

INNOVATIVE INTERVENTIONS THAT FORTIFY STUDENTS'
MATHEMATICAL KNOWLEDGE AND INCREASE SUCCESS DURING
THE FIRST TWO YEARS OF STEM UNDERGRADUATE STUDIES



Lincoln University



Lincoln University was founded in 1866 by the men of the 62nd and 65th United States Colored Infantries and their white officers, for the special benefit of freed African Americans.

MSIPP- Lincoln University

- In 2012 the Minority Serving Institution Partnership Program (MSIPP), a consortium program organized to build a sustainable STEM pipeline between DOE plants and laboratories and HBCUs was established.
- The MSIPP partnership provides STEM students with the cutting edge resources and technology housed at DOE facilities, ultimately increasing STEM student retention.



LU-IN-STEP

Lincoln University Investigative Science Technology and Engineering Program



Lincoln University
Summer Exchange Program

LU-IN-STEP



A 9-month MSIPP program that attracts and equips 20 African American males majoring in mathematics, **pre-engineering**, civil engineering technology, **physics**, and computer science with skills that make them employable and prepared for graduate study and research.





Lincoln University Investigative Science Technology and Engineering Program

Focus Areas:

Academic- peer tutors; study groups;
scholarships; internships; competitions

Professional – weekly meetings (resume writing,
mock interviews, phone interviews, networking
dinners, how to tie a tie, setting goals, appropriate
hair, etc.); field trips

Research – teams of students; mixed major
teams; rotate between projects (basic stamp kit,
quadcopter, CREO, nanotechnology)



Summer Exchange Program

- An MSIPP funded project where students are exchanged between schools to improve their skills prior to graduation.
 - Choose schools that have differences
 - Choose freshman- seniors
 - 3.0 or above GPA
 - Presentation requirement
 - Teach younger students

Summer Exchange Program

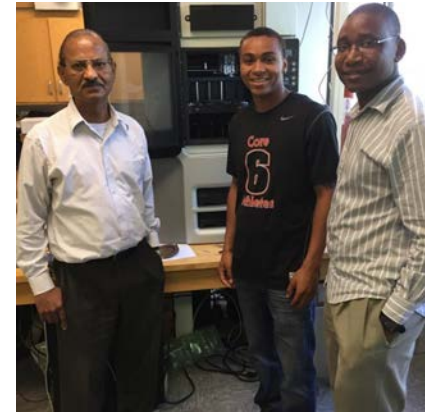


HAMPTON UNIVERSITY

- Summers
2014-2015 – Business of
Engineering Camp

**1 undergraduate
sophomore majoring
in Pre-Engineering**

**1 junior majoring in
physics**



Summer Exchange Program

HOWARD UNIVERSITY

Lincoln University during summer 2015 sent 1 female undergraduate student majoring in mathematics to Howard University for two months.

- Training using 3D printers and NX software
- Led summer engineering camp for local middle school
- Computer engineering research- 3D modeling with Howard faculty



2016 Improvements/Changes

LU-IN-STEP

- Female cohort not limited by race
- Support from Women's resource center
- Support from male initiative program

SUMMER EXCHANGE

- Expand to include
 - Hampton University – 2
 - Howard University
 - North Carolina A & T
 - Alabama A & M
 - KCP- NNSA



How are we accomplishing this goal?

Innovative interventions that fortify students' mathematical knowledge and increase success during the first two years of STEM undergraduate studies

1. Integrating meaningful research in our programs as mandatory processes so students see applications of what they learn in the classroom
2. Peer marketing
3. Stipends for academic success
4. Job shadowing opportunities early in their educational careers
5. No-nonsense approach (You need math!)



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questions

