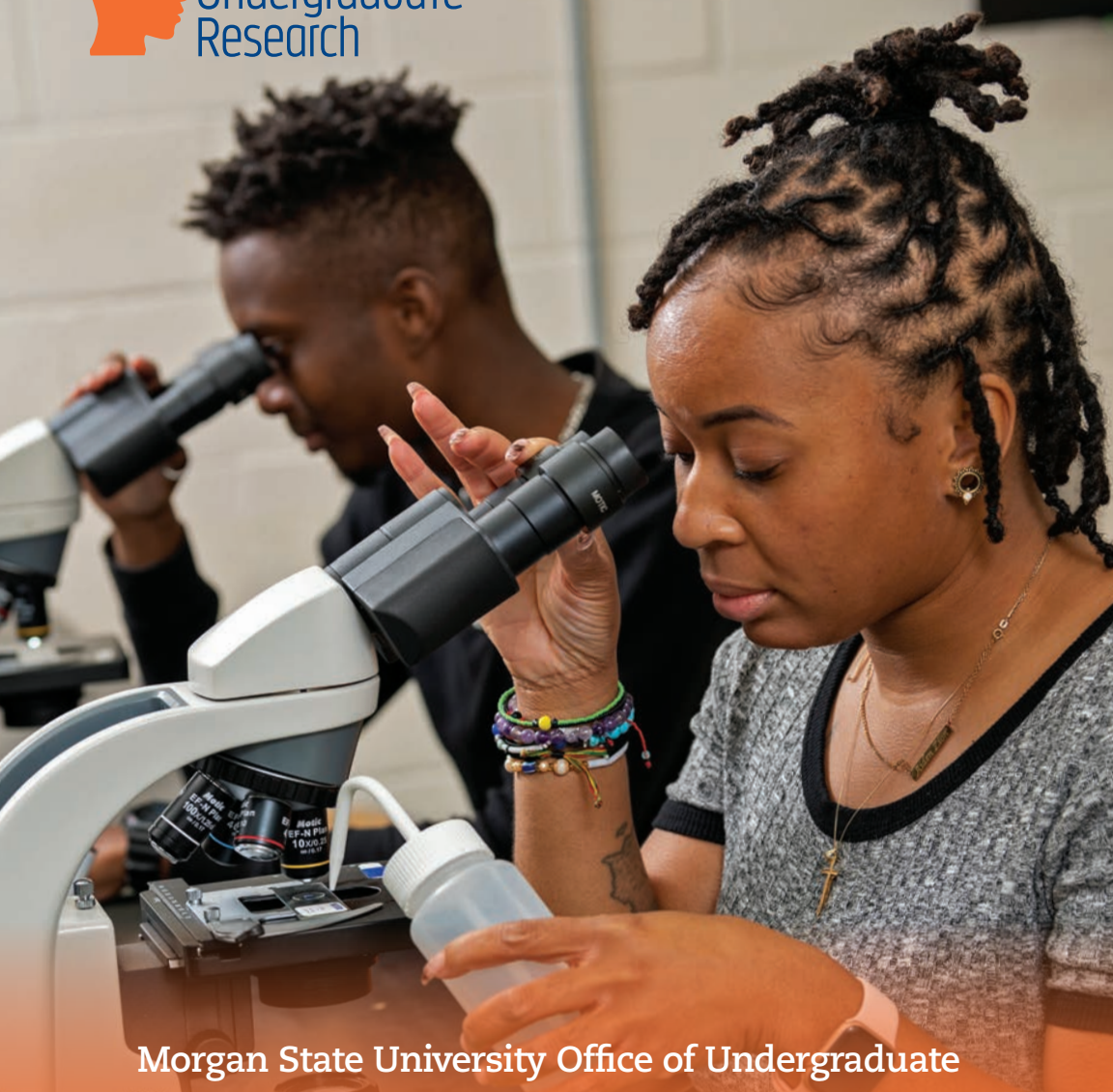


MORGAN™



Office of
Undergraduate
Research



Morgan State University Office of Undergraduate Research offers high-impact academic programming, experiential learning, and graduate school/career-readiness opportunities for all students at MSU who wish to enhance their education by engaging in undergraduate research.



As the Provost of Morgan State University, I am committed to the mission of introducing our students to applied research in as many majors, and in as many ways, as possible. In 2020, MSU established the university-wide Office of Undergraduate Research (OUR) under its inaugural director, Dr. Lisa Brown.

Engaging undergraduate students in research is a proven practice for student success and can increase retention and graduation rates. This is exemplified by the MSU undergraduate research program, funded by the National Institutes of Health, ASCEND. The success of ASCEND and other programs paved the way for the development of the comprehensive Office of Undergraduate Research.

Undergraduate research stimulates intellectual curiosity and provides a way for students to use discipline and creative thinking to solve real problems. In this endeavor, OUR has made an important contribution to the mission in a very short time. I applaud and congratulate Dr. Lisa Brown and her team for leading the way.

Hongtao Yu
Provost and Senior Vice President for Academic Affairs



A New Office. Emerging Researchers. Endless Possibilities.

In 2017 Governor Larry Hogan designated Morgan State University as Maryland's preeminent public research university. The designation was an honor, but, more significantly, the designation identified and put a name to the considerable research in which Morgan engaged long before 2017.

Research is meshed with academics in nearly all disciplines and degrees, extending beyond the science lab into liberal arts classrooms and the broader Baltimore community. This is especially important for students who may not have had research opportunities prior to joining MSU.

Recognizing the importance of training and supporting students early in their

academic and research careers, MSU created the Office of Undergraduate Research (OUR) in 2020. In doing so, Morgan joined a list of well-respected Maryland universities, including Johns Hopkins University (Hopkins Office of Undergraduate Research-HOUR) and the University of Maryland (Center for Undergraduate Research) — institutions that understood the potential of supporting undergraduates in STEM disciplines but also offered wider opportunities in social sciences, health, and more.

The Office of Undergraduate Research emerged from and built upon the successful MSU undergraduate initiative of ASCEND, A Student-Centered, Entrepreneurship Development Training Model. ASCEND, funded by the National Institutes of Health's Building Infrastructure Leading to Diversity (BUILD) Initiative,

incorporated research training, summer research institutes, and student presentations to the scientific and public communities. This model inspired and guided the Office of Undergraduate Research to expand research opportunities, training options, workshops, and faculty mentoring to all students, regardless of major, who aspired to research.

Now Morgan students with interests outside of biomedical research have the same opportunities to gain experience with impactful, quantifiable, and personally meaningful research through the Office of Undergraduate Research.

The support of faculty mentors, funding, and an accessible meeting place are essential ingredients for budding researchers to grow into innovative thinkers who can solve the challenging issues of the future.

OUR Student Researcher

Fiyinfolu Atanda

*BS, Sociology major, May 2022
Current: Dual degree master's program
in Social Work and Public Health,
University of Georgia*

Undergraduate research programs are excellent pathways for individuals, especially minorities, to explore and use their skills for advocacy." So says Fiyinfolu Atanda, a graduate of Morgan State University's Bachelor of Science in Social Work program.

Struggling just a bit to find her niche at first, Atanda discovered MSU's Student Research Center (SRC). Her experiences there made a significant impression and inspired her to engage in her own public health research. She focused on the social determinants of tobacco use and Electronic Nicotine Delivery Systems (ENDS) among youth and young adults. Using focus groups

and surveys, Atanda explored the knowledge, attitudes, and perceptions of individuals in Baltimore City aged 14–24 regarding tobacco products and ENDS. Her research project aimed to widen public awareness about how younger generations are influenced to use nicotine as well as how they gain access to such products.

Atanda says she was well prepared by MSU for her current dual-degree master's program in Social Work and Public Health at the University of Georgia. She still has access to MSU mentors and advisers from her undergraduate program. The wisdom of her professors, including Dr. Payam Sheikatari, Director of Prevention Sciences Research Center and Professor in the School of Community Health and Policy, combined with solid SRC training and support from the broader Morgan community created a sturdy foundation for Atanda's continued academic studies.



OUR Student Researcher

Kailyn Smith

*Senior, BS, Pre-Law Philosophy major,
Political Science minor and
Cohort 8 member, ASCEND Center
for Biomedical Research*

If the word "interdisciplinary" hadn't already been invented, Kailyn Smith would have invented it herself. With an affinity for humanities and social sciences and diverse interests that include physiology and formal logic, Smith is a multifaceted learner who embraces research methodology to create change and solve problems.

Specifically, she employs her interdisciplinary approach, which includes critical theory, disability studies, moral sentimentalism, and jurisprudence, to study the nature of emotions in underrepresented groups. Her goal is to shine a light on a world where caring for one another is incorporated into broader views of social engagement and law. Smith says, "We wouldn't be the professionals we are today without passion driving us or hesitation pulling us in certain directions. Recognizing the importance of ethics and the feelings of others in our everyday personal and professional decisions will encourage us to be more considerate of one another."

Smith is grateful to her mentors at Morgan, such as Dr. Daniel Brunson, Assistant Professor, Philosophy and Religious Studies, and Dr. Seth



Vannatta, Chair and Professor of Pre-Law, Philosophy and Religious Studies, who helped mold her into a voracious learner and budding philosopher. Their collective efforts provided her with the confidence to achieve as a student and researcher.

In addition, the newly created Office of Undergraduate Research (OUR) offered a designated and accessible place for emerging researchers. As Smith points out, undergraduate students have the potential to contribute to much-needed areas of study. Students can be taught the necessary tools of research and methodology. With University support in terms of advising, funding, and accessibility, she believes "the possibilities for success are endless for everyone involved."

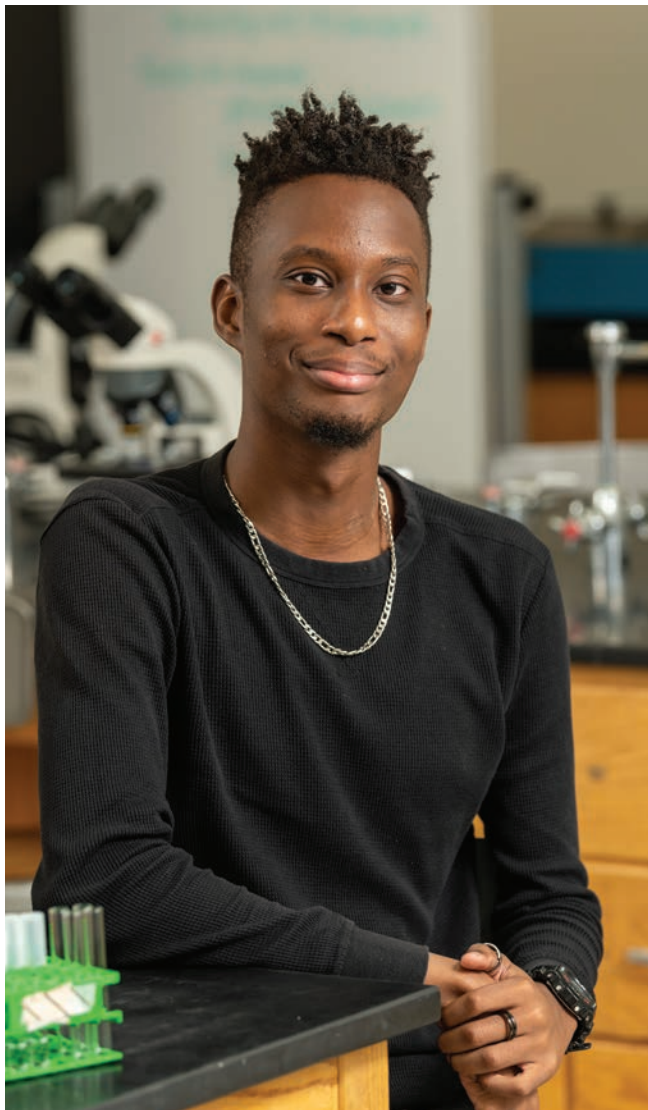
OUR Student Researcher

Jahari Nelson

BS, Biology, pre-professional medical track

Most people would be hard pressed to identify what a sarcomere is. And, no doubt, 'phosphorylation' would be an unlikely topic of conversation at a party. But Jahari Nelson knows what they mean and what they do. He has poured his heart into understanding their purpose and impact on human cardiac function.

Nelson explains, "Sarcomeres are the basic contractile units in cardiac and skeletal muscle and are what allow the heart to contract to pump blood and relax to be filled with blood. Phosphorylation is the addition of a phosphate molecule to proteins to make them usable for specialized tasks." Phosphorylation can activate, deactivate, or modify a protein — in this case, the sarcomeric protein. Using a transgenic mouse, Nelson found that hyperphosphorylation (too much) affects the heart's ability to relax and fill with blood, causing cardiac failure. It's a complex research project, and he is fortunate to have an excellent mentor and co-researcher in Dr. YueJin Li, MSU Assistant Professor of Biology, who is engaged in her own research on heart muscle dysfunction.



An international student from the Bahamas attracted by Morgan's HBCU status, Nelson says that "many undergraduate students are gifted and potentially ground-breaking researchers but lack the guidance and tools to reach their potential." The Office of Undergraduate Research fills that void by providing guidance, support, and mentors. Supported inquiry is the heart and soul of skillful research.

Partnerships and Programs

Johns Hopkins-HBCU Biomedical Engineering Pathway

a structured year-long internship program designed to demystify biomedical careers and prepare undergraduates for biomedical engineering research careers.

The Reverend Dr. Mankekolo Mahlangu-Ncgobo Inaugural Summer Fellowship

commemorates an influential MSU community activist and alumna. The fellowship leverages the collaboration of cross-disciplinary stakeholders to promote health equity for at-risk populations. The fellowship aims to create opportunities for students to work with accomplished faculty at the Johns Hopkins Center for Health Equity.

Johns Hopkins-Morgan State University Cancer Research Summer Program

a collaboration with the Sidney Kimmel Comprehensive Cancer Center, engages selected undergraduates in interdisciplinary summer research with faculty and/or physicians. The goal is to increase the pipeline of underrepresented students who aspire to careers in cancer research and/or oncology.

The Leadership Alliance, a national partnership between Minority Serving Institutions and Ph.D. granting institutions, has a mission to develop underrepresented students into outstanding leaders in academia as well as the public and private sectors. The Alliance provides research, mentoring, and networking experiences for undergraduate students.



National Institute on Drug Abuse, one of the 27 institutes and centers of the National Institutes of Health (NIH), is dedicated to understanding the causes, consequences, and treatment of substance use disorders. The NIDA Undergraduate Research Internship Program aims to further train, mentor, and prepare undergraduate students with strong interests in STEM for a career in addiction research.

The Vivien Thomas Scholars Initiative, a major effort by Johns Hopkins University to address historic underrepresentation in STEM. Funded by Bloomberg Philanthropies, the initiative provides permanent funding to 100 diverse PhD students in JHU's 30+ STEM programs and establishes and strengthens graduate pathways for students from HBCUs and Minority Serving Institutions to pursue PhDs. MSU is an inaugural partner.

University of Minnesota-Morgan State University Biomedical Engineering Pathway, a year-long structured internship program designed to prepare MSU undergraduates for biomedical engineering research careers.

Training and Professional Opportunities

Health Research Concepts Competition:

Participants receive step-by-step support to develop their concepts into meritorious abstracts with grant awards of up to \$5,000 per health-related research project.

Graduate and Professional Careers

Conference: Recruitment fair for STEM undergraduates (including social/behavioral sciences) to provide insight into the process of graduate and professional school application and matriculation as well as expose students to research, healthcare, and entrepreneurial career paths.

65 undergraduates participated

Diversity Postdoctoral Alliance

Committee HBCU Mentoring Program:

Initiative paired Johns Hopkins University postdoctoral students, graduate students, or medical residents with STEM undergraduates, particularly those interested in biomedical careers.

20 undergraduates matched with JHU mentors

PULSE (Presentations by Undergraduates in Life Science and Engineering):

Collaboration with Coppin State University and the Johns Hopkins University Department of Biomedical Engineering to create monthly seminars with students from each institution presenting faculty-mentored research.

5 undergraduates presented

Spring into Research Week: Annual Undergraduate and Graduate Research Symposium highlights hybrid programs incorporating academic, extramural training, and career opportunities.

41 undergraduates and 40 graduates participated

Research Ethics and Responsible Conduct of Research Training Workshops:

Two-part virtual training series with topics such as laboratory safety, data management, research integrity, and the significance of Institutional Review Board and Institutional Animal Care and Use approval prior to research.

Part 1: 55 undergraduate, master's, and doctoral students registered;

Part 2: 32 undergraduates, master's, and doctoral students registered

MEET OUR STAFF

Lisa D. Brown, Ph.D.

Director, Office of Undergraduate Research; Interim Chairperson and Associate Professor of Biology; Institutional Coordinator, The Leadership Alliance

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Shamara Murphy

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Attend a monthly

workshop in the Student Research Center, Spencer Hall 200.

Topics include:

- Career Development
- Graduate School/Post-baccalaureate Preparation
- Research Productivity & Presentations

Learn More: OUR@morgan.edu