NSF-HBCU-UP (iApply) Program

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

E-News
iApply Program
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SSU Project Program Team

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External Advisory Board Members:
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SSU has received 5-year funding ($2.25M; 6/2020-5/2025) from the NSF for the project titled *"iApply": Early Interdisciplinary Applied Strategies to Strengthen STEM Education and Research at SSU*." This project aims to continue successful efforts to increase the number of underrepresented (UR) students who earn STEM BS degrees and enter STEM graduate programs and STEM careers. This project will address our current challenges, by incorporating new innovative strategies over 5-years to include:

1) Early, Active Teaching/Learning Curriculum Transformation by reforming introductory STEM lab courses, involving STEM faculty in the reformed lab delivery. Labs will be reformed with virtual reality (VR) enhancements;

2) Student-Centered, Applied, Interdisciplinary Research Training: Strengthen SSU's undergraduate research training model through a team-based applied interdisciplinary training approach,

3) iApply Faculty Awareness and Commitment to Excellence (**FACE**) Training Program and Teaching & Learning Resource Archive.

Over the 5-year term, this project through innovative curriculum reform, plans to increase the number of early engaged STEM students enrolled in VR curriculum enhanced courses. The successful implementation of iApply will add to our knowledge base on best practices to support and engage UR students in advance applied STEM research. Overarching goals will emphasize maintaining student interest in STEM career paths and will increase SSU STEM student retention and improve our graduation rate. The project will offer early student engagement and enhance student appreciation for the relevance of STEM to their lives and future careers, as well as increase the diversity of the future STEM research workforce.

Target	Activities	Outcome
Students	•Early, Active Learning •STEM-VR inspired creativity •Applied, Interdisciplinary Research Training •Targeted student mentored training	• Innovative and applied learning • Undergraduate research experience • Successful graduation and career • Student retention in STEM major
Curriculum	•Transform STEM learning through lab curriculum reform •Student centered-STEM VR teaching and learning inclusion	• Engaging and immersive lab curriculum • Application based reformed courses • STEM VR enhanced courses
Faculty	•Interdisciplinary applied STEM research projects •Training in STEM VR curriculum enhancement •Self-reflective professional development and peer mentoring	• Multidisciplinary STEM faculty teams • VR classroom trained faculty • Engaging student centered teaching

iApply Scholars:
- Full time Sophomore and Junior students majoring in Biology, Chemistry, Forensic, Behavior Analysis and Computer Science
- Minimum GPA of 2.8 or higher
- Student with underrepresented (UR) status
- US citizen or Permanent Resident

iApply Scholar Benefits:
Fifteen (15) talented iApply Scholars are selected each year to engage in a comprehensive academic year and summer training program:

- Involvement in student-centered applied and interdisciplinary research.
- Research experience in multidisciplinary teams across departments.
- Scholars receive support through mentoring and professional development workshops as well as through summer research training using advanced technology.
- Travel support is provided for scholars' presentations at national conferences.
- STEM career opportunities for undergraduate science majors are showcased.
- The iApply Scholar Program inspires creativity and the development of useful products with emphasis on scientific integrity and ethical conduct**.**

Faculty Awareness and Commitment to Excellence (FACE) Training Program:

FACE provides self-reflective professional development and education research support for STEM faculty to inspire and sustain continuous curriculum reforms that will meet the needs of our undergraduates. Seven (7) **COST** faculty (**Drs. Paramasivam Sivapatham**, **Mir Hayder**, **Johnny Johnson**, **Antonio Velaquez Hernandez**, **Edugie Ekuase**, **Alyssa Johnson**, and **Veena Thapliyal**) across STEM disciplines were selected as our 1st cohort of '**FACE**-faculty'. Training sessions are conducted 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.

The following training sessions were conducted AY 20/21 for the **FACE** faculty.

1) Increasing Student Interest with Case-Based Problem Solving by **Dr. Paula Lemons**, University of Georgia, 11/17/2020

2) Forensic Science in Virtual Reality (VR) Workshop by **Dr. Caroll Lastinger**, VP, Chief Scientist, Vizitech, USA 2/10/2021, and 2/11/2021

3) Chemistry in Virtual Reality (VR) Workshop by **Dr. Karla-Sue Marriott**, Savannah State University. 4/5/2021

4) **FACE** Summer Retreat Week to include presentations by **Dr. Caroll Lastinger**, VP, Chief Scientist, Vizitech, USA and **Dr. Saundra McGuire**, Louisiana State University Date: June 6/7-6/11, 2021

iApply Program Activities

iApply Program-Cohort I Students

1)	Christian Blue	Computer Science Major, Junior
2)	Alessa Brantley	Biology Major, Junior
3)	Olivia Christian	Biology Major, Junior
4)	Deja Coleman	Behavior Analysis, Sophomore
5)	Jaquan Hall	Biology, Sophomore
6)	Arnold Ky	Electrical Engineering, Junior
7)	Corey Leatherwood	Forensic Science, Sophomore
8)	Emmanuela Martin	Forensic Science, Junior
9)	Taylor McDaniels	Biology, Sophomore
10)	Dexter McMillan, Jr.	Forensic Science, Sophomore
11)	Josiah Riddick	Computer Science, Sophomore
12)	Jamiya Thomas	Biology, Junior
13)	Tyson Truedell	Biology, Junior
14)	Kalila Gay	Marine Science, Sophomore
15)	Premiere Williams	Forensic Science, Sophomore

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