ESMD Space Grant Project

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ESMD Space Grant Project Opportunities

- Lunabotics Mining Competition
- Exploration Research Paper Competition
- Systems Engineering Paper Competition
- Senior Design Projects
- Faculty Projects
- Student Internships
- Solicitation
Lunabotics Mining Competition

Design it. Build it. Dig it.

Lunabotics Mining Competition

May 25 - 28, 2010
Kennedy Space Center

On the NASA portal at
www.nasa.gov/lunabotics

and on Facebook at
www.facebook.com/lunabotics

Receive up to $5,000 to build, design and compete a lunar regolith excavator

Win 1st place and receive $5,000 and VIP Kennedy launch tickets

GRAND PRIZE: INVITATION TO DESERT RATS
Lunabotics Mining Competition

• Eligibility:
  – Enrollment in a U.S. college or university
  – One faculty or industry advisor with a U.S. college or university affiliation
  – Two or more undergraduate or graduate students

• In addition to the on-site competition, the following items are required:
  – Systems Engineering Paper
  – Outreach to Informal Education or K-12 Education

• Teams may also choose to participate in the following optional items:
  – Slide Presentation
  – Digital Video of Team’s Designing and Building Experience
  – Team Spirit
  – Intercollegiate Collaboration with Minority Serving Institutions
  – Multidisciplinary Team Make-Up
Write it. Edit it. Submit it.

2010 ESMD Research Paper Competition

4 Exploration Related Subjects

Paper Deadline
January 25, 2010

Four 1st place prizes of $3,500 scholarships--one for each research topic

On the ESMD Website at

Win 1st place and receive VIP seating at an upcoming Kennedy launch
Research Paper Competition

- Eligibility:
  - U.S. citizens in an undergraduate or graduate studies program
  - Papers may be submitted by an individual or team
  - Papers that have been previously submitted in other competitions are permitted
- Topics:
  - Ground Operations: Spacecraft Landing and Recovery Architecture
  - Historical Approaches and Ideas for the Future
  - Lunar and Planetary Surface Systems: Synergistic degradation effects of materials exposed to radiation, micrometeors, thermal sinks and lunar dust
  - Propulsion: Loading of Cryogenic Propellant in Space Launch Vehicle
  - Spacecraft: Determination of the Optimum Internal Cockpit Layout
Systems Engineering Paper

- Students become familiar with the NASA systems engineering process
- Papers used in other competitions or for a senior design projects are acceptable
- Papers will be due in Spring 2010
Senior Design Projects

• ESMD Provided Mission Challenges
  – Obtain senior project funding for buying materials, building prototypes, etc.
  – Receive guidance from a NASA technical expert
  – Gain hands-on experience on a project related to the Nation’s space exploration mission
  – Learn NASA’s systems engineering process
Faculty Projects

• Fellowships
  – Become a technical expert on a specific NASA project
  – Teach a senior design course using that new knowledge

• Senior Design Curriculum and Implementation
  – Obtain funding for the university to implement the outlined and piloted senior design courses
  – Meet the quality standards of an ABET-accredited program
  – Prepare students to work for NASA and space industry partners
Faculty Projects

- Faculty Workshop (Summer 2010)
  - Attend a faculty workshop hosted at Kennedy Space Center
  - Learn how to implement a senior design curriculum that introduces students to systems engineering
  - Obtain funding for eligible faculty to cover travel expenses
• KSC will no longer be reviewing applications or placing students at NASA centers
• ESMD internships will be with space industry partners
• Funding can be matched by individual companies
• Interested partners and project descriptions will be posted in PBMA
Solicitation

coming soon!