E News

NSF-HBCU-UP (iApply) Program, April 2023

iApply: Early Interdisciplinary Applied Strategies to Strengthen STEM Education and Research at SSU

The National Science Foundation (NSF) awarded SSU a five-year grant worth worth $2.25 to support efforts to increase the number of underrepresented students who earn STEM BS degrees and enter STEM graduate programs and STEM careers. This grant titled '*Early Interdisciplinary Applied Strategies (iApply)*' has a long-term goal of maintaining student interest in STEM career paths and increasing SSU STEM student retention to improve graduation rates while enhancing the future diversity of the STEM research workforce. We are set to begin year three of this grant. This project incorporates innovative strategies that include:

Curriculum Reform

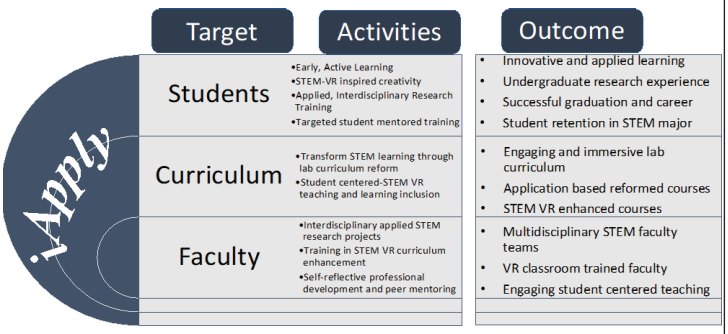
- Introductory STEM lab courses are being redesigned to emphasize active learning and virtual reality (VR) enhancements.

Faculty Development

- Faculty are being trained on course redesign principles for the lab enhancements and can participate in the iApply Faculty Awareness and Commitment to Excellence (**FACE**) training program.

Student Development

- Students are exposed to applied inter-disciplinary research training through a team-based approach.



SSU Project Program Team

Dr. Chellu S. Chetty (PI)
Regents Distinguished Professor of Biology (Retired)
Dr. Teresa Shakespeare (Lead Co-PI)
Associate Professor & Chair, Biology
Dr. Manoj Prasad (Co-PI)
Assistant Professor, Chemistry & Forensic Science
Prof. Veena Thapliyal (Co-PI)
Lecturer, Department of Chemistry & Forensic Science
Mr. Anthony Palacios
VR Research Technician
Mr. Alex Pierce
Project Coordinator
Dr. Lisa Yount (*Faculty Research Mentor)*

Faculty Research/ Education Consultant:

Dr. Phyllis Blumberg, *Education Research Consultant, Philadelphia, PA*
Dr. Karla-Sue Marriott, *(Consultant) Professor and Director- Forensic Science (RWU, Rhode Island)*

External Advisory Board Members:

Dr. Jamboor K. Vishwanatha
University of North Texas Health Science Center (Fort Worth, TX)

Dr. Monica Mitchell
MERA Associates, (Vienna, VA)

Students Cohort 3	Major
Hassan Goggins	Biology
Jaylee Scott	Biology
Jiwan Choi	Biology
Katelyn Green	Chemistry
Kayla George	Biology
Lyric Smith	Biology
Qmiya Mitchell	Biology
Sanaa Martin	Mathematics
Makayla Mondy	Biology
Tominque Stewart	Biology
O'Niece Roberts	Forensic Science
Tareon Ware	Computer Science
Leilani Gause	Forensic Science
Joshua Gates	Env. l Science
Lianna Cobb	Biology

iApply Student Scholar Research:

- ✓ Participation in comprehensive academic year and summer trainings
- ✓ Research experience in multidisciplinary teams across departments
- ✓ Mentoring and professional development using advanced technology
- ✓ Travel support for presentations at national conferences
- ✓ Creative development of useful products with an emphasis on scientific integrity and ethical conduct

iApply Student Scholar Requirements:

- ✓ Full-time sophomore/junior students majoring in Biology, Chemistry, Forensic, Behavior Analysis and Computer Science
- ✓ Minimum GPA of 2.8 or higher
- ✓ Student with under-represented status
- ✓ US citizen or Permanent Resident

Curriculum Transformation

STEM faculty trained through this program, continued the transformation of STEM teaching and learning in year 3. This team of STEM faculty are trained in VR required for curricular transformation for STEM lab courses.

Transform Faculty Cohort 3		
Veena Thapliyal (Chemistry)	Teresa Shakespeare (Biology)	Lina Merchan (Physics)

These transform faculty will perform curriculum transformation of additional STEM courses during Fall 2023 and Spring 2024.

Faculty Development:

- ✓ iApply team members (Drs. Chetty, Shakespeare and Prasad) attended the ABRCMS 2022 conference with 20 research students
- ✓ 5 Research posters presented for Cohort 2 summer research
- ✓ Co-PI Dr. Shakespeare attended ERN-2022 conference
- ✓ iApply scholars attended 18 lab workshops/ virtual presentations by scientists during Spring and Fall 2022

Faculty Mentors: Interdisciplinary Research Training		
Group A	**Group B**	**Group C**
-*Teresa Shakespeare (SSU- Biology) -Johnny Johnson (SSU-Biology) -Arthur Edison (UGA-Biology)	-*Manoj Prasad (SSU- Chemistry) -Takayuki Nitta, (SSU-Biology) -Karyn Cotta (South Univ- Pharmacy) -Mohammed Abdelsaid (Mercer Univ)	-*David Hongo (SSU-Biology) -Veena Thapliyal (SSU-Chemistry) -Tao Haung (SSU-Chemistry)
**Group leader*		

Faculty Awareness and Commitment to Excellence (FACE) Training Program

This program provides annual professional development and education research support for seven STEM faculty to inspire and sustain continuous curriculum reforms that will meet the needs of our undergraduates. The goal is to:

1) Update STEM course curriculum, refresh and reform teaching and learning environments

2) Facilitate strengthening the ability of students to be dynamic learners, thinkers, and creative innovators, well-prepared to be productive members of the scientific community.

FACE Faculty Cohort 3		
Juliana Trammel	Peter Mundey	Lina Merchan
Nicholas Silberg	Katherine Stewart	Xiaorong Zhang

This summer, FACE faculty will participate in a week-long set of workshops June 5-9, 2023

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