SPACE SCIENCE AND TECHNOLOGY EDUCATIONAL PROGRAM (SSTEP) FOR K-12 STUDENTS IN SOUTHEAST TEXAS: A MULTIDISCIPLINARY, MULTI-INSTITUTIONAL CONSORTIUM STUDY AT LAMAR UNIVERSITY-BEAUMONT: A. V. Murali, SSTEP, Department of Geology, P. O. Box 10031, Lamar University-Beaumont, TX 77710

A three-year multidisciplinary and multi-institutional consortium study is proposed to develop a comprehensive, structured, and classroom-tested Space Science and Technology Educational Program (SSTEP) dedicated to K-12 education in southeast Texas (Region V school district) at Lamar University-Beaumont (LU-B). The goals of the program are to employ space science and technology course work to motivate K-12 students towards excellence in science and mathematics and to enhance the curriculum. A special effort will be made to improve and document the minority student academic achievement levels in the region through the program [minority students constitute ~71% of the total ~20,000 students in Beaumont Independent School district (BISD) and ~36% of the total ~87,000 students in southeastern Texas].

The SSTEP will involve both in-kind and monetary contributions, expertise, and cooperation of diverse communities of stakeholders including Region V Education Center Personnel, BISD administrators and teachers, local planetarium directors, parents, faculty members of Lamar University-Beaumont (Fig. 1). The advantages of the proposed SSTEP are:

(a) the availability of experienced teacher-researchers and the ongoing space-related research activities/facilities in place at LU-B,

(b) existence of Region V and BISD infrastructure that will be used to continuously monitor and provide feed back of the impact of the program on the academic performance levels of diverse ethnic groups of students, and

(c) proximity of NASA, Johnson Space Center and the Center for Advanced Space Studies (CASS)/Lunar and Planetary Institute (LPI), Houston, to LU-B--all dedicated to promote space science educational initiatives and willing to provide teachers manuals, hands-on educational materials, and speakers.

The important milestones of the proposed SSTEP will be: (a) enhanced K-12 educational performance and technological competence of the students in southeast Texas, (b) improved public appreciation (scientific literacy) of the goals/achievements of the National Space Program, and (c) a comprehensive, classroom tested, K-12 space science and technology curriculum including teachers manuals that can be used readily by other schools in the country.

Educational methods in Texas are undergoing a much needed paradigm shift that focuses on hands-on, interactive problem solving activities and educators at all levels are receptive/eager to implement the SSTEP because it emphasizes such activities.

This is SSTEP, Geology Department, Lamar University-Beaumont publication no. 1.
Fig. 1

SPACE SCIENCE & TECHNOLOGY EDUCATIONAL PROGRAM (SSTEP)

SPACE SCIENCE & TECHNOLOGY
ASTRONOMY ➔ NASA/JSC ➔ PLANETARY SCIENCE

BIOMEDICAL RESEARCH

LAMAR UNIVERSITY
GEOLOGY ➔ CHEMISTRY ➔ PHYSICS

BIOLOGY ➔ ENGINEERING

EDUCATION

REGION V
BISD

Math & Science Curriculum Career & Technology Education Development

Regional Schools Secondary and Primary

CENTER FOR ADVANCED SPACE STUDIES, HOUSTON
LPI ➔ DEP

Parents/Public Space Education Programs
Texas Energy Museum

Workshops for Intermediate and High School Students
Planetarium PNISD

Workshops for Elementary Students
Planetarium BISD

Curriculum Enhancement Workshops for Teachers
Lamar Univ. Campus

JSC: JOHNSON SPACE CENTER, HOUSTON
LPI: Lunar and Planetary Institute
DEP: Division of Educational Programs
PNISD: Port Neches Independent School District
BISD: Beaumont Independent School District