



Volume 11,
Issue 2

January -
February 2023

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

- 119th Annual Meeting
- Call for Moderators & Judges
- Call for Grant Proposals:

***Inside this
issue:***

Letter from Local Arrangements Committee	1-2
CANCAS Workshop	4-5
Meet Dr. Jamie Vernon : Key-note Speaker	6-7
Yarbrough & Bryden Call for Proposals	2 & 7

And more...

119th Annual Meeting of the North Carolina Academy of Sciences

By Dr. Eric Anderson, East Carolina University

Location: East Carolina University

Date: March 31st – April 1st , 2023

Conference Theme: Career Options in STEM

East Carolina University's Harriot College of Arts and Science is excited to host the 119th NCAS Annual Meeting. This will be the first NCAS meeting since the pandemic began, to be held fully in-person. Since 1902 the North Carolina Academy of Science has brought scientists together from multiple disciplines across the state

and has provided an annual meeting for the communication of science. 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 annual meeting is the most active and attended event in the Academy and is vital to accomplish its objective.

Technological advances in recent years have led to a rapid increase in the number of career options available in all of the STEM fields, particularly in graduate research, the medical fields, biotechnology and the pharmaceutical industry. Many students coming out of college are simply unaware of both the academic and non-academic options available to them, or how, if interested, they would pursue these options. The goal of this year's theme "Career Options in STEM" is to introduce students to the many career possibilities and how to prepare for them through workshops and panels in areas including graduate programs, professional schools and resume/CV writing. Students can also interact with a wide assortment of exhibitors to explore available options, while also giving our exhibitors a chance to identify and recruit potential candidates.

The bulk of the meeting is a friendly, low pressure, student-focused gathering of North Carolina scientists, science faculty members and students, where they can gather to share their enthusiasm for the public appreciation of science, science education, scientific research and a meaningful role for science in public policy. Consistent with the goal of conveying science to help shape public policy, our keynote speaker is Dr. Jamie Vernon, an expert in scientific communication, who serves as the executive director and CEO of Sigma Xi, The Scientific Research Honor Society and publisher of the American Scientist magazine.

The annual meeting provides a valuable opportunity for education and scientific commu-



119th Annual Meeting - continued

nication. We encourage you to consider contributing an abstract, attending, and supporting science through your participation in the meeting. Additional information on the meeting can be found on our meeting website, <https://thcas.ecu.edu/annual-meeting-of-the-ncas>, or by contacting Eric Anderson andersone@ecu.edu.



Welcome New Board Member

Dr. Alexey Sukhinin, from the Department of Mathematics at UNC-Greensboro, joins the board as our Parliamentarian. Welcome!

Renew your CASCAS membership today!

CASCAS membership costs are \$15 for individuals and \$100 for a group membership.

Go to <https://www.ncacadsci.org/cascas/> for instructions on creating CASCAS group memberships. CASCAS membership can be renewed at the following link: <https://www.joinit.org/o/north-carolina-academy-of-science>. Please reach out to Dr. Laura Reichenberg at laura.reichenberg@pfeiffer.edu with any questions.

Call for Proposals—Yarbrough Research Grants 2022–2023

From Dr. David Cartrette, Pfeiffer University

The Yarbrough Research Grants program provides funding to undergraduates who are members of the Collegiate Academy to engage in research activities. Approximately four grants are awarded annually and typically range from \$100 to \$500. Top awards may receive as much as \$500 or more. The application deadline is April 14, 2023, and accepted proposals may be funded as early as June for undergraduates to begin their research. Details are found on the Academy website at <https://www.ncacadsci.org/grants-and-awards> and in the [Call for Proposals & Application](#). Questions can be directed to Dr. David Cartrette at David.Cartrette@pfeiffer.edu.

Call for Judges & Moderators for the 2023 Annual Meeting

From Dr. Laura Reichenberg, Pfeiffer University

Judges are needed for both the Friday evening poster session and Saturday oral presentations. Many of the biological science disciplines are represented at the meeting and, ideally, judges will be paired with presentations that match their area of expertise. You will be asked to judge either the poster session or oral presentation session, followed by a collaborative selection of Derieux winners in your area. Volunteering your time as a judge is a great way to help encourage our undergraduate researchers, while participate in the Annual Meeting! If you are interested, please email Dr. Laura Reichenberg at laura.reichenberg@pfeiffer.edu or indicate your interest on your Annual Meeting registration form.

Moderators are needed to preside over oral presentations on Saturday at the Annual Meeting. Moderators can be graduate students, undergraduate students, or faculty from any content area. This is a great way to help facilitate smooth oral presentation sessions. If you are interested, please email Dr. Laura Reichenberg at laura.reichenberg@pfeiffer.edu or indicate your interest on your Annual Meeting registration form.

CANCAS Group Members

Pfeiffer University

UNC-Pembroke

Lenoir- Rhyne University

Elon University

Campbell University

Want to become a CANCAS Group Member?

Group memberships are currently discounted to \$50 and allow all students at the institution who are members of that group to attend the Annual Meeting at a discounted rate. CANCAS membership also gives students who are presenting poster or oral presentations at the annual meeting the opportunity to be judged for prestigious Derieux Awards.

Sign your group up today at [https://www.joinit.org/o/north-carolina-academy-of-science!](https://www.joinit.org/o/north-carolina-academy-of-science)

The CASCAS Undergraduate Research Workshop on November 5th, 2022

From Dr. Laura Reichenberg, Pfeiffer University

The CASCAS Undergraduate Research Workshop was held on Saturday, November 5th at Pfeiffer University's Center for Health Science. There were 45 students in attendance representing four North Carolina Colleges. The event began with a discussion with our panelists Dale Patterson, Faculty Master of Science in Physician Assistant Studies; Erik Brady, Director, Biomedical Graduate Programs, Wake Forest University; Mary Stokes, Admissions Support Coordinator, Occupational Therapy, Pfeiffer University; and Greg Buhrman, Director, Interdisciplinary Biochemistry Master's Program, North Carolina State University. During this discussion, students enquired about a valuable range of topics including practical applications of specific degree types, the application process, standardized test requirements, and insight into the rigors of graduate school.



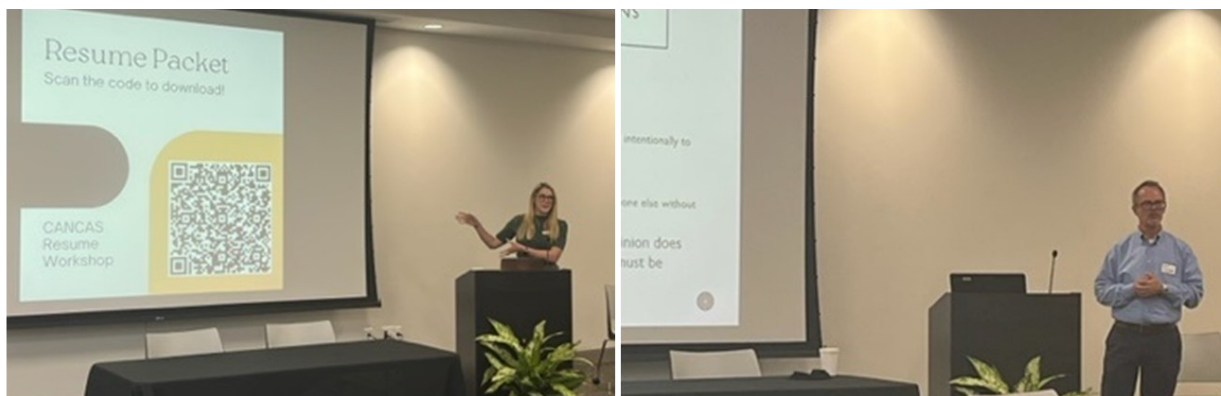
CASCAS Workshop Panel Members (from left to right): Mary Stokes, Admissions Support Coordinator, Occupational Therapy, Pfeiffer University; Dale Patterson, MS, PA-C, Faculty Master of Science in Physician Assistant Studies, Pfeiffer University; Erik Brady, Ph.D. Director, Biomedical Graduate Programs, Wake Forest University; Greg Buhrman, Ph.D. Director, Interdisciplinary Biochemistry Master's Program, North Carolina State University

The panel discussion was followed by our keynote speaker Dr. Tom Darling, Professor & Program Director, Health & Exercise Science, at Pfeiffer University. The title of his talk was Journey of the virus mouse, dead in the waiting room, & cancer tech. Dr. Darling shared his scientific journey, milestones, and future work. His address emphasized the significance of young investigators, their contributions to knowledge and corresponding impact to individual lives.



CANCAS Workshop Keynote Speaker: Dr. Tom Darling, Professor & Program Director, Health & Exercise Science, Pfeiffer University

The event concluded with interactive workshops. Susan Luck, MBA, Professor of Business Communications at Pfeiffer University lead a workshop on connecting the dots between science and business and the importance of bridging this divide. Caroline Sowards, Director of Internships and Career Development at Pfeiffer University lead a resume building workshop and provided information for science majors regarding how to prepare a professional resume that reflect their skills, knowledge, and education that are relevant to the job or graduate program they are seeking. Dr. David Cartrette (Associate Professor of Chemistry, Pfeiffer University) led an interactive workshop focused on ethical considerations in research. This session focused on case studies based on factual events. Dr. Katie Riley, Associate Professor of Biology at Pfeiffer University lead workshop on effective poster and oral presentations, which included an activity on best practices in design and layout.



CANCAS Workshops: Caroline Sowards (left), Director of Internships and Career Development at Pfeiffer University; Dr. David Cartrette (right), Associate Professor of Chemistry, Pfeiffer University

The feedback from student attendees showed that they had a positive experience and enjoyed the event. Many commented that they left the event excited, and with resources to help them prepare for their particular life path with answers to many questions about their future. Joshua Hartsell, a senior biology major said “CANCAS was a great experience because I was able to expand my knowledge on various graduate programs that are available after completing an undergraduate science degree. The panel discussion was very informative on the application process and what to expect while completing the graduate degree.”

An interview with Keynote Speaker Jamie Vernon, PhD

Report By Jess McCann, Duke School of Medicine

We had the chance to chat with the keynote speaker for our upcoming annual meeting, Dr. Jamie Vernon. Dr. Vernon is the Executive Director and CEO at Sigma Xi, The Scientific Research Honor Society, which also publishes the magazine *American Scientist*. Dr. Vernon earned his BS in zoology at North Carolina State University, his MS in molecular biology/ biotechnology at East Carolina University, and his PhD in Cell and Molecular Biology at The University of Texas at Austin. While rooted in bench research, since graduate school, Dr. Vernon's career path has shifted towards policy and science communication. He served as an American Association for the Advancement of Science (AAAS) Science & Technology Policy Fellow in the Office of Energy Efficiency and Renewable Energy housed in the Department of Energy (DOE) in Washington DC. During his tenure as a Fellow, Dr. Vernon led an initiative to inform the public about their access to energy usage data and to promote the adoption of energy efficiency technologies and behaviors; this experience helped to prepare him for his current position in media and science communication. As part of another project tackled while in Washington, Dr. Vernon also helped launch the first National Clean Energy Business Plan Competition, a DOE program to inspire and promote

entrepreneurship. This work helped to increase his understanding of the role that business has to play in moving the envelope forward to generate solutions to scientific problems, such as climate change.

We started off by asking what a typical day looks like for Dr. Vernon. As CEO of Sigma Xi, whose mission includes promoting integrity and ethics in science, providing grants for research, and communicating science to the public, you can imagine that his role is complex. "On a typical day, I might be writing a grant to provide direct aid to scientist at both graduate and undergraduate level. Then I might be in meetings to help direct strategy and planning for our programs to provide the best benefit for the over 100,000 members that we have around the country and around the world." When asked about how his scientific research training has helped him in his current position, he said that he comes back to that training on a daily basis. "I'm a data nut," said Vernon. "When I am making executive decisions in what might be perceived as a 'nonscientific' environment, I can go back to my scientific training and critical thinking



*Dr. Jamie Vernon,
Executive Director and CEO
at Sigma Xi, The Scientific
Research Honor Society*

skills. I know what data I might need to answer a question and can ask for the best analysis I can get," before implementing programs and new initiatives at Sigma Xi.

A priority goal of Sigma Xi's strategic plan is to promote scientific leadership and influence in the public sphere. Many scientists want to contribute their expert opinions to the discourse and share their work with the public, but it can be hard to pierce the noisy landscape of social media and politically motivated anti-scientific sentiment. "When we survey our members, most scientists want to communicate as an expert, and not necessarily as an activist," said Dr. Vernon. He recommended that if you want to get more engaged in communication, especially through social me-

Interview with Dr. Vernon, continued

dia, you need to ask yourself how you think you can be most effective. “We find that scientists have the most impact when we rely on our areas of expertise and stay focused. Once you start to veer off into territory you don’t know as

well, you make mistakes,” and that can result in eroding the confidence that the public has in you as an expert.

All of us at NCAS are looking forward to hearing more from Dr. Vernon at the an-

nual meeting about how we can all become better at communicating our science, as well as about the role that scientists have to play in effecting positive change in policy at both the local and national level.

Call for Proposals—Robert R. Bryden Graduate Research Award

1. One \$1,000 grant is in the NCAS 2023-24 budget for research equipment and/or expenses related to attending scientific conferences. Past recipients are not eligible.
2. Both the applicant and the research advisor must be at a college or university in North Carolina and members of the NCAS in good standing (membership forms may be obtained from the address listed below or at the web site: <http://www.ncacadsci.org>). *Please note that this grant program is funded through dues paid by NCAS members. In order to continue this and other valuable NCAS programs, research advisors are encouraged to request their institutions to contribute through an institutional membership.*
3. Applications for the grant must include one copy of the following:
 - NCAS proposal cover sheet form with one page budget summary. Itemize as specifically as possible.
 - Extended abstract of research no longer than 2 pages with three sections.
 - Introduction: Background, significance and clear statement of purpose.
 - Results: Brief summary of experimental results to date.
 - Planned Research: Brief description of work planned over the next year.
4. Send applications electronically to:
 - Dr. Zhenquan Jia, Email: z_jia@uncg.edu
 - and**
 - Dr. Mark McCallum, Email: mark.mccallum@pfeiffer.edu
5. **Deadline** for applications is **February 27, 2023**.
6. Award will be announced by **March 25 2023** at the NCAS annual business meeting.
7. Award recipient is strongly encouraged to present their work at the **NCAS 2024** annual meeting.

Yarbrough Winners 2022

Report By Dr. David Cartrette, Pfeiffer University and Jordan Womick, Campbell University

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!

We look forward to hearing about the research of the recipients of this past grant cycle at the upcoming Annual Meeting

Anna Braaten	Campbell University	Mentor: Dr. Stephanie Mathews	Using Transposon Mutagenesis to Identify Genes in <i>Lactococcus lactis</i> Required for Bio-film Formation
Caleb Fluno	Lenoir-Rhyne University	Mentor: Dr. Carly York	The Effects of Cobalt Chloride and Zinc Chloride on the Lateral Line and C-Start Reaction on <i>Danio rerio</i>
Alexander Gehron	Catawba University	Mentor: Dr. Carmony Hartwig	<i>Pleurotus ostreatus</i> Mycoremediation of Mercury in Contaminated Soils
Sarina Maybank	Fayetteville State University	Mentor: Dr. Danielle Graham	Analyzing the Effects of Nanoparticles to Combat Biofilm-Forming and Antibiotic-Resistant Bacteria
Heather McDowell	Lenoir-Rhyne University	Mentor: Dr. Marsha Fanning	Effects of Oocyte Maturation in Zebrafish (<i>Danio rerio</i>) When Exposed to Endocrine-Disrupting Chemicals
Tanner White	Lenoir-Rhyne University	Mentor: Dr. Judy Moore	The Effect of Methotrexate on Caveolin-1 Regulation in the Regeneration of <i>Lumbriculus variegatus</i>

Renewal of Institutional Sponsorships

We are grateful for the support of our 2022 Institutional Sponsors. We invite these institutions to renew their support and also extend an invitation to any company, college, university or organization to become new Institutional Sponsors for 2023. Becoming an Institutional Sponsor is an opportunity to demonstrate your organization's support for scientific research, science education, and a meaningful role for science in public policy within the state of North Carolina. The annual fee to become an Institutional Sponsor is \$300 per year. Institutional sponsors are proudly listed on the NCAS website which hosts active links to their home webpages. Institutional sponsors will also be listed in the annual meeting program along with the sponsors of the annual meeting. Our annual meeting draws presentations and participation from more than 25 academic institutions across the state. The NCAS Board of Directors invites all members to encourage their companies, colleges, universities and professional organizations to renew or become new Institutional Sponsors. Please contact the NCAS Treasurer, Dr. Evan Reynolds at ereynolds@campbell.edu to inquire about Institutional Sponsorship

Job Opportunity: Molecular Biology Teaching Scholar

The Biotechnology Program (BIT) at North Carolina State University invites applications for the position of Postdoctoral Teaching Scholar in the area of molecular biology. This is a 12-month position and is renewable for up to 3 years based on performance and funding availability.

Duties and Responsibilities

Responsibilities include teaching sections at the graduate and undergraduate levels of an existing course that explores manipulation and expression of recombinant DNA and developing and implementing a new laboratory course in a cutting-edge area of molecular biotechnology in the fellow's area of expertise. There are opportunities for mentoring of undergraduate students in authentic research projects and discipline-based education research (DBER) studies.

See: jobs.ncsu.edu/postings/178210

NCAS in the News! at Astronomy Days

Once again this year, Academy members organized a booth and volunteers to share their enthusiasm about science with a huge crowd of visitors at Astronomy Days in the NC Museum of Natural Sciences. This year's theme was Humans in Space: Past, Present, and Future! In the photo, NCAS President, Mike Kingston, and NCAS Historian, Lisa Kelly, are standing in front of a board full of imaginative drawings of what guests thought an extraterrestrial friend might look like. Thanks to all the volunteers that make this event possible!



Photo by Maria Pickering



The North Carolina Academy of Science
Meredith College Department of Biological Sciences, 3800 Hillsborough St., Raleigh, NC 27606-5298

Phone: 919-760-8189
Fax: 919-788-0956
ncacadsci@email.meredith.edu

“Like” us on Facebook and follow us on Twitter (@NCAcadofSci) to get the latest updates and information on what’s happening at your North Carolina Academy of Science!



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.

Con-

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

