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# Center for Mathematical Achievement in Science & Technology

**GRAMBLING STATE UNIVERSITY**  
*Where Everyone Is Somebody*

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WHERE DISCOVERIES BEGIN

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# History

- Funded by the National Science Foundation (NSF), HBCU-UP Program in 2005.
- HBCU-UP program “seeks to enhance quality of undergraduate science, technology, engineering, and mathematics as a means to broaden diversity and overall participation in the Nation’s STEM workforce.”

# Goals

- Improve student performance in mathematics.
- Increase the number of STEM majors.
- Increase the average grade point average of STEM majors.
- Increase STEM graduates enrolling in STEM graduate programs.
- Increase STEM majors engaging in undergraduate research projects.

# Components of CMAST

- Restructuring of Introductory Mathematics Courses
- Faculty/Professional Development Program
- Pre-Freshman Academy
- Rising Sophomore Academy
- Seminar Series
- Research Mentors
- Teacher’s Academy Program

CMAST is funded in part by the  
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# Overview

*Grambling State University (GSU) established the Center for Mathematical Achievement in Science and Technology (CMAST), in an effort to increase the number of Science-Technology-Engineering-Mathematics (STEM) graduates and enhance STEM programs.*



*The Center provides the means for GSU to engage in the systematic examination and improvement of instruction in mathematics, thereby addressing a major obstacle, one which has limited the retention of students in STEM fields. The Center gives the University the mechanism for reforming, as needed, its courses in mathematics. It focuses on enhancing the role and function of science and mathematics in the curriculum and significantly raises the profile of study and career opportunities in STEM fields. The Center supports research on teaching methodologies and strategies in the teaching of STEM courses. Additionally, the Center serves as a resource repository for high school teachers teaching STEM courses.*

## Restructuring of Mathematics Courses

The introductory mathematics courses are reformed in two ways:

- Use of application to introduce topics.
- Development of mathematics modules.

## Faculty Development

A very important goal of the CMAST program is to promote the growth and development of STEM faculty. This is indeed consistent with the mission and institutional goals of Grambling State University as well as the objectives of the HBCU-UP program.

The CMAST program supports and promotes faculty development by sponsoring workshops, seminars, and training in the use of instructional tools that will enable the effective integration of new and innovative teaching strategies into STEM courses.

## Institution of a Scholars Program

The purpose of the Scholars’ Program is to enhance the science/mathematics foundation of STEM majors. This is done by providing “enrichment” activities that include a Summer Pre-Freshman Academy.



## Pre-Freshman Academy

The Pre-Freshman Summer Academy invites newly admitted students majoring in a STEM area to participate in a two-week session that is designed to increase student success. The academy focuses on study skills, quantitative reasoning, and mathematics drills. Students participating in the academy receive complimentary housing during the two-week session, meals, a \$400 Stipend and a \$500 textbook award.

## Rising Sophomore Academy

At the end of the freshman year, Pre-Freshmen Academy students are invited to participate in a summer research program on the campus of Grambling State University. This Academy focuses on the development of research techniques. Students participating in the academy receive complimentary housing, during the two-week session, meals, a \$600 stipend and a \$600 textbook award.

## Mentoring/Research

Beginning with the sophomore year, students participate in research guided by their respective faculty members. During the summer, students are encouraged to participate in undergraduate summer research opportunities at other universities and research laboratories.

## Seminar Series

The seminar series introduces STEM majors to various topics in science and stimulates student interest in pursuing graduate studies in STEM areas.

## Graduate School Preparation

The GRE preparation workshop focuses on essay writing and the verbal component of the exam. CMAST provides partial support for the GRE registration fee. During the junior year, each scholar is required to research graduate schools that have STEM programs. CMAST provides travel support for scholars to visit graduate schools.

