Welcome Message

The Morgan State University (MSU) Division of Research and Economic Development (D-RED) aims to be a strategic partner for your research endeavors. Established in the Spring of 2013 as one of MSU’s newest organizational units, we have continuously evolved to meet our stakeholders’ needs. The D-RED understands that a strong, focused research administration is critical, therefore we are developing a structured approach to align our research operations and maximize our effectiveness.

We encourage feedback from the MSU research community.

Please let us know how we are doing.

• How to submit comments/suggestions or news stories: DRED.feedback@morgan.edu
• How to contact the Research Administrators Pre-Award or Post-Award Departments: sponsored.programs@morgan.edu
Vice President's Corner

The Division of Research and Economic Development (D-RED) focuses on promoting excellence in research activities and scholarship such as facilitating creative and collaborative research opportunities by:

Enhancing Technical Capacity to increase External Funding from major public and private funding sources

Ensuring Compliance with all applicable laws and regulations related to the responsible conduct of research, and

Facilitating the Commercialization of Faculty Generated Intellectual Property and Community Engagement

D-RED serves as the initial point of contact for Companies, Federal and State Agencies, interested in connecting or exploring collaborations with the Morgan State University (MSU) research enterprise.

Immediate Goal:

- A sustainable $50 million in sponsored research income
- Increased faculty and student research activities
- Increased intellectual property development and technology transfer

We have achieved R2 status - a key milestone articulated in the President’s 2011 - 2021 Strategic Plan for Morgan. D-RED’s focus now is to improve our systems and processes to support the continuous growth of Morgan’s stature within the nation's higher education research community.

D-RED makes this real by facilitating & encouraging increased:

- Faculty Engagement
- Student Participation
- Involvement with the Community
- Technology Transfer & Creation of New Businesses

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Research News & Reviews is published by D-RED.
Any comments, suggestions or ideas can be forwarded to dred.feedback@morgan.edu
The Office of Technology Transfer (OTT) assists faculty, staff members, administrators, and students with intellectual property issues resulting from their research discoveries, and other scholarly and creative activities. It exists to foster the creation of innovative technologies and to manage those technologies and other intellectual property for the benefit of the University and the public.

The OTT provides assistance to MSU faculty on such issues as patent applications, trademark, copyrights, and other forms of intellectual property. There are many commercialization options, and the OTT has experience in managing the complexities of technology transfer. The goal is to make the processes of invention disclosure, patent application, marketing and eventual commercialization as seamless as possible.

Through its Innovation Works Programs, OTT cultivates and advances innovations towards commercialization, to foster public benefit and economic development.

2nd Annual Innovation of the Year Awards

Student Innovator of the Year
Amirreza Nickkar
Department of Transportation and Urban Infrastructure Studies
School of Engineering

Instructional Innovator of the Year
Dr. Md Mahmudur Rahman
Department of Computer Science
School of Computer, Mathematical, & Natural Sciences

Staff Innovator of the Year
Debbie Duran
Office of Human Resources
Division of Finance & Management

Life Science Innovation of the Year
Bio-Product Production in Cyanobacteria
Drs. Viji Sitther, Ben Tabatabai, Somayeh Fathabad
Department of Biology
School of Computer, Mathematical, & Natural Sciences

Information Science Innovation of the Year
Perceived Risk Hierarchy Methodology
Drs. Lorece Edwards, Lawrence Brown, Ian Lindong, Sabriya Dennis
Department of Behavioral Health Sciences and Department of Health Policy and Management
School of Community Health and Policy

Physical Science Innovations of the Year
Diabetic Shoe & Insole
Dr. LaPorchia Davis
Department of Family and Consumer Sciences
School of Education & Urban Studies

Issued U.S. Patents Awards

U.S. Patent 10,253,974
The Method and Design of the Ultra-Clean Mobile Combustor for Waste Biomass & Poultry Litter Disposal
Dr. Seong Lee
Department of Industrial & Systems Engineering
School of Engineering

U.S. Patent 10,333,620
Building Occupant Tracking with Visible Light Com. Seq. Relay Messaging & Lighting Modules
Dr. Kofi Nyarko; Christian Emiyah; Samuel Mbugua
Department of Electrical and Computer Engineering
School of Engineering
Research Misconduct Policy

The Department of Health and Human Services defines research misconduct as:

**Fabrication** – making up results and recording or reporting them.

**Falsification** – manipulating research materials, equipment or processes or changing or omitting results such that the research is not accurately represented.

**Plagiarism** – appropriating someone else’s ideas, processes, results or words without giving proper credit.

**Deliberate or repeated non-compliance** with the regulations can be considered misconduct.

**Criteria for Research Misconduct**
- Represents a significant departure from accepted practices
- Has been committed intentionally, or knowingly, or recklessly;
- Can be proven by a preponderance of evidence

**What is NOT Misconduct**
1. honest, unintentional error
2. honest differences of opinion

**Institutional Requirements**
- Establish policies and procedures for investigating and reporting instances of alleged research misconduct
- Provide training and education
- Promote ethical and responsible conduct of research
- Provide support to assist with correcting occurrences of misconduct
What was the academic and professional background that brought you to this passion for environmental literacy?
I grew up on a plant nursery in a small town in Texas, and I've always been interested in science. My parents encouraged me to pursue a different degree/career path than they had chosen, and I was already in love with the ocean, so I focused my studies on marine science. I received my bachelor's degree from Rutgers, the State University of New Jersey in Marine Science with a minor in chemistry. I just completed my PhD in Chemical Oceanography from The College of William & Mary's Virginia Institute of Marine Science. I was able to work with high school and undergraduate students in classroom settings during my graduate studies, and I loved finding new ways to explain complex topics to students and seeing my students excel in their coursework.

What challenges have you faced in your work and how have you tackled them?
There is a bit of a learning curve when moving from graduate school to a job not focused solely on research and writing. I'm still writing, including proposals and lesson plan ideas, but it's a completely new and exciting world to me. Also, many of the existing activities focus on biology, and as a chemist, I'm trying to both expand my knowledge of coastal biology and incorporate more chemistry into activities.

What do you think Morgan students ought to know about the research opportunities available at PEARL?
We're a small lab, but we're growing and we're proud to be a part of what makes Morgan great. We are doing cutting-edge research at the PEARL, and we love having students be a part of it. Our summer internship program usually has several Morgan students, and we're always looking for new ways to interact with Morgan, even though we're 80 miles south of main campus.

What is the one thing that you think students at Morgan should know about you?
I want to work towards a better science education system. I want to know how students learn and how we can improve their educational experience. (I'm happy to chat about this, too!)

Do you have any specific plans at Morgan during the coming academic year? Elaborate!
I hope to work toward a better relationship between Morgan’s main campus and the PEARL. I also want to create connections with other educators, local partners, and state agencies to ultimately improve scientific literacy in our region. I'm also looking forward to spring field trips and meeting the summer interns!

How did you come to Morgan?
I really wanted to branch out into environmental education, and as the PEARL is growing and revamping its research and educational programs, I thought this would be a perfect place to begin my career. The combination of a great university with a great off-campus lab was very enticing.

What is the focus of your research work here at PEARL?
Currently, I'm working on the education and outreach programs at the PEARL and trying to collaborate with local and state partners to create educational programs for all ages that incorporate coastal science, especially the research done here at the PEARL. In the future, alongside my educational endeavors, I'd like to focus my research on water quality monitoring and studying colored dissolved organic matter in the coastal ocean.

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In your own words, how would you describe the central focus of your research work here at PEARL?
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How did you become interested in environmental education, and especially your focus of reducing stigmas surrounding perceived difficult scientific topics?
While getting my undergraduate degree, I took several science courses that were poorly taught and discouraged students from pursuing scientific careers. I have no problem with students not pursuing a scientific career, but I don't want poor teaching to be the reason they leave STEM fields.
The PEARL is an environmental and aquatic research laboratory that generates scientific knowledge through innovative, interdisciplinary environmental research. Embraces the public university’s role in translating this knowledge to stakeholders for the benefit of the public; and inspires the next generation of scientists and environmentally-aware citizens through experiential learning opportunities, mentored research experiences, and environmental education. PEARL focuses its efforts on three major areas: Research, Education, and Public Service/Outreach.

**Research Highlights**

**Oyster Genetics:** Dr. Ming Liu, PEARL Shellfish Genetics Researcher, has received funding for two projects to move forward his oyster genomics research program. One project is funded by Maryland Sea Grant ($140,000 over two years) – this project is focused on developing a Maryland-specific oyster. The other project is a multi-institutional research project supported by the Atlantic States Marine Fisheries Commission (funds source: NOAA Fisheries) at $4.4 million over five years to 12 institutions. MSU’s share of this project is $104,000 and involves developing superior oyster lines for Maryland using genomics approaches.

**Environmental Economics:** Dr. Scott Knoche, PEARL Director has received funding for two projects to move Pearl’s environmental economics research program forward. One project is funded by the Maryland Department of Natural Resources Chesapeake and Coastal Service (funds source: U.S. Fish and Wildlife Service) at $130,000 over two years – this project involves performing a recreational boater needs assessment. The second project is a multi-institutional project supported by NOAA Sea Grant at $1.6 million over three years. MSU’s share of this project involves developing an economic impact analysis of salmon aquaculture.

PEARL's best ever Open House was held on October 4, 2019 and attended by ~160 faculty, staff, alumni and friends. Attendees had the opportunity to: visit PEARL laboratories, interact with PEARL researchers, take part in an oyster-dredging expedition, view the PEARL oyster hatchery, and learn more about the important research and educational work being done at the PEARL.

The keynote speech was given by the National Oceanic and Atmospheric Administration (NOAA) Chief Scientist Craig Mclean. His talk was very well received and plans are being made to initiate an annual NOAA Day at Morgan. Additionally plans are being made to invite Baltimore City Schools to attend next year's PEARL Day.
The NEH Awards for Faculty program seeks to strengthen the humanities at Historically Black Colleges and Universities (HBCUs) by encouraging and expanding humanities research opportunities for individual faculty and staff members. Awards support individuals pursuing scholarly research that is of value to humanities scholars, students, and/or general audiences.

The program offers applicants flexibility in project types and award periods. Common to all projects must be humanities research. Eligible projects include humanities research in primary and secondary materials leading to the development of books, monographs, peer-reviewed articles, e-books, digital materials, translations with annotations or a critical apparatus, critical editions, or other scholarly resources; humanities research related to institutional or community goals or interests; and humanities research leading to the improvement of an existing undergraduate course. For complete details, please see the Notice of Funding Opportunity.

The program is open to all faculty and staff members, including full-time, part-time, adjunct, and retired faculty and staff at HBCUs.

The awards support the equivalent of two to twelve months of full-time work and carry a stipend of $5,000 per month (full-time equivalent).

For a detailed program description and the Notice of Funding Opportunity, please see the NEH website at https://www.neh.gov/grants/research/awards-faculty-historically-black-colleges-and-universities.

The next application deadline is April 8, 2020 for projects beginning in 2021 and 2022.
Other universities are interested in learning more about the ASCEND Training Model and replicating its methods. Dr. Payam Sheikhattari (Co-PI) and Ms. Gillian Silver (Program Manager) of ASCEND recently traveled to Hawaii to assist the Hawaii Pacific University to submit a grant to the NIH to replicate ASCEND’s methods. Dr. Sheikhattari recently gave a talk about ASCEND’s methods at the University of Michigan and they are also very interested in replicating ASCEND’s methods.

Student Presentations: Twenty-eight (28) ASCEND Scholars and Student Research Center members will be presenting the results of their research at various forums in late October and mid-November, 2019. Of these, 25 will be presenting at the Annual Biomedical Research Conference for Minority Students (ABRCMS) in Anaheim, California, and 3 will present their research findings at the Society for Neuroscience (SfN) Conference in Chicago, Illinois.

Mentoring Workshops: ASCEND regularly organizes mentoring workshops for those who mentor undergraduate students in their research. The most recent university-wide workshop was held in August 2019 and was attended by 54 mentors across career stages, of which 35 completed the evaluation. All 35 respondents (100%) agreed that attending the mentor training was a valuable use of their time, and their comments reflected their high opinion of the training.

Faculty Research Grants: In the Academic Year 2018-2019, faculty at the School of Computer, Mathematical, and Natural Sciences submitted over 65 grant applications, of which nearly 35 has been selected or recommended for funding. A substantial amount of this success is attributable to ASCEND’s interventions.

ASCEND was renewed for another five years. The total amount of funding for this program over its two phases will be about $40 million.
The Morgan State University Board of Regents has approved the University's adoption of an Intellectual Property Policy to place Morgan in step with other research universities. The comprehensive provisions of the approved IP Policy for the university applies a host of best practices mirroring those of other Maryland public research universities. The new policy governs the ownership and protection of intellectual property created by personnel, students and others at the university. It also replaces Morgan's existing Patent Policy and Copyright Policy, both adopted in 1996.

This policy on intellectual property is set to achieve the following:

1. To assure that the benefits of University research and scholarship, which include intellectual property, are fairly and fully disseminated to benefit the public,
2. To create an environment that encourages and recognizes the creative efforts of faculty, students and personnel, and
3. To generate resources to support the University's primary mission.

This policy governs the ownership and protection of Intellectual Property created by Personnel, Students and others at the University. The policy applies to all University units, Personnel and Students as well as non-University visitors who make use of University facilities and resources.

This policy is considered a part of the conditions of employment for all employees and a part of the conditions of enrollment and attendance for all Students.

Among other things, the policy listed the terms for Ownership of Intellectual Property thus:

TRADITIONAL SCHOLARLY WORK

1. Personnel. Personnel who author Traditional Scholarly Works shall hold copyright in those Copyrighted Works subject to the following conditions and exceptions:

   a) Reservation of Rights. The University reserves the right at all times to exercise copyright in Traditional Scholarly Works as authorized under United States Copyright Law.

   b) Exceptions. The University holds copyright in Traditional Scholarly Works created by Personnel when:

i. the Works are required as deliverables under or created in the performance of any contract to which the University is a party; or
ii. not holding copyright would result in a breach by the University of a contractual obligation to a third party or would be contrary to law, regulation or University policy; or
iii. the Works are commissioned by the University or created in connection with a duty specifically assigned by the University to the Creator; or
iv. the Works are created for University purposes with the support of Significant University Resources; or
v. Personnel create the Works for personal purposes using Significant University Resources without prior written approval by the Vice President of the Creator's department or unit.

2. Students. Students shall hold copyright in Traditional Scholarly Works they author in connection with their University academic and research activities subject to the following conditions and exceptions:

   a) Reservation of Rights. The University reserves the right at all times to exercise copyright in Traditional Scholarly Works created by Students as authorized under United States Copyright Law.

   b) Exceptions. The University holds copyright in Traditional Scholarly Works created by Students when:

i. the Works are created by Students in their capacity as Personnel; or
ii. the Works are required as deliverables under or created in the performance of any contract to which the University is a party; or
iii. not holding copyright would result in a breach of a University contractual obligation to a third party or would be contrary to law, regulation, or any University policy; or
iv. the Works are created outside the scope of their academic and research activities using Significant University Resources without the prior written approval of the department or unit that controls the resources.

This policy became effective following the approval of the Board of Regents on November 5, 2019.
On November 6-8, 2019, Morgan State University hosted a Workshop “Promoting Participation of HBCUs/MSIs in Advanced Manufacturing R&amp;D” at the NSF Headquarters in Alexandria, VA. Manufacturing USA is a major joint federal and industry partnership initiative aimed at advancing manufacturing research and education. Thirty-One HBCUs/MSI’s were in attendance. Each participating university was asked to prepare a poster that gave an overview of the advanced manufacturing research that they were involved in. Faculty from 24 Institutions presented 33 posters.

The “Manufacturing USA Network” is enabling the translation of advanced manufacturing research and approaches into industry practice. This national network on manufacturing innovation is comprised of 14 institutes, each a public/private/university consortium with a $50M - $75M Federal investment over five years with at minimum a matching investment from the private sector. In practice, the private sector co-investment has been at least twice that of the Federal Government for each institute.

However, there are two issues of concern regarding the Manufacturing USA:

- for the success of American domestic advanced manufacturing, industry needs a reliable, certified supply of skilled workers with the unique skills relevant to a range of advanced manufacturing technologies. While each institute of the Manufacturing USA is developing training approaches during the period of the Federal investment, there is no single organization/institute, with a long-term commitment and singular focus on Advanced Manufacturing Workforce Education and Training.
- to succeed in drawing the best talent and capabilities, the lack of real and substantive involvement of the underrepresented minority community in the Manufacturing USA Network is a cause of concern. To date, there has been no substantive involvement of Historically Black Colleges and Universities (HBCUs) in the Manufacturing USA network of the 14 institutes that were initiated in 2012.

Based on feedback and survey results conducted by Professor Kaci Thompson (University of Maryland College Park), the workshop was an overwhelming success. A Supplemental Grant to do a thorough assessment of the Workshop and develop a proposal for next steps has been submitted from consideration. Participants increased their familiarity with advanced manufacturing as per indicated below: before the workshop, 41% considered themselves very familiar or extremely familiar with the topic, while after the workshop 79% considered themselves very familiar or extremely familiar.
American Association for the Advancement of Science Elects Morgan’s Dr. Willie E. May As a 2019 Fellow

The American Association for the Advancement of Science (AAAS) has announced the election of Morgan State University’s Willie E. May, Ph.D. as a 2019 AAAS Fellow. May, who serves as Morgan’s vice president for the Division of Research and Economic Development (D-RED), was among the more than 400 newly elected leading scientists from around the world to have earned the lifetime distinction of AAAS Fellow, in honor of their invaluable contributions to science and technology. Fellows are elected each year by their peers serving on the Council of AAAS, the organization’s member-run governing body, and May was selected for his international leadership in the measurement and standards infrastructure of science and technology.

The honor of being elected an AAAS Fellow began in 1874 and is officially acknowledged with the presentation of a certificate and rosette. Dr. May will receive his certificate and rosette this February in Seattle, Washington during the AAAS Fellows Forum, a part of the Association’s Annual Meeting.

"It is with the deepest gratitude and humility that I accept this appointment as a Fellow of the American Association for the Advancement of Science," said Dr. May. "I look forward to a continued commitment in support of the global leadership needed in the advancement of measurement standards and science and technology infrastructure."

As the policymaking body of the AAAS, the Council annually elects Fellows with the expressed intent on preserving the integrity of the Association and the esteemed honor conferred upon those who have been granted fellowship in the world’s largest multidisciplinary scientific society. Collectively, AAAS Fellows represent an exclusive body of diverse scientific thought-leaders whose efforts on behalf of the advancement of science or its applications are scientifically or socially distinguished.

The 443 newly elected Fellows represent each of AAAS’s 24 sections, from neuroscience and psychology to social, economic and political sciences. The honor recognizes diverse accomplishments, including pioneering research, leadership within a given field, teaching and mentoring, fostering collaborations and advancing public understanding of science.

In order to be considered for the rank of Fellow, an AAAS member must be nominated by three previously elected Fellows, the steering group of an AAAS section, or the organization’s CEO. Nominations go through a two-step review process, with the relevant steering group reviewing nominations in their section and the AAAS Council voting on the final list.

At Morgan, in his role as vice president for D-RED, Dr. May supports research throughout the University and oversees IP and commercialization efforts. He previously served as the U.S. Under Secretary of Commerce for Standards and Technology and director of the National Institute of Standards and Technology (NIST) and as the director of Major Research and Training Activities at the University of Maryland, College Park. His laboratory-based research is described in more than 90 peer-reviewed technical publications. Recently, he was selected to become a member of the Consumer Reports Board of Directors. Dr. May joined the University in May of 2018.

“I look forward to a continued commitment in support of the global leadership needed in the advancement of measurement standards and science and technology infrastructure.”
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