RUBY BROADWAY, PhD.

PROFESSOR AND PROGRAM DIRECTOR

DILLARD UNIVERSITY

NEW ORLEANS, LA

INTRODUCTION

- Dillard University , Department of Biology has contributed to the advancement of HBCU students for years. We have filled the STEM education pipeline from grades 1 through Senior year and into graduate school.
- Sit back for a moment and let me take you down this STEM education pipeline. I will start with our first program, the Saturday Science Academy and bring up to our most current education program (U-RISE).

PRE-COLLEGE PROGRAMS

- SATURDAY Science Academy Academic Enrichment Program
- Young Scholars Environmental Summer Camp
- Pre-Freshman Engineering Summer Program

SATURDAY SCIENCE ACADEMY (ACADEMIC ENRICHMENT PROGRAM)

The Saturday Science Academy (academic year) offered activities and learning experiences in laboratory sciences, mathematics, computer science, and communication skills. The programmatic processes implemented sought to end the use of ineffective, "off-the-shelf' and "cookie-cutter" learning techniques, and introduce new, but exciting ways to teach science, technology (computer science), engineering, and mathematics that will stimulate critical thinking skills.

The Academy facilitated the entry of minorities into careers in science and technology by eliminating barriers and problems that begin in elementary school and continue throughout the public school experience. The program is designed for elementary and middle school students in grade three (3) through eight (8).

YOUNG SCHOLAR ENVIRONMENTAL SUMMER CAMP

The Young Scholars Environmental Camp is designed to meet the unique needs and interests of children and youth. Young campers will participate in their favorite sports promoting health and the development of important social skills; explore environmental interests that could lead to rewarding careers; get an early taste of college life and the value of academic achievement; engage in dynamic, hands-on learning experiences that enable growth and success; be involved with environmental demonstrations by guest speakers; participate in environmental science field trips; meet peers with similar interests and build new friendships and have fun and create memories to last a lifetime.

The Young Scholars Environmental Summer Camp is open grades 1 through 6.

Freshman Engineering Summer Program

- The aim of the program is to strengthen skills in the sciences, mathematics, computer science and introduce engineering for middle and high school students, as well as sharpen individual communication and critical thinking, skills. Participants will be introduced to courses in mathematics, general biology/chemistry, English, and computer science. Throughout the six-week summer program, students will participate in scientific demonstrations and experimentations, mathematical reasoning, computer science training, Science and Engineering Fairs; as well exposure to various fields of Science and Engineering field trips.
- The Pre-Freshman Engineering Summer Program is for grades 7 through 10.

UNDERGRADUATE PROGRAMS AT DILLARD UNIVERSITY

- MARC U-STAR: Maximizing Access to Research Careers Undergraduate Student Training in Academic Research
- Deeper Student Learning (DSL) Phase I Pathway to Success
- MSEIP ADVANCING FACULTY-STUDENT RESEARCH
- URBAN WIDE ADVANCE TRANSDISCIPLINARY ENVIRONMENTAL RESEARCH (NSF-GEOPATH) CERTIFICATE PROGRAM
- Deeper Student Learning Program Phase II
- Undergraduate Research Improvement Science Education (U-RISE) TO SUCCESS program

MARC U*STAR: Maximizing Access to Research Careers Undergraduate Student Training in Academic Research

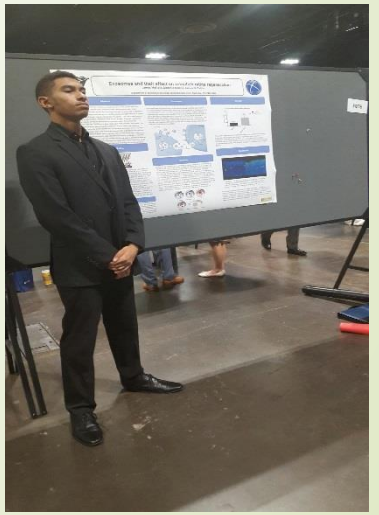
The goal of the Maximizing Access to Research Careers (MARC) Undergraduate Student Training in Academic Research (U*STAR) program is to develop a diverse pool of undergraduates who complete their baccalaureate degree, and transition into and complete biomedical, research-focused higher degree programs (e.g., Ph.D. or M.D./Ph.D.).

The MARC U*STAR is for Juniors and Seniors

The Pre-MARC U*STAR is for sophomores

DILLARD UNIVERSITY

MARC U-STAR: Maximizing Access to Research Careers Undergraduate Student Training in Academic Research



DILLARD UNIVERSITY

DEEPER STUDENT LEARNING (DSL) PHASE I
PATHWAY TO SUCCESS

The Dillard University Deeper Student Learning Phase I (DU-DSL) is a residential summer bridge program designed to improve student achievement by identifying and implementing instructional strategies, that improve postsecondary learning and retention, resulting in completion of a degree in a STEM field.

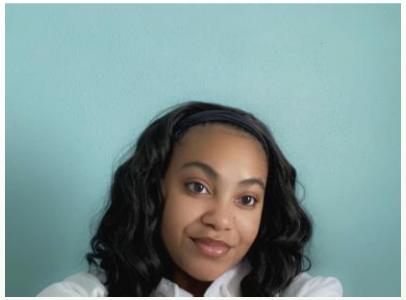
The DSL I is for pre-freshman STEM majors

DSL PHASE I COHORT 1
FIRST YEAR

SUCCESS STORY DSL PHASE I
4-YEARS LATER
(ALL ACCEPTED TO GRADUATE SCHOOL)

DSL PHASE I
COHORT II

DSL PHASE I
COHORT III



MINORITY SCIENCE ENGINEERING IMPROVEMENT PROGRAM (MSEIP) ADVANCING FACULTY-STUDENT RESEARCH

Centered on the development of capacity for strong hypothesis-driven research for STEM among faculty and students.

MSEIP ADVANCING FACULTY-STUDENT RESEARCH

URBAN WIDE ADVANCE TRANSDISCIPLINARY ENVIRONMENTAL RESEARCH (NSF-GEOPATH) CERTIFICATE PROGRAM

Urban-WATER program is an initiative to enhance diversity in the geosciences using Dillard University, a historically black university and college, as a key pipeline for African American student recruitment and retention. Students in the biological sciences, computer sciences, urban studies and economics will build a new community at Dillard to develop competencies in different approaches and perspectives to a key environmental issue in New Orleans, urban water, including the science of runoff, use, management, and protection situated within equally complex political and economic stakeholder interests.

URBAN WIDE ADVANCE TRANSDISCIPLINARY ENVIRONMENTAL RESEARCH (NSF-GEOPATH) CERTIFICATE PROGRAM

Co-valedictorian Traelon Rdgers and is going to law school at the University of California at Berkeley (UCLA). He has plans to become a public lawyer, working with environmental justice issues. As part of his admittance package, Traelon is the recipient of the prestigious NAACP Marshall-Motley Scholar Program as a next generation civil rights champion.

Grace Johnson was admitted to the Master of Science in public health in environmental sciences at the Tulane University school of public health and tropical medicine, and admitted to the Master of Science in Public Health Program at Meharry Medical College. Her is attending Louisiana State University in Environmental Studies.

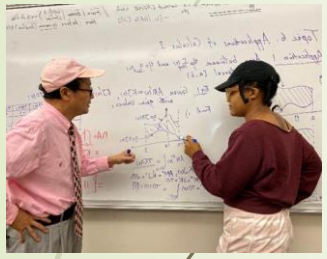
DEEPER STUDENT LEARNING PHASE II: PATHWAY TO SUCCESS IN STEM

The Dillard University Deeper Student Learning Program Phase II is an academic enrichment programs designed to help School of STEM students get ahead in their degree programs and gate keeping courses. Phase II of the program is for students going to their sophomore year at Dillard.

DEEPER STUDENT LEARNING (DSL)
PHASE II
PATHWAY TO SUCCESS
SUMMER INSTITUTE

Phase II of Deeper Student Learning (DSL) Pathway to Success in STEM will foster an approach that promotes inquiry-based learning or a higher-order cognitive skill such as the ability to analyze, synthesize, solve problems, and thinks meta-cognitively in order to construct long-term understanding.

CALCULUS II



TECHNICAL WRITING/SCIENTIFIC COMMUNICATION MODULE

The goal of the module is to provide participants with fundamental training in science communication, focusing in particular on how to publically present science to a non-expert audience in a formal setting such as a public lecture and technical writing

FINANCIAL LITERACY

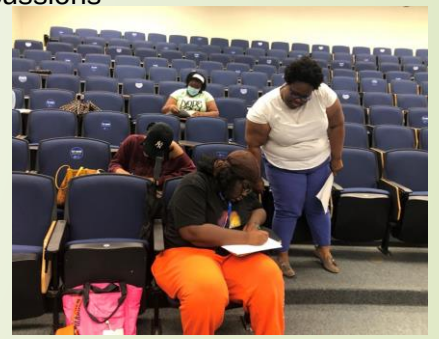
This basic financial literacy course will help students become self-sufficient and achieve financial stability, including important skills/outcome such as; being able to save money, distinguishing difference between wants and needs, managing budgets paying bills, buying homes, paying for college, and planning for retirement.

ORGANIC CHEMISTRY MODULE

This organic chemistry module provided an overview on the fundamental principles of hydrocarbon compounds focusing on structure, functional groups, and elementary reactions.

MICROBIOOGY

Fundamental principles of microbiology and immunology with detailed consideration of physiology, pathogenicity, biochemical, and immunologic characteristics of microorganisms. Three hours per week for lecture-discussions



MICROBIOLOGY LABORATORY

UNDERGRADUATE RESEARCH IMPROVEMENT SCIENCE EDUCATION TO SUCCESS PROGRAM (NIH-U-RISE)

The goal of the Undergraduate Research Improvement Science Education (U-RISE) TO SUCCESS program is to develop a diverse pool of undergraduates who complete their baccalaureate degree, and transition into and complete biomedical, research-focused higher degree programs (e.g., Ph.D. or M.D./Ph.D.).

This U-RISE program is for junior and seniors

The Pre-U-RISE is for sophomores

UNDERGRADUATE RESEARCH IMPROVEMENT SCIENCE EDUCATION TO SUCCESS (U-RISE)

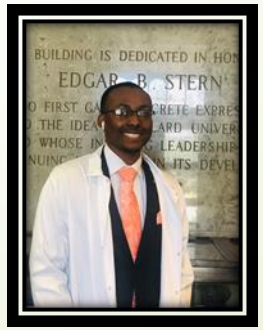
Toni Thomas ----------Advance Junior ----------Biology major

India Harris ----------Junior----------Biology major

Jailen Doyle----------Junior----------Chemistry major

Anthony Brooks-Ervin----Junior----------Biology major

***Aliyah Mansion----------Junior----------Biology Major --------PRE-U-RISE**



SPEAKERS: ALUMNI

Dr. Kelly Nash-Forrest
Associate Dean for Faculty Success, College of Sciences
Professor, Department of Physics and Astronomy
University of Texas at San Antonio
Former PREP and SSA Alumnus

Latisha Franklin, PH.D Candidate
Former MARC Alumnus

Grace Johnson, MS student
Department of Public Health
Louisiana State University Health Science Center
Former GEOPATH Alumnus

Justin Matthews, MS student
School of Engineering
Florida A&M University
Former DSL/Griffis Institute Alumnus

MARC ALUMNI













QUESTIONS AND ANSWERS

THANK YOU