

UMBC LOUIS STOKES ALLIANCE FOR MINORITY PARTICIPATION (LSAMP) YEAR IN REVIEW 2020-2021 Academic Report



WELCOME!

The UMBC LSAMP community welcomes you to our 2020-2021 Annual Report (August 2020 - July 2021). LSAMP participants have access to individualized advising, campus workshops, funded research experiences, and national and international conferences to strengthen their STEM identity and promote entry into top graduate programs.

This catalog serves to highlight and celebrate the accomplishments of our undergraduate participants, Research Fellows, and the staff and faculty who make the program successful each year.

UMBC LSAMP is funded by the National Science Foundation Award #1002566

UMBC LSAMP DIRECTOR'S MESSAGE

WRITTEN BY SUNDIATA "SUNJI" JANGHA - MR. J



2021 was A LOT. We all thought 2020 was unprecedented (a word that was thrown around so much that we all had to strain to remember what precedent looked like) and 2021 was just as tumultuous. And yet, our LSAMP Scholars are still here, whether they were thriving or surviving, they're still here. We are super proud of them all for persevering and staying on the journey in their own way.

This Year in Review highlights some of the achievements of this outstanding group of Scholars and Research Fellows, showcases the phenomenal work that they have been able to do despite everything else, and identifies the faculty and staff in the LSAMP community who make it happen. The Scholars have demonstrated a level of Grit that will serve them long after they have graduated from UMBC and gone on to find paths, blaze trails, and change the world. Thank you to all of the individuals, labs, programs, departments, colleges, and units that have continued to demonstrate a commitment and dedication necessary to make the UMBC LSAMP Program successful and continue to pour into our Scholars. To our Scholars, you pushed through another challenging year, continue to move forward, your greatness awaits... Now Go Be Great!

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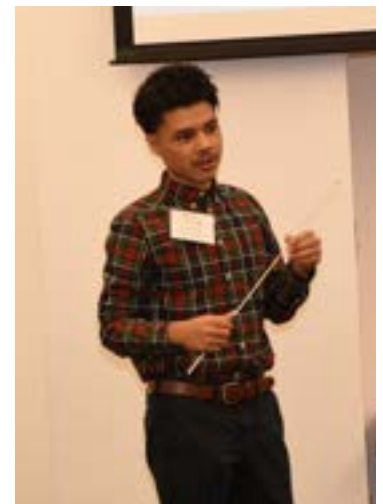
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UNIVERSITY SYSTEM OF MARYLAND'S LSAMP ALLIANCE

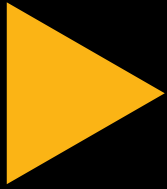


The Louis Stokes Alliances for Minority Participation (LSAMP) program assists universities and colleges in their efforts to significantly increase the numbers of students matriculating into and successfully completing high-quality degree programs in science, technology, engineering, and mathematics (STEM) disciplines in order to diversify the STEM workforce. Particular emphasis is placed on transforming undergraduate STEM education through innovative, evidence-based recruitment and retention strategies, and relevant educational experiences in support of racial and ethnic groups historically underrepresented in STEM disciplines: African Americans, Hispanic/Latino/a/x Americans, American Indians, Alaska Natives, Native Hawaiians, and Native Pacific Islanders.



THE LEGACY OF LOUIS STOKES

Congressman Louis Stokes (1925-2015) was the first Black member of the appropriations committee in the history of the House of Representatives. He felt a special obligation to utilize programs to help underrepresented minorities by arming talented young people with the opportunity of education to be the scientists and doctors of the future.



OUR STORY



The **University of Maryland, Baltimore County (UMBC)** has a strong tradition of developing STEM talent through the University System of Maryland Louis Stokes Alliance for Minority Participation (USM LSAMP) that began in 1995. Funded through an award from the National Science Foundation, the USM LSAMP is a senior alliance of three institutions. UMBC is the lead institution in partnership with long-time partners at the **University of Maryland, College Park (UMD)**, and the **University of Maryland Eastern Shore (UMES.)**

Further, we collaborate with Towson University, Prince George's Community College (PGCC), Montgomery College (MC), Anne Arundel Community College (AACC), and the Community College of Baltimore County (CCBC) to offer programming to promote persistence and a strong sense of STEM identity. We build foundations for mentoring for the next generation of leaders through the following pillars of STEM Identity: Sense of Community, Strength-based approaches, and Institutional Culture Shift.

Where Have Our Students Taken Their Talents?



**FELLOWS
ACROSS
BORDERS**



Graduate Programs



Research Experience for Undergraduates

**Ogechi Elemuo '21,
Fulbright Fellow,
Montenegro**



**Yianni Karabatis '21,
Fulbright Fellow,
Greece**



**Fayo Ojo '20,
Visiting Fellow,
Munich, Germany**



USM ALLIANCE-WIDE EVENTS

USM LSAMP SUMMER BRIDGING CONFERENCE AUGUST 14 - 15, 2020

The virtual Summer Bridging Conference is offered to students across the Alliance. It provides new students (incoming first-year and transfer students) with key information and resources to prepare them for success as they transition to their new institutions. Sessions offer a mix of voices offering insight to the students for their future success. Topics discussed included: exploring students' STEM identity, the importance of community, things to know during the first year, time management, and academic success in the first semester.



MC- Dr. Tracy Bell
Associate Professor, Natural Sciences,
University of Maryland, Eastern Shore
(UMES)



Time Management for the 4.0
Dr. Marquita Qualls
Leadership Coach/Founder,
Entropia Consulting, Inc.



Welcome to USM LSAMP
Rosemary Parker
Director, Center for Minorities in
Science and Engineering
University of Maryland, College Park
(UMD)



**Things That You Need to Know During
Your First Year**
Dr. Jarred Young
Keystone Instructor
University of Maryland, College Park
(UMD)



**The Importance of Community:
You Are Not Alone**
*My Letter to Myself: What I Wish I Knew
Coming In*
Olumide Fagboyegun (UMBC),
David Boutin, Sr. (UMCP),
Renece Skeen, Sr. (UMES),
Alejandra Chavez, Sr. (Towson)



Dr. Delana Gregg
Director
Academic Learning Resources,
Assessment and Analysis
University of Maryland, Baltimore County
(UMBC)



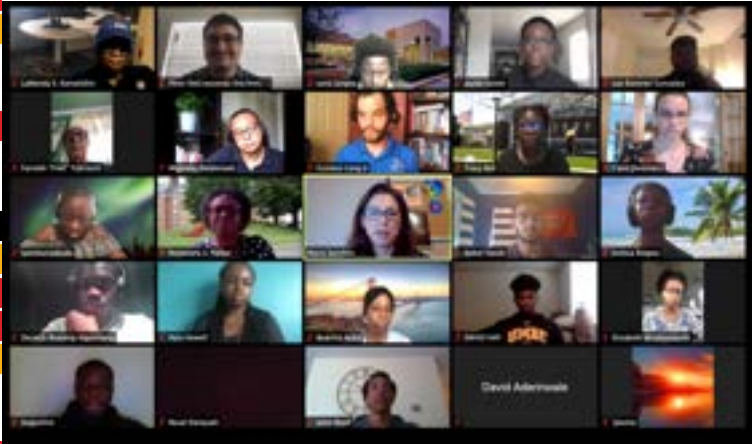
**Finding your Voice: Racial Justice and
Social Responsibility in STEM**
Dr. Maria Sanchez
Director of Education and Outreach,
University of Maryland, Baltimore County
(UMBC)



Mentoring Session: I Am... I Will...
Dr. Daniel Jean
Executive Director of EOF and Academic
Development, EOF and Academic Success,
Montclair State University

USM ALLIANCE-WIDE EVENTS

USM LSAMP SUMMER BRIDGING CONFERENCE



“

The USM LSAMP Summer Bridging Conference was a great way to introduce me to research experiences and see the different opportunities I can have. The LSAMP community positively impacts my communication and writing skills to prepare me for professional opportunities. They were also the reason why my transition to UMBC was a smooth one. They care for our success in both research and academics. I enjoyed my time at the USM LSAMP Summer Bridging Conference and highly recommend it to my peers.

”

AUGUSTINE OBISESAN '24

Students were presented with information about their campus, specific ways to seek out and get support, academic or otherwise, extracurricular opportunities (via current student organization leaders), and tips and tricks to navigate the first few weeks of class (via testimonies from current students that participated in the bridging conference the year before).

USM ALLIANCE-WIDE EVENTS

USM LSAMP SUMMER BRIDGING CONFERENCE DEANS' TOWN HALL MEETING

The USM LSAMP community is grateful to each of the Deans and their commitment to transforming undergraduate STEM education.



Moderator: Dr. Janet Rutledge

*Vice Provost and Dean of the Graduate School
UMBC*

Dr. Rutledge has served as the Vice Provost and Dean of the Graduate School at UMBC since 2009. She is also a faculty member in the Computer Science and Electrical Engineering Department. Under Dr. Rutledge's leadership, the Graduate School at UMBC manages the full "lifecycle" of a graduate student from recruitment and admissions to progressions and graduation. During her tenure she created the graduate student development unit that manages their diversity, retention, and completion activities.



Dr. Keith Bowman

*College of Engineering and
Information Technology (COEIT)
UMBC*

Dr. Bowman was appointed Dean in 2017. Under his leadership, COEIT introduced faculty and staff awards programs, a laboratory renewal program, a grant-writing support program, undergraduate and graduate councils, and a staff advisory group.



Dr. William LaCourse

*College of Natural and
Mathematical Sciences (CNMS)
UMBC*

Dr. LaCourse has served as Dean since 2012. Dr. LaCourse has lead programs such as STEM BUILD and the AGEP Alliance State System Model to Transform the Hiring Practices and Career Success of Tenure Track Historically Underrepresented Minority Faculty in Biomedical Sciences.



Dr. Moses Kairo

*School of Agricultural and
Natural Sciences
UMES*

Dr. Kairo was appointed Professor and Dean of the School of Agricultural and Natural Sciences at UMES in 2012. As Dean, Dr. Kairo is responsible for administering academic programs as well as the research and extension programs in the school.



Dr. Robert Briber

*A. James Clark School of
Engineering
UMD*

Dr. Briber is the Associate Dean for Research in the A. James Clark School of Engineering and a Professor in the Materials Science and Engineering at the UMD. Under Dr. Briber's leadership the Clark School's research expenditures reached their highest level in history.



“

”

I transferred to UMBC in the Spring of 2018 and learned about LSAMP and the McNair Scholars program. I never had an engineering internship experience and attended the BEYA conference to secure a summer internship with the Army Research Lab. LSAMP helped me develop meaningful relationships with my peers and faculty mentors.

- Jonathan Bolaños '21 -

STUDENT SHOWCASE

Jonathan Bolaños '21

Mechanical Engineering



UMBC Affiliations:

McNair Scholar, REM 28 & Ambassador

National Awards:

GEM Fellow

Grad School Support:

STEM ALL IN Fellow

Jonathan is currently pursuing a Ph.D. in Mechanical Engineering at Clemson University.

Summer Research Experience

Jonathan interned with the Army Research Lab and worked on materials in the structure of a helicopter to detect micro-cracks and defects. The following summer, Jonathan worked on a project using micro electric propulsion engines that can be used in drones.

As a research intern at NASA, Jonathan collected data from instruments onboard 8 spacecraft satellites, used to discover various characteristics of the earth. In this role, he would find gaps or disruptions in the data based on atmospheric, sea-level, and gas-level changes.

Research at UMBC

Jonathan worked with the Atmospheric Lidar Group under the direction of Dr. Belay Demoz. He analyzed small particles and particulate matters in the Baltimore area.

USM ALLIANCE-WIDE EVENTS

4TH ANNUAL USM LSAMP UNDERGRADUATE RESEARCH SYMPOSIUM

The 4th annual USM LSAMP Fall Research Symposium was virtual and took place the following Spring semester due to the constraints of the pandemic. Students presented their research through an oral or poster presentation and recorded their talks via the VoiceThread platform. We are so proud of our students for adapting to the virtual presentation format and doing exceptionally well. As part of the Symposium, over 100 students participated in the Graduate School Resource Fair, networked with graduate schools, learned about summer research opportunities, and graduate school funding. There were 25 judges reviewing all 49 presentations, which included 5 oral presenters and 44 poster presenters. Students used this opportunity to bolster their presentation skills and refine their content. We invited representatives from LSAMP institutions in the region and other local graduate programs to participate as exhibitors and judges. This expanded to include both the Meyerhoff Graduate Fellowship Program, STAR-PREP post-baccalaureate program, and the NSF-funded international research initiative through the Organization of Tropical Studies.

Student Slide Presentation Winners



Ogechi Elemuo

2



Stephanie Akanoh



Alexandria Udenkwo

3

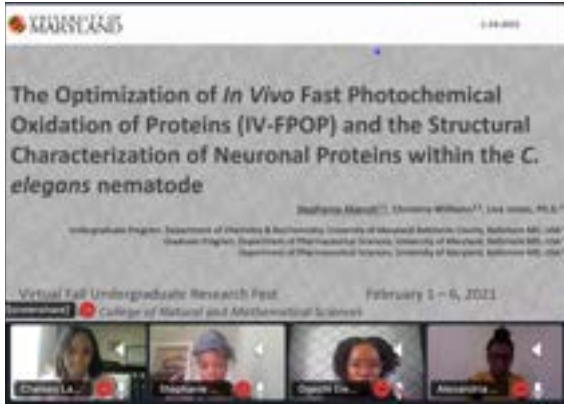
44 Poster Presentations

5 Oral Presentations

USM ALLIANCE-WIDE EVENTS

4TH ANNUAL USM LSAMP UNDERGRADUATE RESEARCH SYMPOSIUM

Poster and Oral Presentation Award Recipients



Stephanie Akanoh

Biochemistry, '21

Research Mentor: Dr. Lisa Jones

"The Optimization of In Vivo Fast Photochemical Oxidation of Proteins (IV-FPOP) and the Structural Characterization of Neuronal Proteins within the C. elegant nematode"



Ogechi Elemuo

Biological Sciences, '21

Research Mentor: Dr. Weihong Lin

"Examination of Vanillin Flavor in E-Liquid on Mouse Models using Comparative Chemosensory Behavioral Experimentation"



Isabella Salguero Céspedes

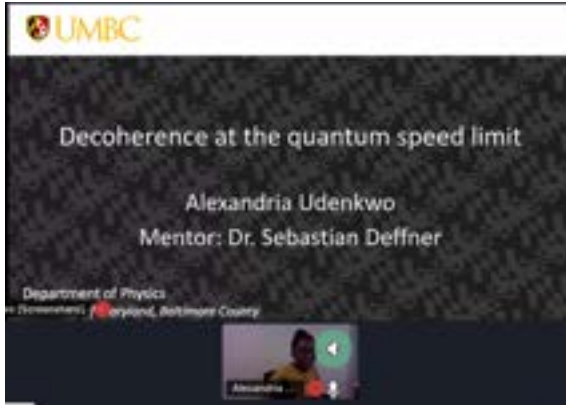
Biological Sciences, '22

Research Mentor: Dr. Fernando Vonhoff

"Effects of the UV-Filter Octocryline in Drosophila"

4TH ANNUAL USM LSAMP UNDERGRADUATE RESEARCH SYMPOSIUM

Poster and Oral Presentation Award Recipients



Alexandria Udenkwo

Physics, '22

Research Mentor: Dr. Sebastian Deffner
"Decoherence at the Quantum Speed Limit"



Frances Watson,

Computer Science, '21

&

Tobi Majekodunmi,

Mechanical Engineering, '22

Research Mentor: Dr. Helena Mentis
"COVID-19 Telehealth and Telerehabilitation Reflections: Identifying Socioeconomic Disparities and Formulating Design Recommendations to Improve Remote Stroke Rehabilitation"

4TH ANNUAL USM LSAMP UNDERGRADUATE RESEARCH SYMPOSIUM

Distinguished Speaker Presentations



Rachel Brewster, PhD

Associate Professor, UMBC

Dr. Rachel Brewster is an Associate Professor in the Department of Biological Sciences at UMBC. The long term goal of her research is to understand how the central nervous system (CNS), which includes the brain and spinal cord, are assembled during embryonic development. Dr. Brewster's laboratory has provided a model for the cellular basis of neurulation, that may explain how the neural tube forms in the caudal region of humans.



Quincy Brown, PhD

Co-Founder, blackcomputeHER

Quincy Brown is a Senior Director for Innovation Research at AnitaB.org. Previously, she was a Program Director for STEM Education Research at the American Association for the Advancement of Science (AAAS) and has also served as a Senior Policy Advisor in the White House Office of Science and Technology Policy (OSTP). She is a leader in STEM and Computer Science education and workforce development in PK-20 and has been supporting black women and girls in computing for nearly two decades.

4TH ANNUAL USM LSAMP UNDERGRADUATE RESEARCH SYMPOSIUM

Workshop Series Presentations

In partnership with PROMISE: Maryland's Alliance for Graduate Education and the Professoriate (AGEP), USM LSAMP hosted a series of professional development and career readiness workshops, including topics on the job and internship search, networking, and wellness.



Conducting a Job or Internship Search in This Virtual World

Christina S. Sessoms

Graduate Assistant
Department of American Studies
University of Maryland, College Park
(UMD)



Dr. Susan C. Martin

Program Director
PhD Career Development
University of Maryland, College Park
(UMD)



Everything You Wished You Knew About Networking

Dr. Marisa Franco

Assistant Clinical Professor
University of Maryland, College Park
(UMD)



Wellness - Treats, Threats, and Connections

Dr. Alfreda James

Assistant Director
Graduate Students & Postdocs
Stony Brook University



USM ALLIANCE-WIDE EVENTS

THANK YOU TO OUR SYMPOSIUM EXHIBITORS!



UMBC



RUTGERS

Graduate School | Newark



JOHNS HOPKINS

WHITING SCHOOL
of ENGINEERING



UNIVERSITY of MARYLAND
SCHOOL OF MEDICINE

UCDAVIS
GRADUATE STUDIES



THE GRADUATE SCHOOL



VANDERBILT
SCHOOL OF ENGINEERING

NC STATE
UNIVERSITY



“

In 2018 I went to the USM LSAMP Summer Bridging Conference hosted by Dr. Renetta Tull to learn more about conferences, funding, and LSAMP. The following Fall semester, I went to the LSAMP office to learn more about conference funding. Through LSAMP I received funding for the Annual Biomedical Research Conference for Minoritized Students (ABRCMS), which was my first research conference experience. This was pivotal and exposed me to graduate programs and research scientists. At ABRCMS I met UMBC alum, Dr. Kafui Dzirasa. LSAMP continued to help me navigate UMBC, internships, and the graduate school application process. I was encouraged to apply for the ENDURE Program at Washington University at St. Louis, which is related to my graduate work. With LSAMP, I realized the importance of mentorship in my personal and professional development. I was provided the space to prioritize mental health and learned not to compromise this aspect of my life.

”

- Olumide Fagboyegun '21 -

STUDENT SHOWCASE

Olumide Fagboyegun, '21

Biological Sciences



UMBC Affiliations:

Meyerhoff, MARC U-STAR/U-RISE,

National Awards:

Goldwater Scholar, NSF GRFP

Grad School Support:

Herchel Smith Graduate Fellowship, Graduate Prize Fellowship

Olumide is currently pursuing his PhD in Neuroscience at Harvard University.

Summer Research Experience

Olumide interned at the University of Minnesota where he worked on a novel mouse model to determine how expression and localization of heat shock proteins change with age. The following two summers, in 2019 and 2020, Olumide did research at Washington University at St. Louis. Here, he characterized the role of neuronal inhibition on Amyloid- β ($A\beta$) protein production and clearance, to study changes in hippocampal $A\beta$ in a mouse model of Alzheimer's Disease. In 2021, Olumide was a summer intern at Cerevel Therapeutics where he identified several potential biomarkers associated with idiopathic and genetic forms of Parkinson's Disease.

Research at UMBC

Olumide worked under the guidance of Dr. Erin Green where characterized the interactions of a putative lysine methyltransferase, Set6, with the prefoldin chaperone complex to understand how regulation of actin, is achieved in eukaryotic cells.

USM ALLIANCE-WIDE EVENTS

UMD 15TH ANNUAL WINTER STUDENT LEADERSHIP RETREAT

The Community College Track provided students with insight and support to prepare them for their transition to a four-year institution. 31 community college students from Montgomery and Prince George's Community Colleges were invited to attend the LSAMP Community College Track. The community college attendees received the benefits of interacting with other community college students, networking with students from various four-year institutions in the metropolitan DMV area, as well as received insight from upperclassmen from those four-year institutions.



Resume Writing for College Students

Engineering Co-op and Career Services—A. James Clark
School of Engineering



Interview Tips Panels

Amazon | Lockheed Martin | Northrop Grumman
| W. L. Gore

Building a Powerful Network

W.L Gore



Leadership Principles

Amazon



Shark Tank

Lockheed Martin



The Power of Advanced Degrees

Northrup Grumman

UMD 15TH ANNUAL WINTER STUDENT LEADERSHIP RETREAT



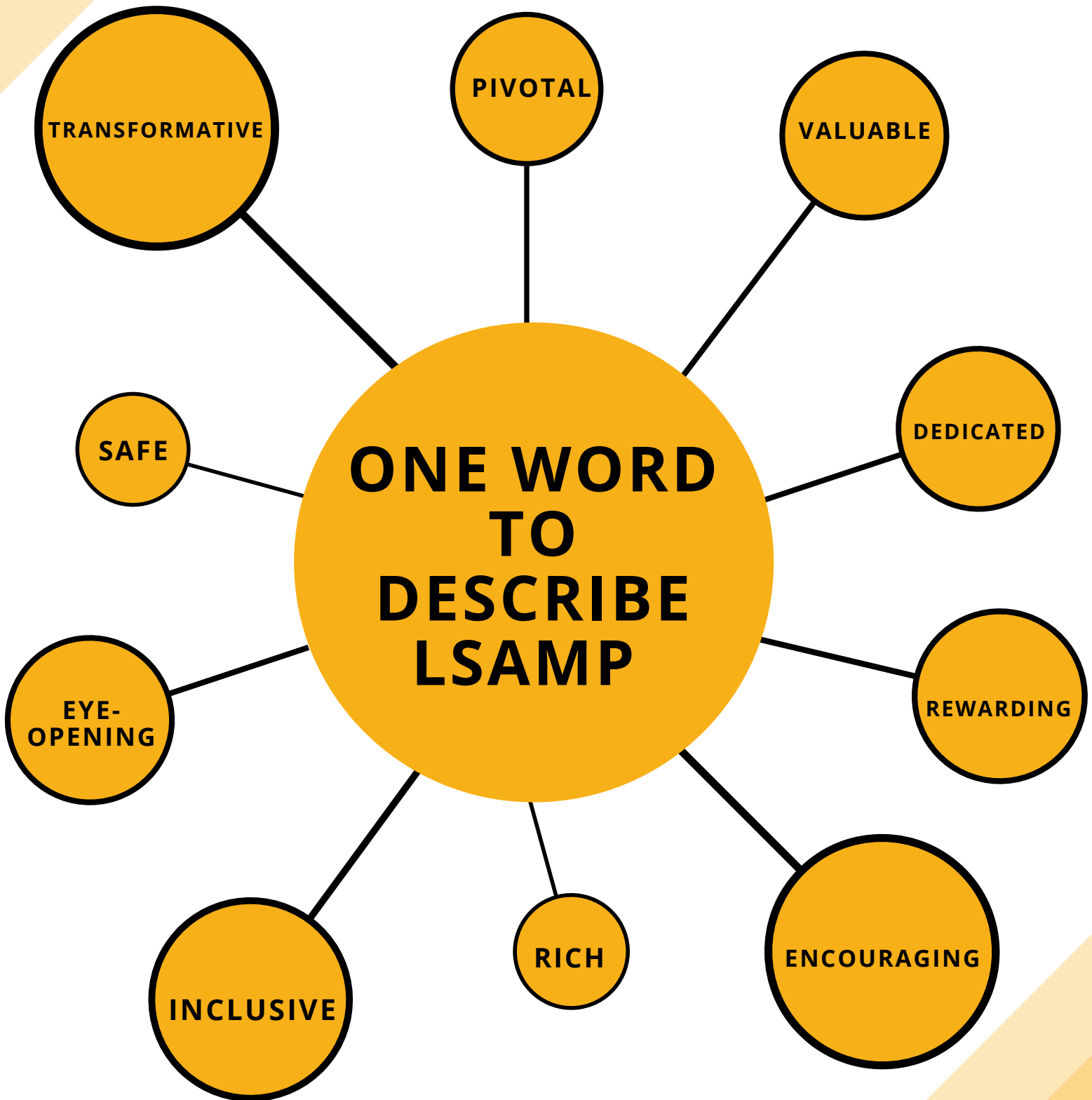
Highlight: Dr. Kelli McCants-Price
"What to Expect from Faculty"

Dr. Kellie McCants-Price emphasizes the importance of an open learning environment wherein questions, comments, and interactions from students are encouraged. Both students and faculty members have a duty to be courteous, civil, and respectful in the interactions with one another.



LET'S HEAR FROM OUR FELLOWS!

Students reflect on their
LSAMP experiences and the
program's impact on their
personal, academic, and
professional goals.





“

”

I gained valuable research experiences through LSAMP and for the first time was introduced to human computer interaction, which relates to my current graduate work. I had the opportunity to attend and present at conferences, such as the GEM Grad Lab, and am now a GEM Fellow. LSAMP took me out of my comfort zone and challenged me. I was on workshop panels which has promoted my personal and professional growth. I was motivated and pushed to be a stronger researcher, leader, and scholar. I am very grateful for the support from Peter, Mr. J, and the LSAMP community. We truly have a family dynamic.

- Aaleyah Lewis '21 -

STUDENT SHOWCASE

Aaleyah Lewis, '21

Computer Science



UMBC Affiliations:

*McNair Scholar, CWIT
Affiliate,*

National Awards:

*GEM Fellow, ARCS
Foundation Scholar,*

Grad School Support:

*College of Engineering
Dean's Fellowship*

Aaleyah is currently pursuing her PhD in Computer Science and Engineering at the University of Washington.

Summer Research Experience

Aaleyah did summer research at Cornell University where she helped develop a chrome extension to mediate conflicts on Reddit. She generated and analyzed toxicity scores for comments on Reddit to identify trends of toxicity within conversations. The following summer, Aaleyah did research at Stanford University where she used Python to analyze and track virtual reality experience data from participants. Aaleyah also completed an internship through her GEM fellowship, with the Oak Ridge National Lab. Here, she developed an interactive web application to assist cyber analysts in detecting anomalous behaviors on machines.

Research at UMBC

Aaleyah worked in the Human Computing Interactions lab under the direction of Dr. Helena Mentis where she worked on telehealth research. Later, Aaleyah worked in the Human Robot Interaction lab under the guidance of Dr. Cynthia Matuszek.



OUR VILLAGE

Because it takes a village..

CAREER AND LIFESTYLE DEVELOPMENT STAFF

Susan Hindle

Assistant Director of Internships and Employment,
UMBC



Susan Hindle joined UMBC in December 2013 as part of the Career Center's Internship & Employment team. She brings more than 10 years of experience in career development in higher education. She has expertise assisting individuals in all phases of the career development process. Susan has worked with the LSAMP program for over 2 years and is the primary instructor of the University's internship, cooperative education, and research practicum course (PRAC 98) for our LSAMP students. She provides support for workshops, presentations, and professional skill development. We are very happy to have Susan in our corner!



Dr. Karolyn Babalola

Senior Lead Engineer, Booz Allen Hamilton
Wellness Coach, UMBC



Dr. Karolyn Babalola is an innovator, teacher, yogini, and learner. She is currently a Senior Lead Engineer at Booz Allen Hamilton leading AI-based Natural Language Processing (NLP) technology development. She completed her M.S. and Ph.D. in Electrical and Computer Engineering at the Georgia Institute of Technology. She received her B.S. in Computer Engineering at the University of Maryland Baltimore County, where she was a Meyerhoff Scholar. Dr. Babalola lays the foundational knowledge on mindfulness and takes students through a series of engaging activities.



LSAMP CHAMPIONS



Malika Hiyam '22

Major: Biological Sciences and Modern Languages and Linguistics with a Spanish Concentration

Hobbies: Fashion styling, learning languages, watching Netflix shows, home interior decor

Quote: "As an LSAMP champion I enjoy sharing my experiences throughout my undergraduate career so that new LSAMP students know the amazing opportunities that are out there waiting for them."



Nithya Navarathna '23

Major: Biological Sciences & Computer Science,

Hobbies: Trying out new vegan baking recipes and singing

Quote: "Being an LSAMP Champion has allowed me to give back to a community that gave and continues to give me so much. From professional development support to forming great relationships with diverse people in my community, the LSAMP experience has significantly impacted my undergraduate experience at UMBC positively!"



Chinyere Sloley '23

Major: Computer Science - Cybersecurity Track

Minor: Math

Hobbies: Hiking, entrepreneurship, cooking, spending time with friends

Quote: "I truly enjoyed being an LSAMP Champion. I was able to network with people in STEM with similar goals and aspirations. I gained essential leadership skills. I also was able to give back to the LSAMP community by sharing my research journey here at UMBC and LSAMP's assistance throughout it."

UMBC FRIENDS OF LSAMP

Fulbright Fellowship Program Staff



Dr. Brian V. Souders

Advisor



McNair Program Staff



Michael Hunt

Program Director



Antoinette Newsome

Coordinator



Meyerhoff Scholars Program Staff



Keith Harmon

Director,
Recruitment and
Retention
Graduate and
Professional School
Placement



Mitsue Wiggs

Assistant Director,
1st and 2nd Year
Academic Advising
Liaison to
Academic
Departments



Ivanna Abreu

Program
Coordinator,
3rd and 4th Year
Academic Advising
Professional
Development



STEM BUILD Program Staff



Justine Johnson

Director, STEM BUILD
and
Associate Director,
Meyerhoff Graduate
Fellows Program



Meika Samuel

Program Specialist



U-RISE Program Staff



Jacqueline King

Associate Program
Director
Associate Director,
MARC Program



Mary Carole Jorgensen

Program Management
Specialist

UMBC-WIDE VIRTUAL EVENTS

CHECK OUT OUR VIDEOS FROM YouTube



LINK!



FALL 2020 RESEARCH FELLOWSHIP PROGRAM



The Research Fellows program offers STEM students at UMBC, UMEs, Towson, and community colleges the opportunity to participate in a funded research experience within the University System of Maryland. Students conducted scientific research under the supervision of a faculty mentor for 8-10 hours per week. All aspects of the program (research, professional development workshops, conferences, reflections) were designed to lead to an increase in the numbers and academic competitiveness of underrepresented minority undergraduates who are graduate school-ready as they transition to graduate programs.

Name and Class | Major | Topic | Faculty Mentor | University

- Stephanie Akanoh '21 | Biochemistry and Molecular Biology | Neuropharmacology | Dr. Lisa Jones | UMBC
 Cean'e Batten '21 | Geography & Environmental Studies | Conservation Ecology | Dr. Chris Hawn | UMBC
 Bethel Beyene '22 | Biological Sciences | Molecular Biology | Dr. Michael Summers | UMBC
 Tamia Bowers '23 | Mechanical Engineering | Thermoelectric Materials | Dr. Deepa Madan | UMBC
 Ayushi Dave '21 | Biology | Cell Biology | Dr. Michelle Starz Gaiano | UMBC
 Jeannine Dizon '23 | Biological Sciences | Nanotechnology | Dr. Dipanjan Pan | UMBC
 Juvet Ebai '21 | Biological Sciences | Cancer Biology | Dr. Achuth Padmanabhan | UMBC
 Star Fernandez '23 | Biochemistry and Molecular Biology | Cancer Biology | Dr. Charles Bieberich | UMBC
 Kayla Fomengia '23 | Biological Sciences | Conservation Ecology | Dr. Chris Hawn | UMBC
 Janae Gordon '22 | Biological Sciences & Psychology | Neuroscience | Dr. Weihong Lin | UMBC
 Sahaadat Hamed-Owens '23 | Chemical Engineering | Biomaterials & Tissue Engineering | Dr. Jennie Leach | UMBC
 Kate Kadji-Tedjeu '22 | Interdisciplinary Studies- Biology | Developmental Biology | Dr. Fernando Vonhoff | UMBC
 Aaleyah Lewis '21 | Computer Science | Robotics | Dr. Cynthia Matuszek | UMBC
 Isabella Lopez '23 | Computer Science | Neural Engineering | Dr. Fow-Sen Choa | UMBC
 Tobi Majekodunmi '23 | Mechanical Engineering | Telehealth and Telerehabilitation System | Dr. Helena Mentis | UMBC
 Luz Martinez | Biological Sciences and Psychology | Developmental Biology | Dr. Fernando Vonhoff | UMBC
 Jarod Mendoza-Tingem '22 | Mechanical Engineering | Thermoelectric Materials | Dr. Deepa Madan | UMBC
 Kai Morton '22 | Information Systems | Data Analytics | Dr. Jianwu Wang | UMBC
 Nithya Navarathna '23 | Biological Sciences and Computer Science | Cancer Biology | Dr. Achuth Padmanabhan | UMBC
 Aaron Ogbennah '22 | Biology | Biochemistry | Dr. Clare Muhoro | Towson University
 Isabela Salguero Céspedes '23 | Biological Sciences and Chemistry | Neuroscience | Dr. Fernando Vonhoff | UMBC
 Chinyere Sloley '23 | Computer Science | Signal processing systems | Dr. Shuvra Bhattacharyya | UMBC
 Ndeh Tadzong '23 | Biological Sciences | Structural Biology | Dr. Michael Summers | UMBC
 Alexandria Udenkwo '22 | Physics & Mathematics | Quantum Physics | Dr. Sebastian Deffner | UMBC
 Laura Ventura '22 | Biology | Developmental Biology | Dr. Fernando Vonhoff | UMBC
 Frances Watson '21 | Computer Science | Telehealth and Telerehabilitation System | Dr. Helena Mentis | UMBC
 Cameron Weaver '21 | Biology | Biochemistry | Dr. Vonnie Shields | Baltimore City Community College

SPRING 2021 RESEARCH FELLOWSHIP PROGRAM



Research fellows participated in activities aimed to strengthen their STEM identity and bolster the required knowledge, skills, competencies, and dispositions they will need for educational and professional success in STEM fields. Activities included literature reviews, annotated bibliographies, and learned ways to develop a strong foundation of knowledge for when they can return to labs safely. Nine students participated in the program. Students were still able to prepare and submit advisor-approved scientific reports.

Name and Class | Major | Topic | Faculty Mentor | University

Michael Abrahams '22 | Biological Sciences | Cell Biology | Dr. Erin Green | UMBC
Susan Afolabi '21 | Biology | Cell Biology | Dr. Michelle Starz Gaiano | UMBC
Stephanie Akanoh '21 | Biochemistry and Molecular Biology | Neuropharmacology | Dr. Lisa Jones | UMBC
Bethel Beyene '22 | Biological Sciences | Molecular Biology | Dr. Michael Summers | UMBC
Ayushi Dave '21 | Biology | Cell Biology | Dr. Michelle Starz Gaiano | UMBC
Sergio Diaz '23 | Physics and Math | Quantum Mechanics | Dr. Jason Kestner | UMBC
Juvet Ebai '21 | Biological Sciences | Cancer Biology | Dr. Achuth Padmanabhan | UMBC
Star Fernandez '23 | Biochemistry and Molecular Biology | Cancer Biology | Dr. Charles Bieberich | UMBC
Janae Gordon '22 | Biological Sciences & Psychology | Neuroscience | Dr. Weihong Lin | UMBC

“Through engaging in research experiences, I learned that I was resilient and that I could be optimistic most of the time. I have developed ways that I can keep myself motivated when doing challenging work. Additionally, I have learned to ask for help when I needed it and not to feel embarrassed to do so. In the future, I will continue to motivate myself in school and work in order to continue to perform well.”

- Excerpt From A Mechanical Engineering Major '23 Research Reflection -

SUMMER 2021 RESEARCH FELLOWSHIP PROGRAM

44 Research fellows conducted scientific research under the supervision of a faculty mentor for at least 20 hours per week. The fellows prepared and submitted advisor-approved scientific reports, and will present their research via an oral presentation or poster presentation at the 5th Annual USM LSAMP Research Symposium in December 2021. During the summer, fellows attended a virtual two-hour orientation, submitted bi-weekly reflection prompts, participated in professional development workshops, and attended graduate school information sessions.



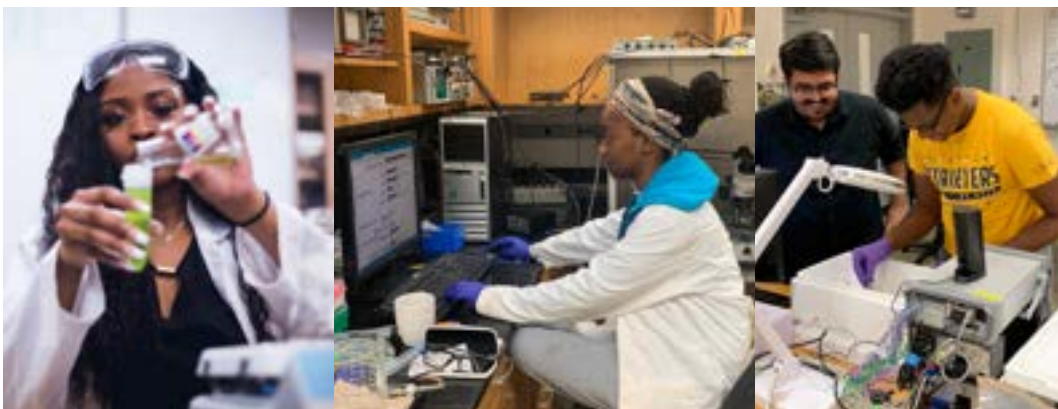
Name and Class | Major | Topic | Faculty Mentor | University

Michael Abrahams '22 | Biological Sciences | Cell Biology | Dr. Erin Green | UMBC
 Adedoyin Adegbuyi '23 | Computer Science & Mathematics | Data Modeling | Dr. Mathew Gluck | UMBC
 Aliyah Adegun '23 | Health Administration & Policy | Epidemiology & Biostatistics | Dr. Sacoby Wilson | UMBC
 Joshua Adetola '22 | Computer & Information Sciences | Machine Learning | Dr. Lin Deng | Towson
 Achalefac Akem '22 | Biology | Neuroscience | Dr. Fernando Vonhoff | UMBC
 Kolawole Akinnibi '22 | Information Systems | Human Computer Interaction | Dr. Yaxing Yao | Towson
 Dariush Aligholizadeh '24 | Biochemistry and Computer Science | Nanoparticles | Dr. Mary Sajini Devadas | UMBC
 Cameron Anderson '22 | Biochemistry | Developmental Biology | Dr. Fernando Vonhoff | UMBC
 Marwan Attia '24 | Biological Sciences | Bioprocessing | Dr. Govind Rao | UMBC
 Ummul Aymen '22 | Mathematics | Data Modeling | Dr. Lindsey-Kay Lauderdale | Towson
 Tamia Bowers '23 | Mechanical Engineering | Thermoelectric Materials | Dr. Deepa Madan | UMBC
 Austin Collins '24 | Mechanical Engineering | Design Optimization | Dr. Soobum Lee | UMBC
 Marcellus De Burgo '23 | Information Systems | Human Computer Interaction | Dr. Yaxing Yao | UMBC
 Juvet Ebai '21 | Biological Sciences | Ecology | Dr. Jeff Leips | UMBC
 Itohan Eromosele '22 | Biological Sciences | Developmental Biology | Dr. Stephen Hancock | Towson
 Adilia Espinoza-Jones '21 | Biological Sciences | Structural Biology | Dr. Michael Summers | UMBC
 Kelvin Fadojutimi '23 | Biochemistry and Molecular Biology | Structural Biology | Dr. Michael Summers | UMBC
 Janae Gordon '22 | Biological Sciences & Psychology | Neuroscience | Dr. Weihong Lin | UMBC
 Zolani Grady '24 | Forensic Science | Nano-materials | Dr. Mary Sajini Devadas | Towson
 Sahaadat Hamed-Owens '23 | Chemical Engineering | Biomaterials & Tissue Engineering | Dr. Jennie Leach | UMBC
 Tionna Harris '23 | Chemistry | Environmental Organic Chemistry | Dr. John Sivey | Towson
 Jayda Hughes '24 | Computer Science | Human Computer Interaction | Dr. Yaxing Yao | UMBC
 Chioma Iheacho '24 | Biology and Molecular Biology | Structural Biology | Dr. Aaron Smith | UMBC
 Maya-K Johnson '23 | Biological Sciences | Evolutionary Ecology | Dr. Mercedes Burns | UMBC
 Reyana Kaji '21 | Biological Sciences | Developmental Biology | Dr. Fernando Vonhoff | UMBC

SUMMER 2021 RESEARCH FELLOWSHIP PROGRAM

Name and Class | Major | Topic | Faculty Mentor | University

Maheder Kore '24 | Biological Sciences | Immunomodulation | Dr. Nykia Walker | UMBC
Berchie Kubi '23 | Mechanical Engineering | Thermoelectric Materials | Dr. Deepa Madan | UMBC
Amir Ledbetter '21 | Biochemistry and Molecular Biology | Cell Biology | Dr. Michelle Starz Gaino | UMBC
Yafet Mebrahtu '23 | Mechanical Engineering | Thermoelectric Materials | Dr. Deepa Madan | Montgomery College
Kaiya Meggett '23 | Biochemistry and Molecular Biology | Microbiology | Dr. Jeff Leips | UMBC
Mintesinot Minuta '22 | Mechanical Engineering | Design Optimization | Dr. Soobum Lee | UMBC
Areli Morales Hernandez '24 | Computer Science | Software Safety & Reliability | Dr. Josh Dehlinger | Towson
Fanny Morfin-Reyes '21 | Biochemistry and Molecular Biology | Neuroscience | Dr. Fernando Vonhoff | UMBC
Augustine Obisesan '24 | Biochemistry | Cellular Biochemistry | Dr. Songon An | UMBC
Gloria Ogordi '22 | Biological Sciences | Cell Biology | Dr. Laurie Sutton | UMBC
Oluwateniayo Ogunsan '21 | Bioinformatics & Computational Biology | Systems Biology | Dr. Daniel Lobo | UMBC
Chiad Onyeje '24 | Chemical Engineering | Nanoparticles | Dr. Erin Lavik | UMBC
Namrata Oruganti '23 | Biology | Structural Chemistry | Dr. Joel Liebman | UMBC
Eriberto Osorio '22 | Biological Sciences | Evolutionary Biology | Dr. Kevin Omland | UMBC
Roshnee Roberts '24 | Biological Sciences | Neuroscience | Dr. Tara LeGates | UMBC
Luana Rojas Zurita '24 | Mechanical Engineering | Thermoelectric Materials | Dr. Deepa Madan | Montgomery
Shefra Shah '24 | Biochemistry & Molecular Biology | Metabolism | Dr. Weihong Lin | UMBC
Mykah Smith '22 | Mathematics & Biology | Computational Biology | Dr. Ivan Erill | UMBC
Kevon Sonkeng '23 | Computer Engineering | Optical & Lasers | Dr. Curtis Menyuk | UMBC
Julia Srivastava '24 | Biological Sciences | Ecology and Evolutionary Biology | Dr. Mercedes Burns | UMBC
Sean Starkloff '24 | Biology | Physiology & Behavioral Science | Dr. Weihong Lin | UMBC
Adrian Casey Triguero '24 | Molecular Biology, Biochemistry & Bioinformatics | Nanoparticles | Dr. Mary Sajini Devadas | Towson
Grace Tugado '23 | Chemical Engineering | Biomaterials & Biochemistry | Dr. Jennie B. Leach | UMBC
Sharath Velliyamattam '23 | Biological Sciences | Molecular Genetics | Dr. Stephen Miller | UMBC
Dante Washington '22 | Biology | Ecology and Evolutionary Biology | Dr. Mercedes Burns | UMBC
Cameron Weaver '22 | Biology | Physiology | Dr. Vonnie Shields | Towson
Maria Webster '24 | Chemistry | Nanoparticles | Dr. Mary Sajini Devadas | Towson



“ The summer research experience with LSAMP required diligent work but it was all worth it, especially because it pushed me to work on my research project. However, we also focused on health and being in the right state of mind so it wasn't overbearing which was very comforting. I feel grateful for my participation. ”

LSAMP FACULTY RESEARCH MENTORS

College of Natural and Mathematical Sciences (CNMS)



Name | Title | Department | Research Focus | University

Dr. Songon An | Associate Professor | Chemistry & Biochemistry | Cellular Biochemistry | UMBC
Dr. Charles Bieberich | Professor | Biological Sciences | Cancer Biology | UMBC
Dr. Mercedes Burns | Assistant Professor | Biological Sciences | Ecology and Evolutionary Biology | UMBC
Dr. Sebastian Deffner | Assistant Professor | Physics | Quantum Thermodynamics | UMBC
Dr. Ivan Erill | Associate Professor | Computational & Evolutionary Biology | UMBC
Dr. Erin Green | Associate Professor | Biological Sciences | Cell Biology | UMBC
Dr. Joel Liebman | Professor | Chemistry & Biochemistry | Structural Chemistry | UMBC
Dr. Tara LeGates | Assistant Professor | Biological Sciences | Neuroscience | UMBC
Dr. Jeff Leips | Professor | Biological Sciences | Genetics | UMBC
Dr. Weihong Lin | Professor | Biological Sciences | Sensory Detection | UMBC
Dr. Daniel Lobo | Associate Professor | Biological Sciences | Systems Biology | UMBC
Dr. Jason Kestner | Associate Professor | Physics | Quantum Mechanics | UMBC
Dr. Stephen Miller | Associate Professor | Biological Sciences | Molecular Genetics | UMBC
Dr. Kevin Omland | Professor | Biological Sciences | Evolutionary Biology | UMBC
Dr. Achuth Padmanabhan | Assistant Professor | Biological Sciences | Cancer Biology | UMBC
Dr. Aaron Smith | Assistant Professor | Chemistry and Biochemistry | Structural Biology | UMBC
Dr. Michelle Starz-Gaiano | Associate Professor | Biological Sciences | Developmental Genetics | UMBC
Dr. Michael Summers | Professor | Chemistry & Biochemistry | Retrovirus assembly and packaging | UMBC
Dr. Laurie Sutton | Assistant Professor | Biological Sciences | Cell Biology | UMBC
Dr. Fernando Vonhoff | Assistant Professor | Biological Sciences | Neuroscience | UMBC
Dr. Nykia Walker | Assistant Professor | Biological Sciences | Immunomodulation | UMBC

“ I enjoy my lab every day. It is great to know that I have a group I can lean on if I need help. Teamwork is one of the most valuable traits I have learned during my summer in the lab. Before, I did not realize how crucial teamwork can be to learning and growing, as not only a researcher but as an individual. ”

- Excerpt From A Biological Sciences Major '24 Research Reflection -

LSAMP FACULTY RESEARCH MENTORS

College of Engineering and Information Technology (COEIT)



Name | Title | Department | Research Focus | University

Dr. Fow-Sen Choa | Professor | Computer Science and Electrical Engineering | Brain Neural Network Architecture | UMBC

Dr. Erin Lavik | Professor | Chemical and Environmental Engineering | Drug Delivery | UMBC

Dr. Jennie Leach | Associate Professor | Chemical, Biochemical, and Environmental Engineering | Biomaterials | UMBC

Dr. Soobum Lee | Assistant Professor | Mechanical Engineering | Design Optimization | UMBC

Dr. Cynthia Matuszek | Assistant Professor | Computer Science and Electrical Engineering | Robotics | UMBC

Dr. Deepa Madan | Assistant Professor | Mechanical Engineering | Thermoelectric Materials | UMBC

Dr. Helena Mentis | Associate Professor | Information Systems | Health informatics | UMBC

Dr. Curtis Menyuk | Professor | Computer Science and Electrical Engineering | Scientific Computing | UMBC

Dr. Dipanjan Pan | Professor | Chemical and Environmental Engineering | Nanotechnology | UMBC

Dr. Govind Rao | Professor | Chemical, Biochemical & Environmental Engineering | Bioprocessing | UMBC

Dr. Jianwu Wang | Assistant Professor | Information Systems | Big Data Analytics | UMBC

Dr. Yaxing Yao | Information Systems | Human Computer Interaction | UMBC

“...sometimes you feel as if you're not making much progress but then you come to understand that your data can be helpful to others. My PI has taught me that my role in the research lab is valuable and that routine observations can lead to progress in an experiment.”

- Excerpt From A Chemical Engineering Major '23 Research Reflection -

LSAMP FACULTY RESEARCH MENTORS

College of Arts, Humanities, and Social Sciences (CAHSS)

Name | Title | Department | Research Focus | University

Dr. Chris Hawn | Assistant Professor | Geography & Environmental Systems | Conservation Ecology | UMB

LSAMP FACULTY RESEARCH MENTORS

Faculty from other institutions

Name | Title | Department | Research Focus | University

Dr. Shuvra Bhattacharyya | Professor | Electrical and Computer Engineering | Signal Processing Systems | UMD

Dr. Josh Dehlinger | Assistant Professor | Computer Science | Software Safety & Reliability | Towson

Dr. Lin Deng | Assistant Professor | Computer & Information Sciences | Software Engineering | Towson

Dr. Mary Sajini Devadas | Assistant Professor | Chemistry | Nanoscale Functional Materials | Towson

Dr. Mathew Gluck | Lecturer | Mathematics | Applied Mathematics | Towson

Dr. Stephen Hancock | Assistant Professor | Chemistry | Developmental Biology | Towson

Dr. Lisa Jones | Associate Professor | Pharmaceutical Sciences | Protein Structure and Interactions | UMB

Dr. Lindsey-Kay Lauderdale | Mathematics | Group Theory | Towson

Dr. Clare Muhuro | Professor | Chemistry | Organic Molecules | Towson

Dr. Vonnie Shields | Professor and Associate Dean | Biological Sciences | Behavioral & Electrophysiological Biology | Towson

Dr. John Sivey | Associate Professor | Chemistry | Environmental Organic Chemistry | Towson



“ Throughout my time doing summer research, I learned what I have missed taking my courses online. I was able to quickly pick up technical skills in the lab which led me to successfully run my first experiments with the help of my peers and research mentor. With my new knowledge, I have gained confidence working in the lab which motivates me to continue my research. ”



Dr. Deepa Madan (pictured above) is an Assistant Professor in the Department of Mechanical Engineering. Her research team is working to develop zinc-chitosan gel-based batteries that are enclosed in flexible plastic. This would revolutionize how consumers power their devices. Each year, Dr. Madan welcomes LSAMP Research Fellows into her lab hosting 10 scholars since 2018. Chizaram Ugboh '24 states, *"Ever since I met Dr. Madan and her amazing research team, my love for research has only grown stronger. She does weekly check-ups on me and the rest of her staff to guide and answer any of our questions. She is very supportive of students allowing my peers from various classes to experience the inner workings of her lab. As a mentor, her mentoring style is mostly hands-off enabling you to grow more independent as you work throughout the lab."*

FACULTY SPOTLIGHT

From the entire UMBC LSAMP Community, we thank Dr. Deepa Madan and Dr. Rachel Brewster for their continued support.

Dr. Rachel Brewster (pictured below) is an Associate Professor in the Department of Biological Sciences. Dr. Brewster's research projects include the regulation of brain development and metabolism. Over the years, Dr. Brewster hosted five LSAMP Research Fellows. Rianna Zacharias '22 states, *"I've really enjoyed performing immunolabeling experiments with our new custom antibody to localize shroom3 expression in zebrafish embryos. Throughout this project, Dr. Brewster has been a great mentor. I appreciate how she is always available to answer any questions I have or to provide guidance for troubleshooting our experiments when things don't go as expected."*





**GRADUATING
SENIORS**

Class of 2021

CLASS OF 2021 GRADUATING FELLOWS AND POST-GRADUATION PLANS

Susan Afolabi

Biological Sciences
Postbac, VCU PREP



Miral Ahmad

Information Systems
MS, UMBC



Aya Alsabagh

Bioinformatics & Computational Biology
Clinical Techn Support, Mercy Medical



Karis Barnett

Chemistry
PhD, Michigan



Elshaday Behailu

Biological Sciences
TBD



Jonathan Bolaños

Mechanical Engineering
PhD, Clemson



Allyson Caldwell

Biochemistry & Molecular Biology
PhD, Duke



Autumn Cook

Chemistry & Gender Women's Studies
PhD, UIUC



Arushi Dalal

Biological Sciences
TBD



CLASS OF 2021 GRADUATING FELLOWS AND POST-GRADUATION PLANS

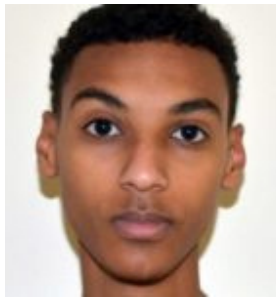
Ayushi Dave

Biological Sciences
MISHOE Postbac, NIH



Menelik Demissie

Biological Sciences



Maithily Diaz

Biological Sciences
Postbac, Johns Hopkins



Ogechi Elemuo

Biological Sciences
Fulbright ETA to Montenegro



Olumide Fagboyegun

Biochemistry & Molecular Biology
PhD, Harvard



Hana El-Erian Flores

Chemical Engineering
PhD, MIT



Deanna Gaskin

Biological Sciences
MISHOE Postbac, NIH



Jafira Johnson

Biological Sciences
MD, UMass Medical School



Yianni Karabatis

Computer Science
Fulbright Greece



CLASS OF 2021 GRADUATING FELLOWS AND POST-GRADUATION PLANS

Mohammed Hassan

Faizan Khalid

Information Systems
MS, Johns Hopkins



Aaleyah Lewis

Computer Science
PhD, Washington



Viviana Llontop-Maldonado

Biological Sciences



Carina Lopez Escobar

Biological Sciences
Postbac, Georgia



Luz Martinez

Biological Sciences



Crystal Najib

Biological Sciences
MS, UMD



Howard Nicholson III

Chemical Engineering
PhD, Columbia



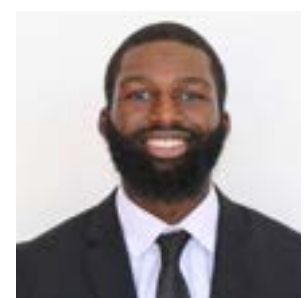
Precious Onuoma

Biological Sciences
Assistant, Perfect Office Solutions



Jason Pentsil

Computer Science
Engineer, Northrop Grumman



CLASS OF 2021 GRADUATING FELLOWS AND POST-GRADUATION PLANS

Abdul Raheem-Adeleke

Mechanical Engineering
MS, Stanford



Hannah Ramcharan

Bioinformatics & Computational Biology
PhD, MIT



Isai Ramirez Gonzalez

Biological Sciences
Clinical Research Coordinator



Roshae Roberts

Biochemistry & Molecular Biology
Postbac, UMBC



Hana Tekle

Biological Sciences
MPH, UMD



Jude Thaddeus Solijon Persia

Mechanical Engineering
Intern, NASA



Frances Watson

Computer Science
MA, University of Southern California



Halle Welch

Chemical Engineering
PhD, Cornell



Jameka Wiggins

Mechanical Engineering
PhD, Ohio State



UMBC LSAMP STAFF



Sunji Jangha
Program Director



Peter DeCrescenzo
Assistant Director



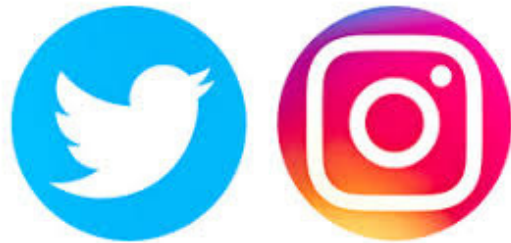
Janerra Allen
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