FALL 25
NO. #1

The Official Newsletter of the **National Society of Black Physicists**

Waves & Packets

IN THIS EDITION

Opening Doors: NSBP's influence on students

What's the news? **Waves & Packets is back**!

We want you! How to get involved with W&P

Waves & Packets

THIS COULD BE YOUR AD!

Waves & Packets is seeking advertisements from organizations interested in reaching the broader physics community through a interdisciplinary, multimedia publication.

Interested? Reach out to the W&P Team by contacting **studentrep@nsbp.org** today!

WHAT'S INSIDE?

A welcome from the President 4

Welcome to Waves & Packets! 5

Rouse Fellows, Revolutions in Research 6

Summoning Stars: A Summer with **Simons NSBP Scholars** 8

Building the Leadership Lifecycle 11

Physics, **In Full Color** 14

How can you get involved with W&P? 17

Welcome to Waves & Packets

A welcome from the **President of NSBP**

I am very pleased to see the revival of the NSBP Waves and Packets newsletter. Historically, this newsletter was an opportunity for our members and others in the community to highlight research being done by our members. The revival of Waves is a nod to the past while serving as a spotlight on the world class research done by our community which serves to encourage current and future researchers. Thank you to the student council and especially Mr. Allen Pierre-Louis for pushing to make this revival a reality and Ms. Logan White for serving as editor of the newsletter. I'm looking forward to the Waves and Packets newsletter helping to move our organization and the community forward.

Dr. Stephen Roberson
President, NSBP

EDITOR'S NOTE

Hello readers! Thanks for looking into our first edition of the Waves and Packets newsletter. We look forward to providing quality content to our readership.

Reviving Waves and Packets from an online venture of NSBP from over a decade ago, to a newsletter run by student council members, was a vision we forged and delivered on with engaging articles by our Student Editorial Lead, Logan White. We look forward to your submissions and hope to net a large scale audience.

Allen Pierre-Louis
NSBP Student Representative

Welcome to the first issue of Waves and Packets, readers! **We're very excited to present this rebrand of the Official NSBP Newsletter with a special printed edition at the 2025 Annual Conference!**

In this issue, we highlight a handful of the many programs, internships, and fellowships supported by NSBP that enrich the skills, experience, and growth of both graduate and undergraduate students, including some that have shaped my own journey as a physicist. I hope you all enjoy reading as much as Allen and I enjoyed the process of interviewing the incredible individuals who make these programs possible.

Logan A. White
Student Editorial Lead

ROUSE FELLOWS, REVOLUTIONS IN RESEARCH.

Meet the 2024 Carl A. Rouse Fellows!

Logan A. White

Interviews by Logan White & Allen Pierre-Louis

"[We're] throwing things at the wall and seeing what sticks." That's how Isaiah Tyler, a senior at Loyola Marymount University, describes his research. Tyler is double majoring in physics and mathematics, and spent his summer last year at Caltech researching gravitational waveform modeling. He was a participant in the Laser Interferometer Gravitational-Wave Observatory Summer Undergraduate Research Fellowship Program (LIGO SURF), and is also one of three recipients of the Carl A. Rouse Memorial Fellowship.

Dr. Carl A. Rouse was the first Black physicist to earn a doctorate in Physics from the California Institute of Technology, and the Memorial Fellowship, established in Dr. Rouse's honor by his family, carries on the legacy he established. The Rouse Memorial Fellowship is awarded annually to a handful of participants in LIGO SURF, particularly those who come from underrepresented communities in physics. This fellowship generously supports their research for the summer through funding contributions made by the National Society of Black Physicists and Caltech.

For the 2024 Fellows, the Fellowship has opened new pathways, not just in research but in their identities as scientists. Emmanuel Makelele came to Caltech by way of the Democratic Republic of Congo and Zambia. From taking several gap years after graduating from high school, training to run track and field at a collegiate level, and finally finding his place at Kenyon College, Makelele has had an incredible journey on his way to becoming a Rouse Fellow. Initially, he aimed to be an engineer upon arriving at college. "I want[ed] to be an engineer. But there's no engineering major at Kenyon," he recalled. He tried his hand at mathematics, before finding a love for physics. "I took modern physics, and this professor, I loved him so much. It was his first year teaching, but I could relate to him on a personal level. I remember [feeling like] I'm a physics major".

"[We're] throwing things at the wall and seeing what sticks."

Former Rouse Fellows Carl Fields, Julien Kearns, and John Martyn.

Makelele began his first research project in physics shortly after that course, and spent a summer working with Prof. Madeline Wade at Kenyon on photon calibration for the interferometer, colloquially known as "P-CAL", for LIGO. This early connection eventually led him back to the LIGO collaboration the following spring, when he met Dr. Rick Savage on an in-person visit to LIGO. "[He asked me], do you want to come be a SURF student? I'm like, oh, yeah, yeah, for sure." As a Rouse Fellow, Makelele has continued to work on the instrumentation that started his journey in research, and has found a home with the P-CAL team.

Tyler, in contrast, is a California local. Born and raised in Inglewood, he was initially drawn to LIGO SURF in part, because it was close to home. He worked with Dr. Lucy Thomas and Taylor Knapp over the summer, using gravitational waveform modeling to progress our understanding of formation channels for the binary systems that eventually merge and produce gravitational waves. "[My project] allowed me to figure out what my research interests were." Tyler, while interested in physics, hasn't narrowed down a specific niche in astrophysics yet. He's also found a love in mathematics, much like Makelele originally did, and notes, "I'm still struggling to make the connection between pure math and physics, which is what I'm [really] interested in."
Tyler has let his experience working on theoretical astrophysics as a Rouse Fellow inspire his current research, which he describes as "a different way to model the discrepancy between Newtonian gravity and what we observe with dark matter in galactic rotation".

"[This program] demystifies what research is really like."

The 2024 Rouse Fellows have found that their experiences have made them better scientists and collaborators. "[This program] demystifies what research is really like," Tyler explains. Makelele discovered a newfound appreciation for the variety of scientists he's been able to work alongside as a Fellow, which truly captures the collaborative, supportive spirit of the Fellowship. "Seeing that are people who like to really grind; physics is really what they're about– but there are also those who like to balance it out a little bit, you know? It really depends on what you want from your career, and I truly appreciate all the variety."

Interested in joining Student Council?

Student Council Applications are coming this winter! We expect to transition to our new Student Council by the end of January. Student Council members should expect to serve for two years and should be ready to assist with virtual event programming, writing for Waves and Packets, coordinating with our board to host events such as the NSBP KITP Innovate Seminar and annual conference, and advertising for NSBP events year-round. Dedicated and organized students are encouraged to apply.

SUMMONING STARS: A SUMMER WITH SIMONS-NSBP SCHOLARS

How the 2025 Simons-NSBP Scholars created community through cohort.

Logan A. White

At the close of May, just after Memorial Day, the conference rooms at the Simons Foundation's Flatiron Institute are not filled with business, but instead are host to a bootcamp. This is the welcome that the incoming cohort of Simons-NSBP Scholars receive– their first days in New York City are spent bonding with their peers, refreshing up computational and research skills, and setting their personal and professional development goals for the summer. They'll spend the next two and a half months working on research alongside Flatiron Institute scientists on topics in astrophysics, quantum physics, mathematics, biology, and neuroscience. The science that they study will shape their summer, but the connections and community that they form with their cohort and the broader Simons-NSBP Scholars community will serve as a springboard for their careers.

The Simons-NSBP Scholars Program (SNSP) is now in its sixth year of successfully nurturing young Black scientists. The program began in 2020, a collaboration between the Simons Foundation and NSBP, initiated by Dr. Kasey Wagoner and the President of NSBP at the time, Dr. Stephon Alexander. The first cohort of Scholars adapted to the environment of intense, independent research fostered at the Flatiron Institute virtually, taking on new challenges from an adjusted worldview. Today's Scholars enjoy the growth that began in the foundation of that first cohort. From tackling research problems with innovative computational simulations, to working in labs to develop new astronomical instrumentation, this class of scholars has gone above and beyond in both the experiences that they bring to the program and the experiences they gained from the program. We talked to four of the current 2025 Scholars during their summer spent at the Flatiron Institute.

"Within the first week I met more black physicists than I had met in my entire life."

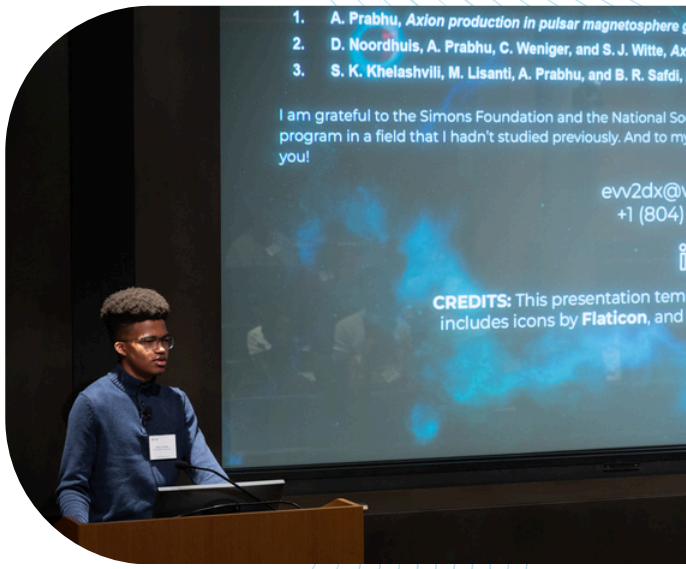
“I think that I was really missing out on this kind of community aspect of being in science.” Gabriel Marous is a senior in physics at Yale. He spent the summer working in the Center for Computational Quantum Physics, investigating the properties of bilayer graphene and taking a first dive into solid state physics. As one of two black undergraduates in physics at Yale, he found that becoming a Scholar allowed him to finally envision what his future career might look like. “Even within the first week I met more black physicists than I had met in my entire life,” Marous recalled. “I feel like that makes a huge difference in being able to see yourself continuing on in the field and being able to project yourself forward. Physics is hard, and it's especially hard if you don't have a strong community in it.”

Daija Ricks, a senior in physics at North Carolina Central University, comes from a family of scientists– her father and sister are both chemists. Ricks has always known that her scientific interest was in the stars, and spent her summer at Flatiron working to utilize machine learning techniques for better interpretations of stellar spectroscopy data from large surveys. Although she attends an HBCU with an active chapter of NSBP, Ricks still found the experience of being Black in physics to be a challenge. “[NCCU is] an engineering-geared school [more] than a physics geared school,” she explained. “It's hard to get interaction with other physics students, because they identify more with engineering than they do with physics.” She found that the environment at Flatiron and within the Scholars Program provided the community she still sought. “Coming to [the Simons-NSBP Scholars Program], where the focus is on Black people excelling– It's nice to know that there are scientists that care about diversity in this field.”

Not all of the 2025 Scholars come from a physics background– Israel Zewdie is a senior at Beloit College, double majoring in computer science and cognitive science. The neuroscience projects offered through SNSP drew him to apply, despite having no previous exposure to NSBP or physics. Zewdie worked in the Center for Computational Neuroscience, researching the semantic links between words and using them to test large language models. He recalls his biggest lesson learned over the summer was the amount of pathways to a successful career in academia. “I really thought it was just the traditional route, you go from undergrad straight into grad school,” Zewdie explained. But hearing the experiences of peers and mentors changed his perspective. “I've rarely heard, like a ‘normal story’ going [from] to undergrad to grad school. It's definitely a nice learning experience, seeing what people are doing once they graduate– it could be taking gap years, postbaccs, or working before they go into their Ph.D. program.”

“It's nice to know that there are scientists that care about diversity in this field.”

“When you get physicists with similar backgrounds, who are at a similar stage in their career, and you put them all in the same place, good things are bound to happen.”



Altony Foote, a fourth year astronomy major at the University of Virginia (and the president of UVA’s NSBP Chapter!), took a step out of his comfort zone over the summer. With a bulk of his previous research experience in observational astronomy, Foote dove into theory at the Center for Computational Astrophysics, researching axion production in the Crab Pulsar, and searching for radio detections to confirm his models and predictions. However, he was most surprised by the environment that is cultivated at the Simons Foundation and Flatiron Institute. “Entering into something that had been established for a very long time–people, already had so many different communities. [The scientists at Flatiron] already had lunch and dinner schedules, and I was just like, wow, this is so professional, but also so communal.” Much like his peers, Foote found that the best part of the program wasn’t the research performed, or the skills developed, but the connections formed within the cohort of Scholars. “When you get physicists with similar backgrounds, who are at a similar stage in their career, and you put them all in the same place, good things are bound to happen. I have lifelong friends now that I have gone through the program.”

If you want to learn more about the science the 2025 Scholars did over the summer, they’ll be presenting their work at the 2025 NSBP-NSHP Annual Conference– keep an eye out for them in the poster and oral sessions!

If you want to learn more and are interested in applying, please visit *https://www.simonsfoundation.org/simons-nsbp-summer-program-snsp*. Applications for the 2026 Cohort will be open soon!

BUILDING THE LEADERSHIP LIFECYCLE

The **Student Leadership and Development Summit** (SLDS) has found success from the ground up.

Logan A. White

Like many great collaborations, the beginnings of the Student Leadership Development Summit (SLDS) stemmed from a simple conversation.

"There was an APS (American Physical Society) Mentorship Conference in California [in 2021]." SLDS co-founder Dr. Joshua Burrow recalls. He was still in graduate school and serving on NSBP's Executive Board as the Student Representative at the time. "Myself and Brian, we got to chatting, and we [thought] it'd be really great if we had a joint conference." The 'Brian' in question is Brian Zamarripa Roman, who was the then Student Representative for the National Society of Hispanic Physicists (NSHP). It had been several years since the last Joint Annual Conference was held with both Societies, and both Burrow and Roman were interested in rekindling the relationship between the professional organizations at a student-focused level. Burrow, in addition to his involvement with NSBP, credits his experiences with other professional organizations and conferences as inspiration for the final form SLDS took on. He was a member of Optica throughout his time as a graduate student, and as a member of a student chapter, had the opportunity to organize international technical conferences. (Editor's Note: Optica is now the location of NSBP's headquarters as of early 2023, and is also a generous sponsor of the Annual Conference). In addition to his experiences on the scientific side of professional development, Burrow also attended ComSciCon, a conference that focuses on the development of strong science communication skills in graduate students from a variety of scientific disciplines.

"The idea was to have something that was almost like a culmination [of some] of the conference experiences that I had– to do something that's based on developing leadership, and not necessarily technical."

However, that initial seed of an idea took time to grow. Over the next two years, Burrow worked with the President of NSBP at the time, Dr. Willie Rockward, to develop the concept of SLDS into a fully-formed realization. The leadership structure also changed over time– as Burrow stepped down from his position as Student Rep, he was succeeded by Dr. Farrah Simpson, who also became involved in the push towards the pilot program, which was held during her term in March 2023. "We've both been involved pretty much from the beginning, but it [the conception of SLDS] predated [my term as Student Rep] as well," she explained.

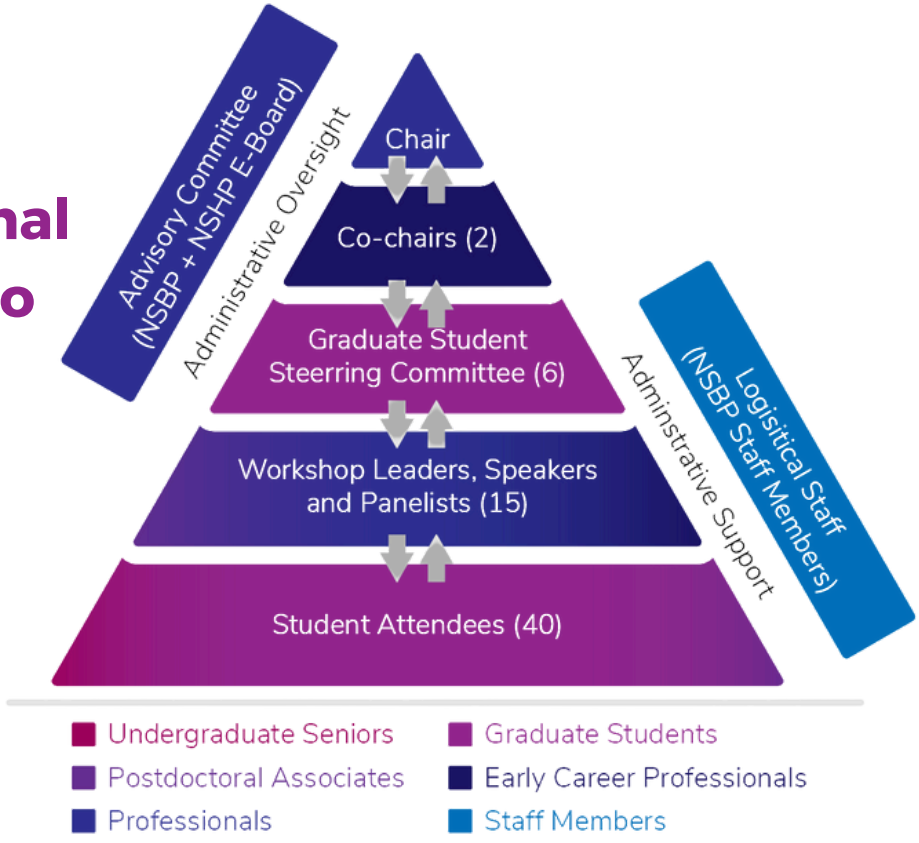
Even though both Burrow and Simpson have since transitioned from student leadership and become professional members of NSBP (Burrow is now an Assistant Professor at Morgan State University; while Simpson is a Dicke Fellow and postdoctoral scholar at Princeton University), they are still directly involved with the continued success of SLDS, now serving not only as founders, but as co-PIs of the program. The summit has grown significantly since the pilot program in 2023, which predated the 2024 Annual Conference as the first organized meeting between NSBP and NSHP in a decade.

What is SLDS?

The Student Leadership Development Summit is now an annual three-day conference, designed to 'enhance Black and Brown student leadership acumen through interactive workshops and panels on grantsmanship, project management, implicit bias, mentorship, and effective communication skills.' Graduate and upper-level undergraduate student members of NSBP and NSHP gather at NSBP Headquarters in Washington D.C. to build leadership, communication, and management skills through a wide variety of interdisciplinary panels and interactive workshops that focus on everything from grant writing and entrepreneurship to leadership styles and personal branding.

"SLDS had an underlying message that the attendees are capable of being leaders of the next generation of great scientists if given the right tools," a 2024 attendee reflected. "In the grant writing workshop, we were encouraged to think about our own research as a story, something I [haven't had] the chance to actively practice before. I also appreciated how the speakers took time to talk about their own personal journeys to get to where they are today. It is an unfortunate reality that scientists from underrepresented groups often face unique challenges throughout their scientific careers, and it was so inspiring to speak with people who have overcome those things."

The SLDS organizational structure is crafted to provide mentorship and development opportunties at all levels .



As a student-focused summit, SLDS not only focuses on building the skills of participants, but is founded upon an organizational structure that develops the leadership of the conference planners as well. In addition to the Co-Chairs, a Graduate Student Steering Committee is responsible for the development, planning, and execution of the summit. This committee is intentionally designed to be composed of previous attendees from both Societies, providing them with a place to both implement skills learned at the summit and give direct feedback to shape future directions of SLDS.

"There was a lot that they [past SLDS attendees] brought to the steering committee, because they were able to talk from experience," Simpson remembers of the 2025 Steering Committee. She's a strong supporter of the organizational structure they've built. "There's no other format that you can gain these skills in, you know?"

A homegrown success story

In 2024, 95% of participants reported that SLDS improved their leadership and science communication skills. Many also felt more confident in their ability to write competitive grant proposals, a skill attendees saw as vital for their academic and professional growth. "A lot of [participants] were a lot more confident and excited to explore different career paths in physics, and a lot of people expressed a lot of interest in academia and [science communication]," Simpson recalls. In 2025, similarly, 87% of participants agreed or strongly agreed that SLDS positively impacted their leadership skills- helping them better understand their leadership style, strengthen self-awareness and boost their confidence. Additionally, 78% reported measurable improvement in their science communication skills.

Several of the 2025 participants had the privilege of returning to the summit as previous attendees. "This was my second time attending, and my expectations were exceeded. The speakers and programming this year provided what felt like an entirely new training experience. Each day brought something compelling each day and [I] interacted with new people each day as well."

In 2025, 87% of participants agreed or strongly agreed that SLDS positively impacted their leadership skills; helping them better understand their leadership style, strengthen self-awareness and boost their confidence.

But metrics alone don't capture the full impact of SLDS. Both Simpson and Burrow were pleasantly surprised by the bonds that formed between respective participants during each iteration of the summit. "I didn't expect SLDS to be as effective at cohort development between the attendees," Burrow explained. "I don't think this happens at the larger conference because it's so large, and it's more technical-focused. This provides an additional sort of programming that NSBP offers, which is very unique, and [we were] very surprised at how that naturally happens."

Now in their third year, the co-PIs of SLDS are excited to see how it can serve as a model for future conferences and collaborations. They're hopeful that the success of SLDS will serve as the foundation of similar programs for all career levels, not just graduate students. While it may have come from humble beginnings, the Student Leadership Development Summit has found great success through a unique, innovative approach to professional development. Its impact can perhaps best be understood through the words of a 2025 attendee: "[SLDS] energized me, helped me define my leadership style, and connected me with peers and mentors in a deep and meaningful way. It was exactly the push I needed to re-engage with school and my career."

If you're interested in attending the 2026 Student Leadership Development Summit, stay tuned for more information! Applications will open in Spring 2026. You can also find the co-PIs in attendance at this year's Joint Annual Conference.

PHYSICS, IN FULL COLOR

A deep dive into **Quantum Noir**

Allen Pierre-Louis

Based on the experience of Quantum Noir attendee Allen Pierre-Louis.
Interview by Logan White and Dr. Bill Wilson

In the crisp early Massachusetts summer air, students from across the country started walking across Cambridge Common and Harvard Yard, making their way to Harvard University's physics lecture hall, Jefferson Lab 250. Walking to their designated building, they could see a man clad in a black baseball jersey with piercing crimson lettering matching the location of the prestigious institution. The man in the baseball jersey adjusts his red and black Stanford cap every so often and points off to some physics graduate students from Harvard and MIT, sporting afros, curls and high top fades, similarly clad in black polo shirts with small crimson and white insignias across their upper right torsos. They hold signs pointing to the large wooden door entrance enshrined by old stone. The man in the baseball themed outfit is none other than Dr William "Bill" Wilson, the executive director for the Center for Nanoscale Systems (CNS) at Harvard. If one takes a look at the baseball team name splashed across his uniform, you will see in the Fenway Park-esque font that it isn't a sports team being referenced at all, but a scientific conference: "Quantum Noir 24".

What is Quantum Noir?

AT&T Bell Laboratories was once an industry titan in telecommunications. Throughout the 1970s until the 2000s, AT&T Bell Laboratories hosted an ecosystem full of bright minds and this included minority students deliberately introduced into their milieu through funded programs for black graduate students. Dr Bill Wilson himself was a summer student at Bell Labs in 1981, returned as a graduate student in 1982, came back in 1987 after finishing his PhD at Stanford University, and stayed well after until the year 2000.

Dr Wilson still takes inspiration from Bell Labs when running CNS at Harvard, often harkening back to their goals of "Understanding the Universe", "Connecting the World", "Managing Information", and "Advancing Sustainability", all key areas with Nobel Prize achievements attached. As such, Dr Wilson himself has had the honor of being invited to the Nobel Prize Award Ceremony in Stockholm, Sweden. The seamless integration of minority students into such a robust scientific infrastructure has yet to be repeated in the modern day. Dr Wilson wanted to address this issue by crafting an event highlighting emerging science in quantum applications.

Quantum Noir was created by Dr Wilson and combines cutting edge explorations and talks on physics and engineering by prominent professors from the likes of Harvard, MIT, Duke, University of Chicago, Dartmouth, and Berkeley, while also capturing the spirit of the Bell Labs program. One such talk was a virtual talk given by Moungi Bawendi of MIT who was one of the Chemistry Nobel Prize winners in 2023 for the advent of quantum dots. This conference was open to people from all institutions but also actively recruited from HBCUs and MSIs. Exposing students who are not traditionally around emerging technologies to the latest advances in the field was an important endeavor mentioned by Dr Wilson: "I realized the biggest need was that folks just didn't even know that the science existed."

Conference Proceedings

Students, postdocs, junior faculty, and others from institutions as diverse as Howard, UMBC, Jackson State, Florida Atlantic, Princeton, Yale, Stony Brook, Coppin State and more all enjoyed fellowship with students and faculty from across the country and from the local hosts at Harvard as most speakers attended in person. Particularly, students from the IBM-HBCU Quantum Center were well represented. The Harvard-MIT Chapter of NSBP helped make sure the conference ran smoothly in organizing and day to day activities, representing a major contribution of a local chapter of the organization. International students from the University of the West Indies, St. Augustine in Trinidad and Tobago and visitors from the UK also made the conference have some international representation. Of about 130 visitors, on the order of 100 were from HBCUs. The visitors were almost split between graduate students and undergraduate students, with postdocs and junior faculty amongst them.

The conference itself covered a variety of topics including quantum optics, quantum error correction and simulations, quantum computing hardware, laser physics, condensed matter physics, and bio-sensing. Some business advising experts and the startup team of Atlantic Quantum also gave presentations on how evolving markets are handling the quantum revolution through investment. A student poster session was also included where students got to introduce their research to a larger audience of both attendees and speakers and the larger Harvard community. The conference culminated in a private banquet at Harvard's Loeb House, located in Harvard Yard and managed by the Harvard Faculty Club. At this dinner, a virtual speech by the prolific Black American inventor, James "Jim" West was delivered. Jim West is responsible for more than 250 US and foreign patents, the most famous being for his co-invention of the foil electret microphone, the modern mic. West gave advice and expressed his pride in seeing his Bell Labs colleagues and students he's mentored become prominent scientists.

"I realized the biggest need was that folks just didn't even know that the science existed."

As of right now, CNS has a user base that is almost half Harvard users. Nano fabrication, electron microscopy and other ventures are explored at this large powerhouse of quantum research in the Northeastern US. Initiatives like Quantum Noir attempt to help pipeline students of color into these industries and disciplines, in addition to existing efforts like the CNS scholars program that had researchers from HBCUs, MSIs, and small schools conduct experiments at CNS. With regard to the modern landscape of science, Dr Wilson emphatically states: "Science is a contact sport…. At some level, you're expected to be productive at a level that requires you to have collaborators." This type of contact between researchers and students across institutions is facilitated through Quantum Noir.

What's next for Quantum Noir?

"..you had a lot of students exposed to science that they've never seen before," Dr. Wilson reflects. "But the other thing that was just as intriguing was that the faculty at Harvard and MIT, who were most of the speakers, they also got to see these kids from small schools, and they realized how bright they are."

With features from the Harvard Gazette and Boston Globe, Quantum Noir made a significant mark on the scientific community for its first rendition. The next conference is anticipated to take place in 2026, with locations still under discussion. The goal is to have student travel and lodging be free for students, like the first rendition of Quantum Noir. To that effect, Dr Wilson hopes to have venture capital be more represented at the next Quantum Noir. Biotechnology, bioelectronics, and medical sensing applications may also play a larger role.

"The reality is, the thing that you're probably going to be most excited about as a scientist probably hasn't even been invented yet!"

Dr Wilson plans on reaching out with regards to Quantum Noir at the 2025 NSBP-NSHP Annual Conference.

Interested in attending the next Quantum Noir? Look out for their social media campaigns and website:
https://sites.harvard.edu/quantum-noir/
Twitter/X: @Quantum_Noir

NSBP Student Council members Logan White and Gianni Sims, and NSBP student Hannah Wallace, attended STEMNoire from June 26-29, 2025. They were able to advertise NSBP, our fundraising activities, and got the existence of the organization into the public consciousness. STEMNoire is a black women's wellness conference for black women navigating careers in STEM. The Student Representative worked with the executive board of NSBP to secure travel funding for our students to attend. In addition, the Student Representative and the board of NSBP were able to fund the STEMNoire organization for this year's meeting. Our council attended talks and oral presentations that discussed individual research projects but also how to deal with workplace discrimination. Entrepreneurship talks were also given.

Many attendees did not know NSBP was an existing organization. Many had heard of NSBE and are members of NSBE. Our council members encouraged them to attend the NSBP-NSHP annual conference and assured them of the large crossover between those in both engineering and physics fields. This is one area we would do well to capitalize on.

-Allen Pierre-Louis

Chapter Corners

Students, we want to feature you! Each issue of W&P will include ***Chapter Corners***, which will highlight one of our NSBP chapters across the country. If your chapter is interested in applying for the Chapter Corners section for our next issue of Waves and Packets, email studentrep@nsbp.org or logan.white@nsbp.org to get started on the process.

Vector

Vector is the student-led, student-written column of Waves & Packets. Historically, *Vector* was an NSBP blog from over a decade ago. We're now continuing the tradition of letting NSBP voices shine through writing. Whether it's how to cook the best Thanksgiving turkey according to science, submitting instructions for a DIY experiment, navigating physics at a PWI, or giving us the scoop on being a physics major at an HBCU, we want to hear your stories!

We accept submissions from the current undergraduate, post-bacc, and graduate students of NSBP. Columns should be approximately 500-800 words in length.

Recent **publication or award**? **Job applications** you'd like to promote?

Have you or your lab recently published a paper? Recieved an award or recognition that you want to share with the NSBP community? Tell us about it!

We want to know about open positions you want to promote to NSBP members, from student-focused opportunities (REUs, internships, graduate programs and fellowships) to jobs in academia, industry, and beyond. We also welcome announcements regarding funding opportunities and awards.

Submit your content today!

Check out our Waves and Packets Submission Form by **scanning this QR code**, or reach out to our editorial team by contacting logan.white@nsbp.org and studentrep@nsbp.org.

UC SANTA BARBARA
Kavli Institute for Theoretical Physics

NATIONAL SOCIETY OF BLACK PHYSICISTS PRESENTS

INNOVATE SEMINAR

CO-HOSTED BY THE NSBP STUDENT COUNCIL

PROBABILITY-FIRST QUANTUM: FOUNDATIONS, FERMIONS, AND UNDERSTANDING QUANTUM TECHNOLOGY

DR. JAMES DANIEL WHITFIELD

THURSDAY, DECEMBER 4TH AT 4 PM ET

RSVP:

HTTPS://BIT.LY/INNOVATESEMINAR120425

Probability-First Quantum: Foundations, Fermions, and Understanding Quantum Technology

Abstract by Dr. James Daniel Whitfield

Quantum technology is advancing rapidly, but an intuitive understanding of its foundations remains elusive. This talk introduces a 'probability-first' framework that reframes quantum theory as a natural extension of probability. I will show how this perspective clarifies core concepts, guides the design of fermionic simulation methods, and helps define benchmarks for practical quantum advantage. Crucially, this framework provides a roadmap for training the next generation of quantum scientists and engineers by building directly upon their existing probabilistic intuition.

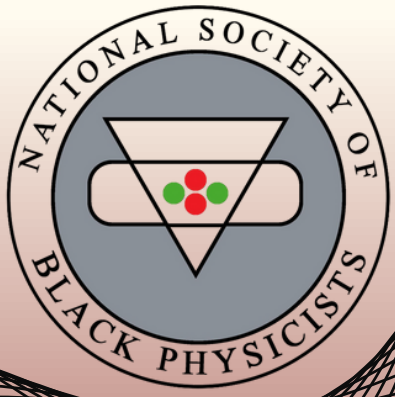
@NSBPINC

Waves & Packets

THIS COULD BE YOUR AD!

Waves & Packets is seeking advertisements from organizations interested in reaching the broader physics community through a interdisciplinary, multimedia publication.

Interested? Reach out to the W&P Team by contacting **studentrep@nsbp.org** today!


NATIONAL SOCIETY OF
BLACK PHYSICISTS