the skill building, I had an amazing time with my friends, professors, and engaging with others in the scientific community!”

***Kayla Dietz, Senior Biochemistry major, LRU***



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# Participating in the 2024 NCAS Annual Meeting: Our Reflections

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At the 120th NCAS Annual Meeting, I had one of the most exciting and transformative experiences in my journey as an undergraduate biology researcher. For the first time, I presented my research to a greater scientific community; daunting as it seemed, I am happy I was able to participate in something so neat. Following my attendance, I feel that I have gained improved scientific skills, and an increased appreciation of being able to communicate professionally and effectively in the world of research. Through feedback received from my fellow presenters as well as accomplished professionals, being able to engage in fascinating discussions, and creating networking opportunities, I could feel my confidence growing as I continued to display the fruits of my mentorship. Finally, I would like to extend my thanks to the NCAS award committee for presenting me with the John Bowley Derieux Research Award, and I am honored to be able to represent my school, the University of North Carolina at Greensboro, the Department of Biology, and the Wasserberg Laboratory.

From the moment I arrived to present my poster, I met presenters from a wide range of educational backgrounds, from high school, to collegiate, and even doctoral. In addition to the presentations, I found the workshops, panel lectures, and the Keynote lecture so engaging and fascinating! There were so many opportunities to engage and ask questions, some in places I didn't expect; even during lunch (which was phenomenal by the way), I found myself immersed in conversation. Being able to interact with and explore various disciplines with my fellow presenters not only reignites my own passion for research, but also helped me appreciate the conscientious effort of all those who participated.

Altogether, I really enjoyed my time at the NCAS Annual Conference. I am eternally grateful to the conference organizers, Winston Salem State University, and all the attendees who came together to make this event as amazing as possible. Hope to see everyone again next year!"

*Chelsea Akabueze, UNCG, Derieux award winner*

"Being my first time going to NCAS, I had a great experience and learned so much about how not only to present research but what it should look like. I enjoyed all the comradery and togetherness that NCAS brings to the scientific community, I was able to make connections with fellow students and educators that I otherwise would not have been able to make. Going to NCAS has proven such an integral experience in my research journey, it provided me with new ideas and points of view to the things I was doing.

In my research journey, I am very new to the field of microbiology, but NCAS really helped me understand what a poster session looked like, and I was even able to format my poster in a way that was much clearer because of the brilliant posters I was able to see. Looking at the other microbiology posters I learned so much about how microbiology has been explored in a multitude of ways.

At NCAS, I was truly able to grow and learn from a room full of scientific minds I felt at home being in. NCAS was a wonderful experience, and I am so thankful for the opportunity I had to go and find people that I have now forged life-long connections with."

*Madeline Chadbourne, PFU*

(Continued from page 2)

“The NCAS Annual Meeting was my first scientific conference, and it was a very eye-opening and meaningful experience for me. It was great to see and to hear about all the different kinds of research fellow students are doing at colleges and universities across North Carolina.”

*Ellie Wilhelm, Junior, LRU*

“My experience at NCAS was quite surprising! This was my first time attending a science convention. I really enjoyed the atmosphere of the convention the first night at the poster session. The second day was just as fun, though I had started off nervous for my presentation. I thoroughly enjoyed being able to attend and support my classmates during their presentations and have them present for mine. It was a great opportunity to gain experience presenting scientific research for the first time and I hope to be able to attend in the future!”

*Amy Sain, Senior Biochemistry major, LRU*

“This was my first time attending the NCAS Annual meeting. I really enjoyed the first day seeing all the different posters and seeing my fellow peers do some posters as well. I thought Cheyenne and Regan did such a great job of representing Lenoir Rhyne University!

On the second day we got to watch and learn from many different presentations. It was nice to just be a viewer so I can be prepared for when I do an oral presentation next year in 2025. I also loved seeing other student's presentations from different colleges and universities. From this Annual meeting it opened my eyes to being a great scientist.

What a great experience and I am looking forward to next years!”

*Ivy Throneburg, Junior Biology major, LRU*

## **Congratulations to the winners of the 2024 Robert R. Bryden Research Award!**

**Alyssa Scott, UNC-Wilmington** (Advisor: Dr. Michael Tift) for her project entitled “Investigating the ecology of crabeater seals (*Lobodon carcinophaga*) in a changing climate”

**Delicia Esther Cardenas Vasquez, UNC-Greensboro** (Advisor: Dr. Zhenquan Jia) for her project entitled “Study the effect of eight weeks of exposure to carbon nanodots on lipid peroxidation in liver tissue of C57BL/6J mice”



# Report on the NCAS Annual Meeting at Winston Salem State University

*By John Merle, Winston-Salem State University, Local Arrangements Committee Chair*



The 120<sup>th</sup> NCAS Annual Meeting was here one moment and gone in a flash. The days and weeks prior to the meeting spent preparing and wondering if any details were missed and if all would be unveiled without disaster proved a success. The success was due to the hard work of the local arrangement committee members and for WSSU colleagues including Lei Zhang, Mesia Steed, David Kump and students for helping ensure a smooth registration process and that meeting attendees were accommodated.

To kick off the meeting Dr. Taek You (NCAS President) and Dr. Kathy Stitts (WSSU Interim Provost) provided warm welcoming remarks. During Dr. Stitts's remarks, Maria Santisteban proposed that I request all attendees to fill the New Science Building lobby staircase for a photo. I was skeptical but made the proposition to the attendees and they obliged. It turned out to be a great idea and the photo was awesome. The remainder of the evening was filled with vigorous discussion with undergraduates, graduate students and faculty discussing poster presentations of the high-quality research being performed in North Carolina universities, colleges, and community colleges over hors d'oeuvres. I was amazed by the enthusiasm and talent of the poster presentation participants.



Day two kicked off bright and early with continental breakfast and student oral presentation sessions. The morning finished with a panel discussion on COVID-19 facilitated by WSSU's Drs. Tennille Presley and Cynthia Brown and a research lecture by Dr. Haozhe Wang of Duke University. While the morning sessions ran, I met the meeting's Keynote Speaker Dr. (Sir) Steven Cowley and had lunch with him and Taek. We had a nice conversation, and I was left pleasantly surprised that Dr. Cowley was such a down-to-earth person. Dr. Cowley's keynote address following lunch provided the audience with a clear background and status on the use of fusion energy.

The afternoon sessions included four workshops for attendees providing insight into methods for improving teaching and learning. We wrapped up the meeting with CANCAS and NCAS business meeting and the distribution of well deserved awards for student poster and oral presentations.



*(Continued from page 4)*

The 120<sup>th</sup> NCAS Annual Meeting concluded seemingly as soon as it started. This was only the second NCAS annual meeting I have attended and for me these meetings have been a great pleasure. The NCAS meetings provide students and faculty in the state of North Carolina with a welcoming and engaging experience. I thank the NCAS Board of Directors and members for this opportunity and the support of our meeting sponsors. See you next year at Fayetteville State University.

## Welcome to our new board members!

***Dan Brown*** from Duke University Toxicology Program joins us as an Elected Member



***Jackson Owens*** from Lenoir-Rhyne University joins us as CASCAS President.

We are also glad to have returning others on the board who have moved into new positions. See the full list of board members on our website at:

<https://ncacadsci.org/bod>

## Next Year's Annual Meeting

After such a great meeting this year, I'm already looking forward to next year. In 2025, the NCAS Annual Meeting will be at Fayetteville State University and the Local Arrangements Committee Chair will be [Dr. Daniel Autry](#). Stay tuned for a Save the Date announcement in the newsletter in the fall or keep up with the latest news on our [website](#).



## Derieux Award Winners : Oral Presentations

Oral Presentation Derieux Awards: Ecology, Botany, & Zoology			
1 <sup>st</sup> Place	<b>Alayna Thompson</b>	Elon University	Can An Old Bird Learn New Songs? Three Promising Methods That Didn't Work.
2 <sup>nd</sup> Place	<b>Caroline Klein</b>	Meredith College	Exploration of the Rate of Skeletonization of House Mice ( <i>Mus musculus</i> ) Using Dermestid ( <i>Dermestes maculatus</i> ) and darkling ( <i>Tenebrio obscurus</i> ) Beetles
2 <sup>nd</sup> Place	<b>Bethany Perry</b>	Lenoir-Rhyne University	Effects of temperature increase on circadian rhythm and stomatal development in soybeans ( <i>Glycine max</i> )
3 <sup>rd</sup> Place	<b>Diego Sanjuan</b>	Lenoir-Rhyne University	Isolation and cultivation of gut bacteria from larvae of the greater wax moth ( <i>Galleria mellonella</i> ): A potential resource for bioremediation of polyethylene

Oral Presentation Derieux Awards: Chemistry			
1 <sup>st</sup> Place	<b>Demmi Ramos</b>	Lenoir-Rhyne University, Wake Forest University	Investigating tipping points in the budyko climate model
2 <sup>nd</sup> Place	<b>Abigail G Riccardi</b>	Campbell University, Furman University	Oxidative deprotection of silyl ethers has been of interest in recent literature, and a Ru-catalyzed biphasic oxidation system has been shown to oxidize benzyl silyl ethers to a mixture of silyl
3 <sup>rd</sup> Place	<b>Erica Shulz</b>	Lenoir-Rhyne University	The viability and characterization of sucrose and alkali metal nitrates as solid rocket propellant

Oral Presentation Derieux Awards: Molecular Cell Biology			
1 <sup>st</sup> Place	<b>Elias Campbell</b>	Wingate University	The Nuclear Localization Sequence of Satb2 is proximal to its N-terminus.
2 <sup>nd</sup> Place	<b>Erica Dunlap</b>	Wingate University	Heterodimerization of Satb1 and Satb2 is confirmed with a split YPF system.
3 <sup>rd</sup> Place	<b>Kayla N. Dietz</b>	Lenoir-Rhyne University	The analysis of polychlorinated biphenyls in soil samples

Oral Presentation Derieux Awards: Microbiology			
1 <sup>st</sup> Place	<b>Christina Fisher</b>	Lenoir-Rhyne University	Antimicrobial potential of fungal endophytes isolated from eight different invasive plant species of North Carolina
2 <sup>nd</sup> Place	<b>Lynn Van Staalduinen</b>	Lenoir-Rhyne University	Role of EPS-degrading substances in phage-based strategies of biofilm disruption in enteric pathogens
3 <sup>rd</sup> Place	<b>Donna Tran</b>	Guilford College	Momordica charantia: Testing for Antibiotic Properties

# Derieux Award Winners : Poster Presentations

## Poster Presentation Derieux Awards: Engineering

1 <sup>st</sup> Place	<b>Melinda Combs</b>	Winston Salem University	Image Classification using NASA Mars Curiosity Rover Image Dataset
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## Poster Presentation Derieux Awards: Ecology, Botany, & Zoology

1 <sup>st</sup> Place	<b>Chelsea Akabueze</b>	University of North Carolina at Greensboro	BTI: Undetectable by gravid female mosquitos but highly effective against early-stage larvae
2 <sup>nd</sup> Place	<b>Emily Jones</b>	Wake Forest University	Exposure to glyphosate-based herbicide impacts Drosophila survivorship, behavior, and internal microbiome
3 <sup>rd</sup> Place	<b>Glory Kidimbu</b>	East Carolina Univeristy	Nutrient enrichment effects on wetland soil bacterial traits

## Poster Presentation Derieux Awards: Chemistry

1 <sup>st</sup> Place	<b>Reagan Womack</b>	Lenoir-Rhyne University	Computational analysis of human prion protein's allosteric potential reveals potential pharmacological chaperone binding site for V189I and V203I PrPSc
2 <sup>nd</sup> Place	<b>Abigail J Lederer</b>	Campbell University	Exploring student pitfalls in the procedure for a pedagogical laboratory involving electrophilic bromination of trans-stilbene
3 <sup>rd</sup> Place	<b>Kyle Kellar</b>	Campbell University	Development of a pedagogical multistep synthesis involving alcohol bromination and Williamson ether synthesis

## Poster Presentation Derieux Awards: Molecular Cell Biology

1 <sup>st</sup> Place	<b>Rachel Van Winkle</b>	Campbell University	Enzymatic cross-coupling of carbonyl compounds and alkyl halides: crossing into new territory with thiamine-dependent enzymes
2 <sup>nd</sup> Place	<b>Nicholas Woodlief</b>	Campbell University	Asymmetric radical catalysis with thiamine-dependent enzymes
3 <sup>rd</sup> Place	<b>Ally Fredrick</b>	Catawba College, Salisbury, NC	Effects of UV Radiation on MCF-7 Breast Cancer Cells

## Poster Presentation Derieux Awards: Microbiology

1 <sup>st</sup> Place	<b>Cheyenne Kimberlin</b>	Lenoir-Rhyne University	Mechanical spread of microorganisms via the common feeder cockroach <i>Blaptica dubia</i> : A model for bacterial and viral transmission
2 <sup>nd</sup> Place	<b>Markis Hamilton</b>	Fayetteville State University	Impact of Nutrient Enrichment on Soil Bacterial Biofilm Formation
3 <sup>rd</sup> Place	<b>Mia Hoffman</b>	Guilford College	Antibiotic properties of Cedarwood Oil

# A Sincere “Thank You” to Derieux Judges

*From Drs. Ryan Brandt & Laura Reichenberg, 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.

## CASCAS Board 2023-2024



From left to right:

**President** - Jackson Owens: Lenoir-Rhyne University

**Vice President** - Ivy Throneburg: Lenoir-Rhyne University

**Secretary** - Crystal Lopez: Campbell University

**Historian** - Elijah Yang: Lenoir-Rhyne University



Institutions with  
CANCAS Group  
Membership

- Campbell University
- Catawba College
- Elon University
- Lenoir-Rhyne University
- Pfeiffer University
- UNC - Pembroke
- Wake Forest University
- Winston-Salem State University

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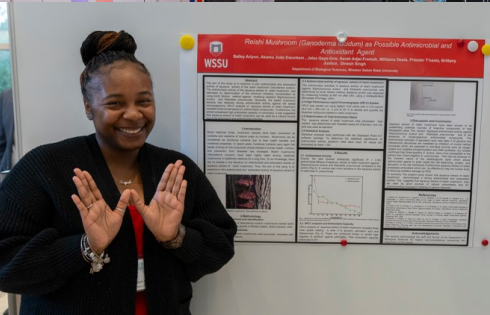
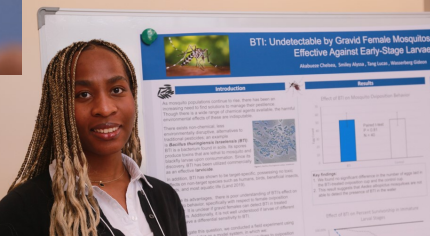
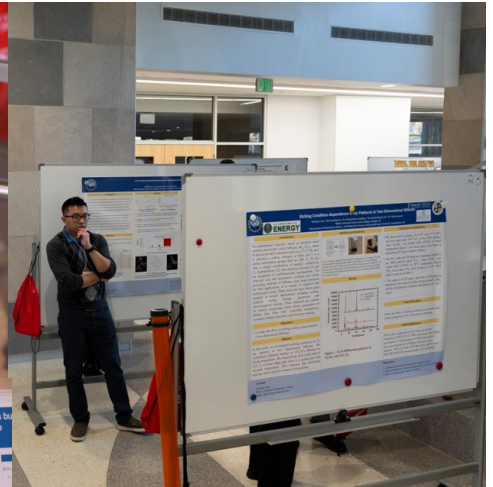


**LENOIR-RHYNE  
UNIVERSITY**



# Photos from the Annual Meeting

Photos by Ryan Brandt & Andy Steele



*Thanks to our photographers for taking fabulous photos!*





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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

