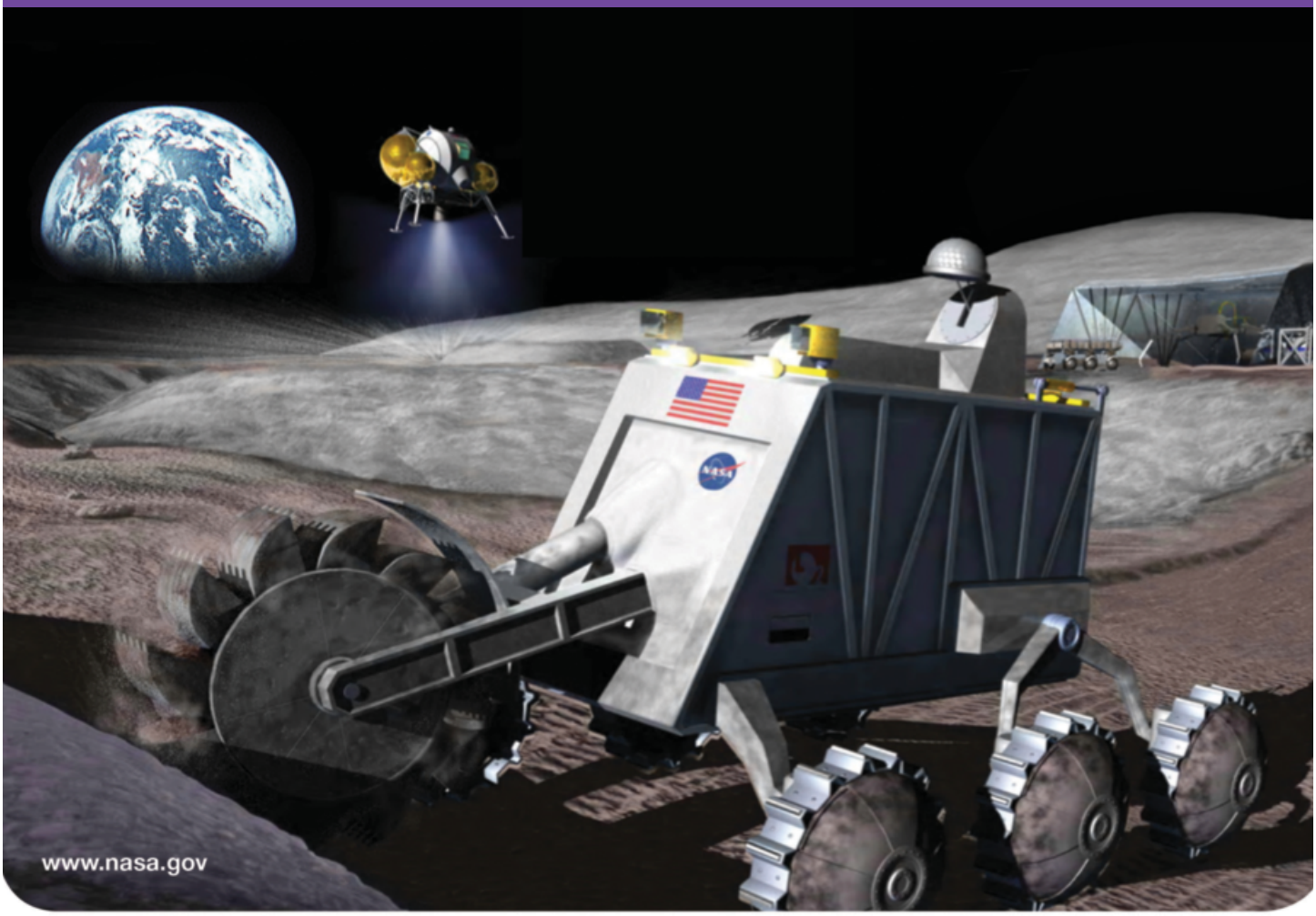
National Aeronautics and Space Administration

Design it. Build it. Dig it.

Lunabotics Mining Competition

PRESS INFORMATION



What is the Lunabotics Mining Competition?

The Lunabotics Mining Competition is a university-level competition designed to engage and retain students in science, technology, engineering and mathematics (STEM). NASA will directly benefit from the competition by encouraging the development of innovative lunar excavation concepts from universities, which may result in clever ideas and solutions that could be applied to an actual lunar excavation device or payload. The challenge is for students to design and build a remote controlled or autonomous excavator, called a Lunabot, that can collect and deposit a minimum of 10 kilograms of lunar simulant within 10 minutes. The complexities of the challenge include the abrasive characteristics of the lunar simulant, the weight and size limitations of the Lunabot, and the ability to control the Lunabot from a remote control center. Scoring for the mining category will require teams to consider a number of design operation factors such as dust tolerance and projection, communications, vehicle mass, energy/power required, and level of autonomy.

Who is eligible to compete?

Undergraduate and graduate student teams enrolled in a U.S. or international college or university are eligible to compete in NASA's Lunabotics Mining Competition. Design teams must include: at least one faculty member with a college or university and at least two undergraduate or graduate students. NASA has not set an upper limit on team members. A team should have a sufficient number of members to successfully operate its Lunabot. Registration is limited to the first 50 approved teams. Registration is limited to one team per university campus. Internationally, registration is limited to five teams per country.

What are the requirements to compete?

In accordance with the rules, teams will compete in up to five major competition categories including: on-site mining, systems engineering paper, outreach project, slide presentation (optional), and team spirit (optional). Additionally, teams can earn bonus points for mined and deposited BP-1 in the competition attempts, having multidisciplinary teams, and collaborating between a majority institution and a U.S. Minority Serving Institution (MSI).

What can teams win?

The team with the most points from all categories will win the grand prize, the Joe Kosmo Award for Excellence, and will receive a trophy, team certificates for each member, and a $5,000 team scholarship. Awards for other categories include monetary team scholarships, a school trophy or plaque, team certificates, and Kennedy Space Center launch invitations.

How are the teams chosen?

The teams are selected on a first come basis. Once registration is open, the first 50 teams who submitt a valid registration are the teams who are allowed to compete. However, our international competitiors are limited to five teams per country.

Why do we do it?

The competition is a breeding ground for collaboration and innovation for students. NASA technical experts, sponsors and students engage in unique discussions about lunar mining. One faculty member stated that “my students learn more about engineerng in this week [of competition] then four years of college. A NASA researcher remarked that “my budget allows one protoype per year; Lunabotics provides 50 prototypes in one week.”

LunaStats

In 2012, eight countries participated in Lunabotics; Bangladesh, Canada, Colombia, India, Mexico, Romania, South Korea and the United States.

Of the 72 teams registered in the 2012 competition; 57 teams participated, 55 teams competed, 791 students participated as did 118 faculty advisors.

During the 2012 Lunabotics Mining Competition 613 kg of BP-1 was mined by the 13 qualifying teams. That translates to 1,351 lbs of swiss cheese.

It took 399 Volunteers and staff, 69 judges, 14 corporate sponsors and two contributing sponsors to make last year’s competition possible.

The word is spreading…As of October 2, 2012, googling “Lunabotics” returned 83,600 results.

2013 Lunabotics Mining Competition U.S. Teams

ASU Lunabotics
Arizona State University

Case Lunabotics Team
Case Western Reserve University

Blasterbotica
Colorado School of Mines

Moon pi
Embry-Riddle Aeronautical University

Persistence
Florida Institute of Technology

Team LunaCY
Iowa State University

Golden Eagles
John Brown University

Miami University Lunabotics
Miami University

Raider Robotics
Middle Tennessee State University

MnM GoBotics
Milwaukee School of Engineering

Montana ALE
Montana State University

Unknown at this time.
Morgan State University

Unknown at this time.
Oakton Community College

Purdue Lunabotics
Purdue University

Lunateers
Temple University

TAMU-CC Sandpipers
Texas A&M University Corpus Christi

S.T.A.C.E.E.
The University of Akron

The Lunar Tide
The University of Alabama

UNCC Miner Niners
The University of North Carolina at Charlotte

UTPA Broncs
The University of Texas-Pan American

Luna-B
University of Alabama in Huntsville

LunAlaska
University of Alaska Fairbanks

Space Hawgs
University of Arkansas

University of Florida
University of Florida

Illinois Robotics in Space (IRIS)
University of Illinois at Urbana-Champaign

Red Rover
University of Nebraska-Lincoln

UNH LunaCats
University of New Hampshire

Raptor
University of North Dakota

University of Portland
University of Portland

USU Lunabot Team
Utah State University (RCDE Campus)

Virginia Technomaniacs
Virginia Tech

Moutaineers
West Virginia University

2013 Lunabotics Mining Competition International Teams

Australia:

Sydney Lunabotics
University of Sydney

Bangladesh:

BUET MechaTrons
Bangladesh University of Engineering & Technology

CUET Terminators
Chittagong University of Engineering & Technology

Lunatian -G2
Islamic University of Technology

MIST Lunabotics EKUSH
Military Institute of Science and Technology

Team NSU-NASA Lunabotics '13
North South University

Canada:

McGill LunarEx
McGill University

Queen's Space Engineering Team
Queen's University

York University Rover Team
York University

Colombia:

SPIICA Trinum
Instituto de Astrobiologia Colombia

Robocol
Universidad de los Andes

India:

KMC Lunabotics
Kirori Mal College

RoboManipal
Manipal University

TEAM STEER
Saveetha University

Team Screwdrivers
SVKM's NMIMS Mukesh Patel School of Tech. Mgmt. & Engg.

KU MOONBOTICS
University Institute of Engineering and Technology, Kurukshetra University

Mexico:

LUNAMbotics
Universidad Nacional Autonoma de Mexico

Poland:

HUSAR
Warsaw University of Technology

2013 Sponsors

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