

## At a Glance

- One-year program
- Fall and spring semesters at CUA and NASA-Goddard Space Flight Center
- Summer at NASA-Goddard
- Four to five elective courses at CUA in engineering and/or physics per semester
- Opportunities in hardware development and testing of space- and ground-based instruments
- Same requirements as the Brazilian Science without Borders Program

## Fast Facts about Engineering and Physics

- B.S., M.S., Ph.D. degrees in biomedical, civil, electrical, mechanical engineering, and computer science; M.S. degree in materials science and engineering
- B.S., M.S., Ph.D. degrees in physics. Research programs in astrophysics, biophysics, materials science, nanoelectronics, nuclear and hadronic physics, solid-state physics, and solar physics
- Internship opportunities in Washington, D.C., metropolitan area

## Fast Facts about CUA

- About 7,000 enrolled students
- Centrally located, garden campus
- On-campus sports and fitness facilities
- More than 100 student clubs and organizations

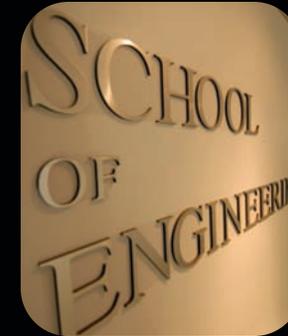
## Fast Facts about Washington, D.C.

- Capital of the United States of America
- Free world-class museums and monuments
- Professional soccer, basketball, football, baseball, hockey

Wide variety of concerts and arts



# Space Science and Engineering Program



School of Engineering — Department of Physics

The Catholic University of America

**Email:** demello@cua.edu

**Telephone:** 202-319-5325

**URL:** [http://faculty.cua.edu/demello/csf/index\\_csf.html](http://faculty.cua.edu/demello/csf/index_csf.html)

*Celebrating 125 Years*

**THE CATHOLIC UNIVERSITY OF AMERICA**  
*Washington, DC 20064*

The Catholic University of America admits students of any race, color, national or ethnic origin, sex, age, or disability.

**THE CATHOLIC UNIVERSITY OF AMERICA**

*School of Engineering  
Department of Physics*



## Space Science and Engineering in Washington

- Departamento de Física e a Escola de Engenharia da CUA estarão recebendo estudantes do Programa Brasileiro Ciência sem Fronteiras durante o primeiro e segundo semestre de 2012
- Os estudantes brasileiros que forem contemplados com bolsas dentro do programa farão de 6-8 cursos na CUA e trabalharão nos projetos hands-on no Goddard Space Flight Center sob a supervisão dos cientistas e engenheiros da NASA
- Os cursos serão escolhidos dependendo do interesse do estudante e do estágio em que o estudante se encontra no curso brasileiro
- Este ano o programa se concentrará principalmente em estudantes cursando engenharia elétrica e mecânica no Brasil, mas outras áreas da engenharia e física também serão consideradas dependendo da demanda
- Os interessados devem entrar em contato direto com a professora Duília de Mello no email [duilia.f.demello@nasa.gov](mailto:duilia.f.demello@nasa.gov) ou [demello@cua.edu](mailto:demello@cua.edu)
- Os estudantes deverão procurar informações sobre o CsF e seguir as regras do programa brasileiro

## Projects at NASA-Goddard Space Flight Center

The NASA-Goddard Spaceflight Center (GSFC) is currently building in-house propulsion systems for the Magnetospheric MultiScale (MMS) mission and the SMART mission. Students will assist in designing, analyzing, and building these instruments and propulsion systems; ideal candidates would have experience with basic laboratory tools and be team players.

- The MMS mission is a constellation of four spacecraft with a blowdown hydrazine propulsion system consisting of four diaphragm propellant tanks and 12 thrusters in each satellite
- The SMART mission is a demonstration mission with advanced onboard technologies including a new High Performance Green Propulsion system
- Two instruments are being constructed: PIPER (balloon-borne telescope) and CLASS (ground-based instrument) to measure polarization of the cosmic microwave background to a high precision in order to search for evidence of an inflationary epoch early in the universe
- The Balloon Experimental Twin Telescope for Infrared Interferometry is being designed at GSFC for high angular resolution astronomy at Far-Infrared wavelengths and to set the stage for future space interferometers



## Space Science Opportunities for CUA Students

Catholic University is located near and has ongoing relationships with several facilities and organizations involved in space science and related areas:

- NASA-Goddard Space Flight Center in Greenbelt, Md.: CUA students participate in ongoing projects, including engineering, earth sciences, and astrophysics.
- Universities Space Research Association in Columbia, Md.: Enables collaborations between universities and other organizations to develop knowledge associated with space science and technology.
- Consortium of Universities in the Washington, D.C. area: CUA is one of 14 universities that provide opportunities for cross registration of students so they can pursue a space science curriculum at CUA and take additional courses at the other consortium universities.
- Space Policy Institute, Washington, D.C.: Offers graduate courses at The George Washington University in space policy and space law.
- Maryland Space Grant Consortium, Baltimore, Md: Offers a wide variety of activities through Johns Hopkins University that target higher education, scientific research, and public outreach.