TEXAS SPACE GRANT CONSORTIUM
DESIGN CHALLENGE

FACT SHEET - FALL 2003

IMPACTING THE NEXT GENERATION OF SPACE-RELATED INVENTION & DESIGN

WHAT IS THE TSGC DESIGN CHALLENGE?

Sponsored by NASA and administered by the Texas Space Grant Consortium, the **TSGC DESIGN CHALLENGE** is a unique academic experience that exposes undergraduate students to space-related careers as they work toward solving a research/design objective of importance to NASA and its mission.

CHALLENGE design topics are submitted for student selection by researchers working on real-world projects of interest to the space community. Students work as a team to meet the design objective over the course of one or two semesters, all-the-while interacting with a workplace mentor. The overall experience pairs both the student team and faculty advisor with a professional working in a space-related field; exposes students to current workplace initiatives; and provides opportunities in scientific research, hands-on design, meeting presentation and educational outreach.

CHALLENGE PROGRAM OBJECTIVE:

Impact space-careers workforce. The **TSGC DESIGN CHALLENGE** strives to encourage students to maintain interest and seek careers in space-related fields by engaging them in projects that whet their appetite for additional space-related research and design. At the same time, **CHALLENGE** participation enables faculty to further research interests and widen opportunities for curriculum development.

Bridge school-to-work with engaging topics. A wide range of research and design areas are available to student teams during the Fall 2003 semester, including: solar powered transportation, heat transfer, temperature control, inventory management systems, simulator processes, EVA, robotics, habitability on ISS and lunar/mars rover.

CHALLENGE PROGRAM GOALS:

- Invigorate student interest in academic pursuits that solidify interest in space-related careers.
  - real-world research and hands-on design
  - site-visits and field experiences
  - internships, co-op opportunities
  - employment trends within the industry
  - web-based resume postings
  - collaborations outside the academic community
  - funding of student design initiative
  - create a link to K-12 learning
- Encourage institutions of higher learning to implement, improve or expand the design curriculum.
  - structured and funded design opportunity
  - engage students/faculty in design process
  - higher-level teaming of faculty/mentors
  - resources to motivate faculty involvement
  - bonds built between academia and industry

HOW DOES THE CHALLENGE WORK?

- Structured to accommodate a variety of design sequences taught in curriculums throughout the State of Texas in institutions of higher learning.
- Incorporates eight team-directed increments that build upon one-another through the course of a semester: BASE, three specific design Levels, and four Option Areas.
- Teams earn funding to support both the design effort and site visits as program milestones are completed.
- Workforce Development Initiatives include incorporation of site visit, field experience, mentoring, co-op / internship opportunities, resume book.

IT'S NOT JUST ROCKET SCIENCE

WWW.TSGC.UTEXAS.EDU/CHALLENGE