NEWSLETTER

January 2024

Chemistry and Physics Department, Oxendine Science Building – Room 3101, Pembroke, NC 28372
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The Chemistry and Physics Department

The department held its semester meeting on January 3, 2024, in the Oxendine Science Building in room 3256. Our special guest was the Provost and Vice Chancellor for Academic Affairs Diane Prusank. Dr. Siva Mandjiny welcomes everyone and wish all the best for the new year. After the meeting, everyone enjoyed lunch catered by Sodexo.


Fisher Scientific / PERIODIC CHART OF THE ELEMENTS


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Historically Minority-Serving Institutions in North Carolina Launch Bioprocessing Training Hubs

Six public and private Historically Black Colleges and Universities (HBCUs) and the state's only Historically American Indian University (HAIU) have launched a new coalition to increase accessibility to the biopharmaceutical industry.

The HBCU/HAIU Coalition is led by North Carolina Central University, one of the state's five public HBCU's. It's made up of regional hubs across North Carolina, created to prepare people for entry-level jobs in biopharmaceutical manufacturing.

The multi-institution project is part of an even bigger partnership called the Accelerate NC-Life Sciences Manufacturing Coalition. The organization was awarded $25 million by the federal government to diversify the medical manufacturing industry in the state.

Part of this funding will go directly to the HBCU/HAIU coalition, which is launching its first regional hub at The University of North Carolina at Pembroke, the coalition's HAIU.

William Smith is the director of development at NC Central's Biomanufacturing Research Institute and Technology Enterprise (BRITE).

"Accelerate NC is all about helping underserved populations develop new skills to prepare for job opportunities in life sciences manufacturing that may have seemed unobtainable," Smith said in a statement. "UNC-Pembroke is taking a critical first step for the HBCU/HAIU coalition in building an equitable talent pipeline, with many more training opportunities to come."

Participants in the program will take 80 hours of in-person bioprocessing courses, led by NC Central-trained instructors.

UNC-Pembroke's bioprocessing hub will be housed within the university's Biotechnology Research and Training Center.

Leonard Holmes, director of UNC-Pembroke's Biotechnology Research and Training Center, said students will learn about working in a sterile environment, upstream/downstream processing and how to operate equipment.

The program is free, and open to both college students and community members.

Velinda Locklear Woriax, chair of UNC-Pembroke's biology department, said opening the program up to everyone allows for even more accessibility – especially in a rural area like Pembroke.

"(We) are able to take in people that couldn't do this," Woriax said. "They couldn't do the travel… or they wouldn't have the money to pay for them to have living expenses for a two-week period. They can do it right here in their own backyard."

Being in a rural area, however, also comes with some obstacles. Most of the project's partners – such as Biogen, Amgen and Novo Nordisk – are located in urban areas.

Associate Dean Ashley Allen refers to this as the classic chicken and egg problem, or what comes first — a trained workforce or industry partners moving to the area? She said the hope is that by training the workforce, some of those industry partners are incentivized to expand into more rural areas.

"We want to do everything we can to connect (our participants) with potential employers that aren't necessarily going to require that they drive all the way to Raleigh," Allen said. "But I'm confident we're going to find some good paths there and hopefully provide some incentives for our industry partners to potentially look over here at Robeson County and set up shop."

Even so, Allen said there is still a big need for people with bioprocessing expertise in the industry.

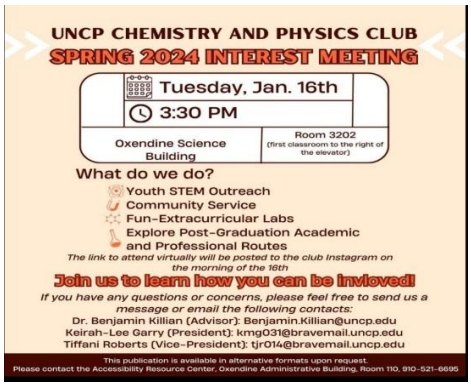
"(They're) vital to this pharmaceutical industry," Allen said. "You can complete these online modules, and then take a two-week class that is then going to make you eligible for these entry-level positions at these various companies – which I think is fabulous and not what people would expect."

The program starts on Jan. 22 and lasts until Feb. 2. UNC-Pembroke will also offer additional trainings in the summer. More information about UNC-Pembroke's program and registration can be found here.
The HBCU/HAIU Coalition's other hubs will be located at Elizabeth City State University, Fayetteville State University, Livingstone College, Saint Augustine's University and Winston-Salem State University. These universities will also launch bioprocessing trainings later in 2024.

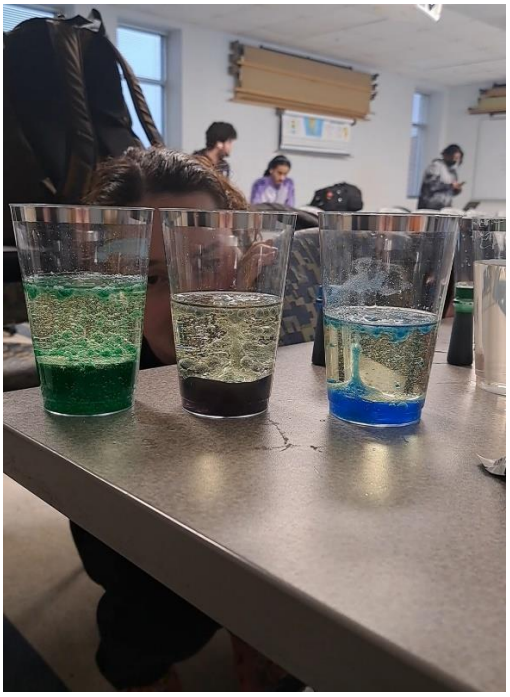
Spring 2024 Chemistry and Physics Club Interest Meeting

On behalf of the Chemistry and Physics Club, I would like to invite all students interested in chemistry and physics and youth STEM outreach to join us for our interest meeting this semester. It will be held on Tuesday, January 16, in SCI 3202. We welcome all majors and graduating classes!
This is not the only opportunity to join us as we welcome new members to any meeting! There are no dues and activities are generally at no cost to members.
If there are any questions or concerns, please don't hesitate to reach out to the following:

Keirah-Lee Garry - President or Dr. Benjamin Killian - Advisor
kmg031@bravemail.uncp.edu benjamin.killian@uncp.edu



Spring Interest Meeting: the Club invited any interested students to join and learn more about what the organization has to offer and to make DIY Alka Seltzer Lava Lamps.



January 23 - Spring Involvement Fair: located in the student center and to recruit more Club members.

Gentec-Electr-Optics Laser Lab Awards Program 2023

Dr. Tikaram Neupane, Assistant Professor of Physics, enthusiastically applied to the Gentec-EO Laser Lab Award Program 2023. His application was awarded from among the various high-quality submissions from academic organizations across the world, earning him the prestigious recognition of being awarded a wireless power meter valued at $1,875.95 from Gentec-Eo, a distinguished Canadian company, in January 2024.

This cutting-edge device, part of the BLU Series, revolutionizes power measurement by combining a detector and a meter with Bluetooth connectivity in a single, compact unit. The meter's Bluetooth feature enables users to conveniently display results on their mobile devices through the Gentec-EO BLU app, available for iOS on the App Store and for Android on Google Play. The versatility of this wireless power meter extends to its compatibility with PCs—simply plug in the included Bluetooth receptor, and

you're ready to make precise power or energy measurements within seconds. One remarkable advantage is the freedom it offers to operators, allowing them to be at a distance from the detector (up to 30m, depending on the environment and barriers). Moreover, this design reduces cable clutter in the workspace, contributing to a safer environment with fewer potential accidents.

Dr. Neupane and the Chemistry and Physics department express sincere gratitude to Gentec-Eo for choosing UNCP as the recipient of this exceptional award. Anticipating continued support from Gentec-Eo for educational endeavors in the future, we look forward to leveraging this innovative technology for academic enrichment.

Special thanks to Ms. Carolyn Oxendine and Ms. BreAnna Branch for their invaluable support in acquiring this highly useful device for the lab.

HBCU/HAIU Coalition Launches First Bioprocessing Training at The University of North Carolina at Pembroke

New Accelerate NC - Life Sciences Manufacturing Training,
Enabled by EDA's Build Back Better Regional Challenge Funding, Builds Diverse Talent Pipeline

PEMBROKE, NC -- North Carolina Central University (NCCU) and UNC Pembroke (UNC Pembroke) announced an inaugural bioprocessing training to help students and residents prepare for entry level positions in biopharmaceutical manufacturing.

The two-week, hands-on short course will be offered for free from Jan. 22 to Feb. 2, 2024, for up to 12 participants. This new training is part of the Accelerate NC – Life Sciences Manufacturing initiative, funded by the U.S. Economic Development Administration's Build Back Better Regional Challenge (BBBRC), which aims to build strong regional economies and support community-led economic development nationwide.

"We are pleased to kick off this first-in-a-series of regional bioprocessing training programs in North Carolina in response to the needs of a rapidly growing life sciences manufacturing industry," said Dr. Ashley Batts Allen, Associate Dean of Faculty and Research in the College of Arts and Sciences at UNCP. "This is critical given the focus on developing job opportunities in the state's economically challenged counties."

The Accelerate NC – Life Sciences Manufacturing coalition, led by the North Carolina Biotechnology Center, received $25M in BBBRC funding to build equity while supporting economic development across the state.

NCCU, home to the Biomanufacturing Research Institute and Technology Enterprise (BRITE) and leader of the HBCU/HAIU Coalition, worked closely with UNCP for it to be the first university in the coalition to offer bioprocessing training. The coalition also includes Elizabeth City State University, Fayetteville State University, Livingstone College, Saint Augustine's University and Winston-Salem State University. Other coalition members are expected to launch similar trainings in 2024.

"Accelerate NC is all about helping underserved populations develop new skills to prepare for job opportunities in life sciences manufacturing that may have seemed unobtainable," said William Smith, NCCU-BRITE director of development. "UNC Pembroke is taking a critical first step for the HBCU/HAIU coalition in building an equitable talent pipeline, with many more training opportunities to come."

BBBRC funding helped purchase equipment needed to teach upstream and downstream bioprocessing as well as provided the funding to conduct “train the trainer” events where faculty could become trainers.
UNCP training applicants must be 18 years of age or older and must have a high school diploma or GED. Before starting the short course, students must complete five online modules.
Upon completion of the two-week free course, students will earn several certifications in biomanufacturing, including an advanced certificate in biopharmaceutical manufacturing. Training will be held at UNCP’s Biotechnology Research and Training Center, three miles north of campus at Carolina Commerce and Technology Park (COMtech).
For more information or to register, visit uncp.edu/biotraining.

Inaugural Cohort for the Accelerate NC – Life Sciences Manufacturing Bioprocessing Training Program

Macie Bethea, Dr. Siva Mandjiny, Dr. Nathaniel Hentz, and Dr. Darren Pearson

Dean Richard Gay, Provost Diane Prusank, William Smith – BRITE Director, Associate Dean Ashley Allen, Rob Onyenwoke – BRITE Associate Director

Sara Imhof, Senior Director with North Carolina Biotechnology Center, and Chancellor Robin Gary Cummings

Contribution to the Reprint Book

The research group (Tikaram Neupane, Uma Poudyal, Bagher Tabibi, Wan-Joong Kim, and Felix Jaetae Seo) contributed to the book edition on 'Advanced Graphene and Graphene Oxide Materials' (pages 34-43).

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MDPI AG - Multidisciplinary Digital Publishing Institute, St. Alban-Anlage 66, CH-4052 Basel, Switzerland

Congratulations to both of you.

Tikaram Neupane, Ph.D
Assistant Professor of Physics

Uma Poudyal, Ph.D.
Assistant Professor of Physics

Students News

Invitation to UNC Chemistry Event
Frank Leibfarth
Associate Professor of Chemistry
UNC Chapel Hill

Kayla Kaye and **Sharon Daminabo** have been nominated by Dr. Siva Mandjiny as an outstanding scholar to take part in the UNC Chapel Hill Chemistry Department's annual Slayton Evans Lectureship and Outreach Program on February 15, 2024. Kayla and Sharon will be joined by students from 4 local institutions (St. Augustine, Fayetteville State, NC Central University, and NC A&T). This will be a great opportunity to learn more about career options in chemistry as well as network with peers from the area. The fully funded day-long workshop is meant to introduce students to cutting-edge research, diverse scientists, and future career paths in the chemical sciences.
The UNC Chemistry Department will be hosting Professor Luisa Wittaker-Brooks of University of Utah for its annual Slayton Evans Lecture on February 16, 2024. The Slayton Evans lecture is part of the Carolina Colloquia Series that features leading scientists presenting broadly accessible talks addressed to the full Department of Chemistry in a festive atmosphere. Our goal is to introduce these students to opportunities for graduate education in the chemical sciences and give them a chance to interact with an internationally renowned researcher. We seek to give the students a view of a "day in the life" of graduate students and demystify the pathway to graduate school. We aim to provide the students an opportunity to meet one of the premier scientists in the country, Professor Luisa Wittaker-Brooks of University of Utah, as well as learn about the many career options and opportunities available to STEM students.