

PAUL GUÈYE NAMED 2022 EDWARD A. BOUCHET AWARD WINNER

Contributed by: FRIB communications

In 1876, Edward Alexander Bouchet became the first African American to earn a doctorate in physics and only the sixth person to graduate with a Ph.D. in physics from an American university. In 1994, the American Physical Society, or APS, established an annual award in his name to celebrate his legacy and the continuing contributions of physicists from underrepresented groups.

Last week, the APS announced that it has selected FRIB's Paul Guèye as the 2022 Edward A. Bouchet Award winner. APS recognized Paul for his "many seminal experimental contributions to understanding the structure of nuclear particles and decades of service to physics outreach, diversity and inclusion."

"I'm very appreciative of the selection committee and the team that nominated me," said Guèye, who is an associate professor of nuclear physics at FRIB, and in MSU's Department of Physics and Astronomy. "There are a lot of people out there doing awesome and exciting work, doing really great work that will advance the planet and humankind," said Paul. "I'm just really humbled that I was selected for this award."

Throughout Paul's career, he's developed tools and techniques to help understand the fundamental particles of nature and how they interact. He's also applied his skills and knowledge to medicine, developing technologies that are starting to be commercialized for use in cancer research.

"My contributions make me proud, like any other scientist, but that's not why we do it," he said. "We do science because we are passionate about it. We love being part of an experiment, discussing ideas in the hallway—a lot of it, we don't even think about. It's like waking up and eating breakfast. You just do it."

Similarly he understands the importance of outreach and inclusion. "As part of an underrepresented minority group, I feel like it's my duty to open doors for others," Paul said. But he also can't imagine a world in which he didn't do that. "I grew up in Africa and I was raised in an environment where everyone helps each other without thinking about it," he said. "I was raised in a family where helping others is what you do."

Paul earned his bachelor's and master's degrees in Senegal before earning his doctorate in France. He came to the United States as a postdoctoral fellow at Hampton University in Virginia in 1995 and would continue working there, rising to the rank of chair of the physics department in 2015. He officially joined FRIB as a faculty member in 2018, after he had worked at NSCL in 2012 as part of the MoNA Collaboration (MoNA stands for Modular Neutron Array). He's also a collaborating researcher with the Thomas Jefferson National Accelerator Facility in Virginia.

Through his research and professional associations, Paul has built a tremendous network. For example, he was president of the National Society of Black Physicists from 2012 to 2015. He was chair of the Liaison Committee for Under-Represented Minorities of the American Institute of Physics from 2015 to 2018. He was a co-founder and chair of the Women and Minority Subcommittee of the American Association of Physicists in Medicine. He is a coordinator for a Council of Historically Black Colleges and Universities Physics Department Chairs and he is a co-convenor of the Instrumentation and Detectors working group of the African Strategy for Fundamental and Applied Physics.

Ask him a question about any component of his work and he's quick to point out that he was part of a team, that his success was the team's success. It's hard to miss the joy and excitement in his voice talking about teamwork, especially on the outreach front, which features some of his earliest and longest-tenured teammates: his wife, Mornetka, and his daughter, Yannick (pictured below).



Paul has developed programs that help K-12 to doctorate students, especially from underrepresented groups, connect with science in a meaningful, sustained way. He said he's had success by essentially pilot testing ideas for those programs with his daughter as she grew up. "You can have the most fantastic idea on paper, but then it just crashes because they don't like it, because we didn't take the time to listen to them," Paul said.

Which highlights another critical element of Paul's approach to science and life in general. In working with others, there's so much to be learned not only in what's shared, but also what isn't. When something isn't going right in an experiment, a project or a relationship, Paul comes back to a simple question. "It's not always about this big impossible issue. It can be more about, 'What am I missing?'" he said. "What are we missing that we didn't do right?" So it's about constantly reinventing yourself and seeing how you can adapt."

When FRIB turns on in a number of months there are many unknowns and unanswered questions. Paul and the other FRIB scientific users will have a chance to test their understanding an approach in ways that were never possible before.

"So much will happen that we don't know about, that we can't anticipate. Of course, there are questions we have and answers we expect, which we're excited to explore. But there's another area of unknowns that you can only see once you turn the machine on," Paul said. "And it's not just about the fundamental science. There's an impact that FRIB will have at pretty much every level of society."

REA UPDATE

This week, ReA tested production of silicon beams using the batch mode ion source (BMIS) for a series of experiments in the experimental areas of the accelerator. Two different molecular forms were injected in the source. The samples were prepared in the MSU Department of Chemistry and involved special development to find the correct form to inject in the source. After an unsuccessful initial trial, a solution was found and beam of silicon-30 was produced in BMIS, identified and accelerated by ReA successfully, with intensities compatible with the science program needs. The tests will continue next week with the unstable isotope of silicium-32.

SEMINARS

- WEDNESDAY, NOV 03 AT 4:10 PM
1200 FRIB Laboratory and
[Online via Zoom, Passcode: 144743](#)
Jacquelyn Noronha-Hostler, University of Illinois Urbana-Champaign
'Heavy-ion Collisions 2.0: Insights into Nuclear Structure, the Smallest Droplet of Fluid, and Large Baryon Densities'
- FRIDAY, NOV 05 AT 4:00 PM
[Online via Zoom, Passcode: 933742](#)
Joseph Bonitati, FRIB
'Tentative Thesis Title: Quantum Computing for Nuclear Physics'

PLEASE NOTE: NEXT WEEK THE GREENSHEET WILL BE ON VACATION

EDITOR: ERIN O'DONNELL | 517-908-7198 | ODONNELL@NSCL.MSU.EDU
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