



[URE OMSS 2003](#)

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URE OMSS Researcher - James Smith, Jr.

Messenger Mentors - Walter Mitnick and Lisa Segal

Research Project

Operating the Messenger and Stereo database system and implementing upgrades to the systems using Visual Basic. Beginning Perl/TK upgrades to the APL Epoch MOC.

THE MESSENGER PROJECT

A student intern program with mission engineers sponsored by NASA/Minority University Research and Education Division and The John Hopkins University/Applied Physics Laboratory MESSENGER, a NASA discovery mission, is a **M**ercury **S**urface, **S**pace **E**nvironment, **G**eochemistry, and **R**anging mission to orbit Mercury following two flybys of the planet. Understanding Mercury, and the forces that have shaped it, is fundamental to understanding terrestrial planets and their evolution. Scheduled to launch in 2004, MESSENGER will investigate key scientific questions regarding Mercury's characteristics and environment using flyby data during a year-long orbit. View the Messenger web site [here](#).

WELCOME LETTER



Dr. Linda Hayden

Center of Excellence in Remote Sensing Education and Research
Elizabeth City State University
Elizabeth City, North Carolina 27909

Dear Dr. Hayden:

The Minority University-Space Interdisciplinary Network (MU-SPIN) Program is proud to communicate its participation in your proposal entitled Space Science Research for Mathematics, Science and Education Majors within the MU-SPIN and ADMI Consortium of Minority Institutions. This activity will serve a vital role in making sure that the minority education community plays a role in supporting NASA's ability launch some of the most challenging engineering and science feats known to mankind. Traditionally, the minority community has to learn what others have done, but with this activity we can be more proud because we participated in the creation of the spacecraft, its orbit, its communication back to earth and the science results. This activity is truly visionary and MU-SPIN is very pleased to play an important role.

Thank you for your invitation to be a part of this exciting education effort. Good luck with your proposal!

Sincerely yours,
James Harrington
MU-SPIN Project Manager

MESSENGER INTERNS

The MU-SPIN Messenger Program aids interns by:

- Providing internship placements within the MESSENGER Education Program Office.
- Providing internships in Astrophysics at SCSU
- Providing internships within the Applied Physics Lab related to MESSENGER
- Coupling interns with a NASA OSS mentor for 8 weeks each summer.

The MESSENGER project is needed to answer the science questions that include those below. MU-SPIN Interns are actively involved in assisting scientists to answer these questions.

- What planetary formational processes led to the high metal/silicate ratio in Mercury?
- What is the geological history of Mercury?
- What are the nature and Origin of Mercury's magnetic field?
- What are the structure and state of Mercury's core?
- What are the radar-reflective materials at Mercury's poles?
- What are the important volatile species and their sources and sinks on and near Mercury?

The APL NEWS

The Johns Hopkins University • Applied Physics Laboratory

Interns Boost MESSENGER Mission

by Mike Buckley

Alexander Torres spent last summer as a typical college undergrad, traveling a bit and taking some high-level math courses. A year later, the soon-to-be senior at City College of New York has a front seat on a major NASA mission, monitoring power-system data for the APL engineers building the Mercury Surface, Space ENvironment, GEochemistry, and Ranging (MESSENGER) spacecraft in Building 23.

Nothing like jumping from the classroom to the real world, right?

"At first it was daunting," says Torres, an electrical engineering major. "But as we got a few weeks into it and I felt comfortable with the system, it was more like, 'Oh, you want this type of information? I'll get it for you.'"

The MESSENGER mission is getting a boost this summer from the talents of 14 college students in the Minority University-SPace Interdisciplinary Net-

work (MU-SPIN), a wide-ranging NASA program of workshops, partnerships and other initiatives designed to train the agency's next generation of minority scientists and engineers.

The students, from schools in New York, North Carolina, South Carolina and Texas, have been sharpening their already formidable technical skills by working with APL experts in spacecraft integration and testing, mission design, mission operations, mechanical support and Web site management. The internships started in June and will end Aug. 8.

"It's been an opportunity to work side by side with top engineers," says Gregory Pierce, another City College of New York student, who is helping Mission Design Team Lead Jim McAdams develop animation of MESSENGER's planned flight to the planet Mercury.

"You always read about finished projects in research papers or in magazines, but here you see how those projects come together bit by bit. When they give you a project and you do it well, that's tremendous for your self-confidence."

Other MESSENGER team members advising the students include James Leary, Ted Hartka, Rex Richardson, Martin Gomez, Rich Dragonette, Robin Vaughan, Bob Vernet, T.J. Mulich, Walter Mitnick, Rob Gallagher, Hadi Navid and Barbara Northrop.

MESSENGER, a NASA Discovery Program mission to orbit Mercury, is scheduled to launch next spring. MU-SPIN is a MESSENGER Education and Public Outreach team partner.

For more information on the mission, visit messenger.jhuapl.edu. For more information on MU-SPIN, visit muspin.gsfc.nasa.gov. ❖

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The MESSENGER spacecraft serves as a backdrop for interns (from left) Joseph Sullivan, Kenneth Brown, Alexander Torres, Richard Balcarran, Paula Washington, James Smith Jr., Vincent Davis, Marcelite Jenkins, Marcello Rodriguez, Amarilis Bueno, Gregory Pierce, Andres Terrazas, Ayanna Moses and Willie Caraballo.

