

08/03

**ANIA
COTTON
INTERNSHIP
PRESENTATION**



Senior, Hampton University

02

CONTENT OUTLINE

Overview

RASC-AL/ MIC

In-Office Projects

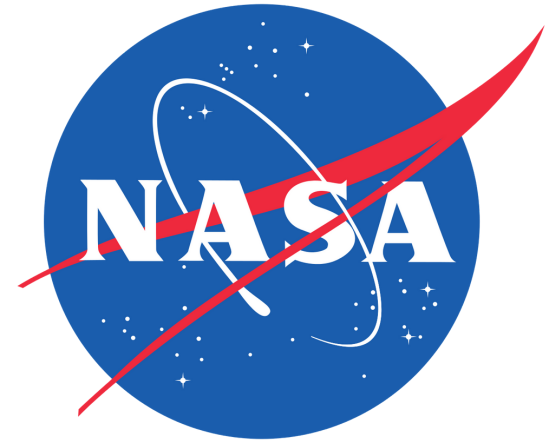
Outreach Projects



THIS SUMMER...

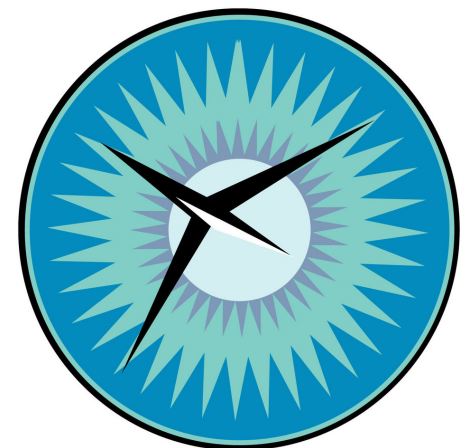
I got the opportunity to assist the NIA E&O Office with various projects, contribute to the development of Hampton University's CARE and assist with outreach projects in the Hampton-Roads community.

I also took advantage of the professional development opportunities offered by the program, and got to network & connect with students, researchers, and faculty on different levels.



HU:CARE

CENTER FOR ATMOSPHERIC RESEARCH AND EDUCATION



04

RASC-AL FORUM COCOA BEACH, FL



- Photography
- Social Media Management
- Website Edits
- Key Activity/ Final Report
- Chris Jones' Intern Search

05

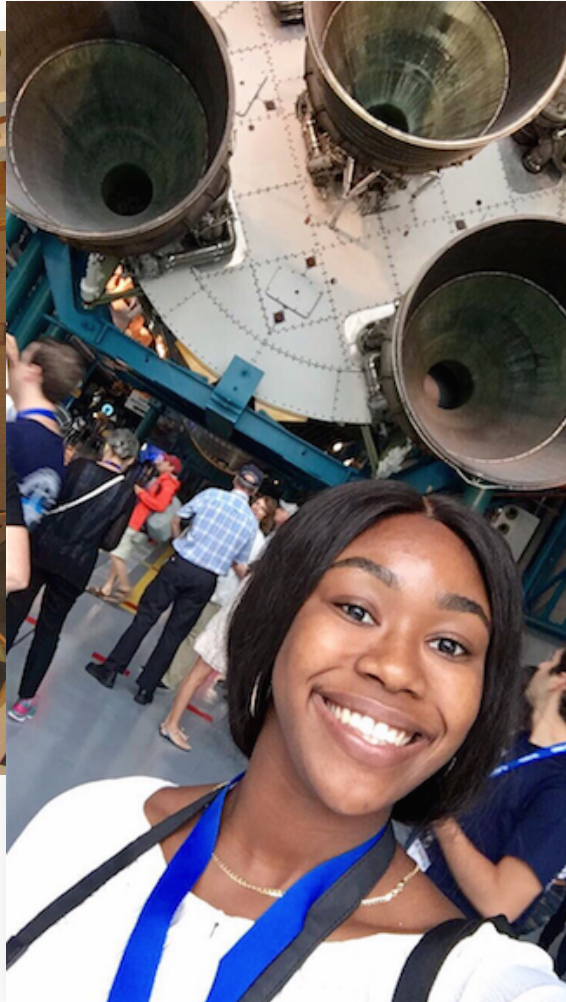
RASC-AL FORUM

COCOA BEACH, FL



06

RASC-AL FORUM COCOA BEACH, FL



07

RASC-AL FORUM COCOA BEACH, FL



NASA's Revolutionary Aerospace System Concepts – Academic Linkage (RASC-AL) Forum was held in Cocoa Beach, FL from May 30th – June 3rd, 2016, where Virginia Polytechnic Institute and State University claimed 1st place overall and the University of Maryland received the distinction of 2nd place overall. RASC-AL is one of two collegiate design competitions sponsored by NASA's Human Exploration and Operations Mission Directorate through Langley's Space Missions Analysis Branch. A complete list of all finalist teams that participated in the forum can be found at rascal.nianet.org.

The 2017 RASC-AL competition challenged teams to demonstrate revolutionary approaches to help develop the capabilities, and infrastructure required to live and work at destinations beyond ~~our~~ Earth orbit. This year, 94 students, 14 faculty and 13 NASA/industry representatives physically attended the 2017 RASC-AL Forum, along with NIA representatives Shelly Spears, Stacy Dees, Victoria O'Leary, and Ania Cotton. Fourteen university teams from around the country designed full aerospace mission architectures, budgets, and project schedules based on one of four themes:

1. Lightweight Exercise Suite
2. Logistics Delivery System
3. Commercially Enabled LEO/ Mars Habitable Module
4. Airlock Design

NIA RASC-AL POC: Shelley Spears, RASC-AL Program Manager, shelley.spears@nianet.org, 757.325.6732

LaRC RASC-AL POC: Pat Troutman, Space Mission Analysis Branch, patrick.a.troutman@nasa.gov, 757.864.1954



08

MARS ICE CHALLENGE NASA LARC



- Preparation Before Competition
- Tracking Engagement
- Photography
- Key Activity
- Outreach

09

MARS ICE CHALLENGE

NASA LARC



MARS ICE CHALLENGE

NASA LARC



NASA's Revolutionary Aerospace System Concepts – Academic Linkage (RASC-AL) Forum Special Edition: Mars Ice Challenge competition was held at NASA Langley Research Center in Hampton, VA from June 13th – 15th, 2017, where West Virginia University earned 1st place overall. RASC-AL is one of two collegiate design competitions sponsored by NASA's Human Exploration and Operations Mission Directorate through Langley's Space Missions Analysis Branch. The Mars Ice Challenge was created to support NASA and its focus on improving ISRU capabilities over the next few decades, and offers a unique way for NASA LARC to recognize RASC-AL's important place in its history while also linking the competition to its future.

The 2017 RASC-AL Special Edition: Mars Ice Challenge competition challenged teams to demonstrate revolutionary approaches for In-Situ Resource Utilization (ISRU) capabilities on Mars, particularly extracting water from simulated Martian subsurface ice. The competition included 8 different university teams from around the country, and was supported by NIA program staff, Shelley Spears, Stacy Dees, and Victoria O'Leary.

Ninety-one students, 18 faculty and 10 NASA/Industry representatives physically attended the 2017 RASC-AL Special Edition: Mars Ice Challenge Competition. The competition received coverage from the Daily Press, WVEC-TV Channel 13, and over 250,000 views on NASA 360's Facebook Live posts.

NIA RASC-AL POC: Shelley Spears, RASC-AL Program Manager, shelley.spears@nlanet.org; 757.325.6732

LaRC RASC-AL POC: Pat Troutman, Space Mission Analysis Branch, patrick.a.troutman@nasa.gov; 757.864.1954

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Each team also had faculty advisors.

The students had varied reasons for participating in the challenge – but they said they learned something new about Mars and what it will take to get there and stay there.

"We definitely romanticize it," said Colorado School of Mines student Caroline Ellis.

Before the students got to work, they were warned that Mars is nothing like they've seen in the movies or on TV shows.

"It's a very harsh environment," said Kevin Kempton, program element manager at NASA's Game Changing Development Program Office. "Your equipment will be chugging away for maybe years at a time doing all of these operations."

"It's all about learning and adapting," said Patrick Troutman, Human Exploration Architecture Integration lead at NASA Langley.

Troutman and Langley Deputy Director Clayton Turner gave NASA Acting Deputy Administrator Lesa Roe a tour of the challenge, which was held in Langley's research aircraft hangar.

"This is awesome," Roe said as she marveled at the students' work.

It was more than just a drilling technology demonstration the students had to undertake – they also submitted a technical paper outlining their concept's adaptability to show how their system could be used on Mars and how it could be modified to account for the huge differences between the two planets.

Wyman, NASA Langley Deputy Administrator Lesa Roe and NASA Langley Human Exploration Architecture Integration Lead Patrick Troutman tour the work area June 15 of the Mars Ice Challenge.
Credits: NASA/David C. Bowman



Pictured is the Mars Ice Challenge winning team from West Virginia University.
Credits: NIA/Ania Cotton

IN-OFFICE PROJECTS



- Foundation Search Grant Book
- BIG Idea Challenge 2018 Preparation
- HU:CARE Website Development

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IN-OFFICE PROJECTS

Foundation Search Grant Book.pdf (page 1 of 470)

Foundation Search Grant Boo...

My Best Prospects Funder List

Date Printed: June 27, 2017

Project Name: NIA Outreach

Search Criteria:

State: Virginia

County: N/A

Granting Category: Education

Giving Interests: "STEM", "Teacher Preparation", "Graduate Education"

Type of Support: Program Funding, Research Funding

Total Funding Amount Needed: \$50,000

My Tags: N/A

Thesaurus: OF

For Similar Funder
Categories: State Grants

#	Prospect	Ranking	Score	Average Score	Low/High Scores	Recommended Ask Amount
1	BAYER USA FOUNDATION	1	76	75	58.88	\$50,000
2	LILLY ENDOWMENT INC.	2	68	87	67.94	\$50,000
3	JM FOUNDATION	3	66	82	57.90	\$36,000
4	GRAINGER FOUNDATION INC.	4	64	79	64.91	\$10,000
5	ANDREW W. MELLON FOUNDATION	5	63	82	62.89	\$50,000
6	THE COMMUNITY FOUNDATION INC.	6	62	84	60.94	\$15,000
7	DANVILLE REGIONAL FOUNDATION	7	59	82	59.92	\$50,000
8	COMMUNITY FOUNDATION FOR NORTHERN VIRGINIA	8	53	78	53.90	\$10,000
9	TIDES FOUNDATION	9	47	85	70.95	\$40,000
10	PNC FOUNDATION	10	54	86	66.94	\$10,000
11	CHICAGO COMMUNITY TRUST	11	54	85	60.96	\$11,250
12	SIMONS FOUNDATION INC.	12	53	80	60.94	\$7,000
13	CARNEGIE CORPORATION OF NEW YORK	13	53	80	63.95	\$50,000
14	AT&T FOUNDATION	14	52	74	61.85	\$15,000
15	BILL & MELINDA GATES FOUNDATION	15	50	89	64.94	\$50,000
16	VERIZON FOUNDATION	16	50	78	58.90	\$8,800
17	CHARLES AND LYNN SCHUSTERMAN FAMILY FOUNDATION	17	48	81	55.96	\$50,000
18	BURROUGHS WELLCOME FUND	18	48	84	63.93	\$30,000
19	THE NEW YORK COMMUNITY TRUST	19	48	81	63.93	\$10,000
20	ALFRED P. SLOAN FOUNDATION	20	48	86	61.93	\$50,000
21	ROBERT WOOD JOHNSON FOUNDATION	21	48	82	51.91	\$50,000
22	VANGUARD CHARITABLE ENDOWMENT PROGRAM	22	47	84	67.94	\$18,500
23	CHRYSLER FOUNDATION	23	47	82	65.95	\$16,500
24	THE SEATTLE FOUNDATION	24	46	78	58.94	\$7,551
25	PG&E CORPORATION FOUNDATION	25	46	88	76.91	\$50,000
26	TD CHARITABLE FOUNDATION	26	46	86	71.93	\$5,000
27	MONSANTO FUND	27	46	88	67.97	\$50,000
28	INTEL FOUNDATION	28	46	77	65.90	\$40,000
29	ROBERTSON FOUNDATION	29	46	81	64.94	\$50,000
30	DENNIS & PHYLLIS WASHINGTON FOUNDATION	30	45	81	74.88	\$50,000

- 470 pages
- 1,200 different organizations
- Over 25 detailed searches

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IN-OFFICE PROJECTS

BIG Idea Challenge 2018: Requested Photo & Biography



Cotton, Ania

Monday, July 24, 2017 at 12:28 PM

To: lee.s.mason@nasa.gov

Cc: Dees, Stacy; O'Leary, Victoria

Good afternoon Mr. Mason,

My name is Ania Cotton, I'm a senior at Hampton University and I'm currently interning with the NIA and helping out with the BIG Idea Program.

I'm reaching out to you to request a brief biography and headshot of you to update the Judges' Page on the BIG Idea Website for 2018, and for inclusion in our 2018 BIG Idea Challenge Forum Program book. I found your biography here: <https://gameon.nasa.gov/about/principal-technologist/principal-technologist-lee-mason/>, and I was wondering if it would be okay for me to use it along with the photo?

Please feel free to visit the [Judges page](#) on the BIG Idea Website to get a sense of the content/length we're looking for in your bio.

Don't hesitate to contact me if you have any questions!

Kindest regards,

Ania Cotton
Hampton University Journalism Intern
National Institute of Aerospace
Education and Outreach Office
Office: (757) 325-6795

D226	A	B	C	D	E	F
	NAME	Last Name	SCHOOL	EMAIL	Group	MSI?
1	Venkata	Atluri	Alabama A&M University	venkata.atluri@aamu.edu	MSI	Yes
2	Alak	Bandyopadhyay	Alabama A&M University	alak.bando@aamu.edu	MSI	Yes
3	Nelson	Barnes	Alabama A&M University	nelson.barnes@aamu.edu	MSI	Yes
4	Willie	Bossie	Alabama A&M University	willie.bossie@aamu.edu	MSI	Yes
5	Joel	Fu	Alabama A&M University	joel.fu@aamu.edu	MSI	Yes
6	Yujian	Fu	Alabama A&M University	yujian.fu@aamu.edu	MSI	Yes
7	Jay	Gangasani	Alabama A&M University	jay.gangasani@aamu.edu	MSI	Yes
8	Terry	Miller	Alabama A&M University	terry.miller@aamu.edu	MSI	Yes
9	Xiang	Zhao	Alabama A&M University	xiang.zhao@aamu.edu	MSI	Yes
10	Kaveh	Heidary	Alabama A&M University	kaveh.heidary@aamu.edu	MSI	Yes
11	Mohamed	Self	Alabama A&M University	mohamed.self@aamu.edu	MSI	Yes
12	Mohan	Aggarwal	Alabama A&M University	mohan.aggarwal@aamu.edu	MSI	Yes
13	A.K.	Batra	Alabama A&M University	ashok.batra@aamu.edu	MSI	Yes
14	Mostafa Mark	Dokhanian	Alabama A&M University	mostafa.dokhanian@aamu.edu	MSI	Yes
15	Matthew	Edwards	Alabama A&M University	matthew.edwards@aamu.edu	MSI	Yes
16	Padmaja	Guggilla	Alabama A&M University	padmaja.guggilla@aamu.edu	MSI	Yes
17	T.X.	Zhang	Alabama A&M University	tianxi.zhang@aamu.edu	MSI	Yes
18	A.R.	Winebarger	Alabama A&M University	winebarger@physics.aamu.edu	MSI	Yes
19	Arjun	Tan	Alabama A&M University	arjun.tan@aamu.edu	MSI	Yes
20	Anup	Sharma	Alabama A&M University	anup.sharma@aamu.edu	MSI	Yes
21	Jamui	Odutola	Alabama A&M University	jamui.odutola@aamu.edu	MSI	Yes
22	Showkat	Chowdhury	Alabama A&M University	showkat.chowdhury@aamu.edu	MSI	Yes
23	Kennedy	Wekesa	Alabama State University	wekesa@alasu.edu	MSI	Yes
24	Gerrand	Crosby	Alabama State University	gcrosby@alasu.edu	MSI	Yes
25	Latonia	Harris	Alabama State University	lharris@alasu.edu	MSI	Yes
26	Carl	Pettis	Alabama State University	cpettis@alasu.edu	MSI	Yes
27	Derrick	Dean	Alabama State University	ddean@alasu.edu	MSI	Yes
28	Douglas	Anderson	Concordia College	andersond@cord.edu	MSI	Yes
29	Nathan	Axvig	Concordia College	ndaxvig@cord.edu	MSI	Yes
30	Mark	Gealy	Concordia College	gealy@cord.edu	MSI	Yes
31	Charles	Woods	Miles College	cwoods@miles.edu	MSI	Yes
32	Gary	Robinson	Miles College	grobison@miles.edu	MSI	Yes
33	Gabi	Idoh	Miles College	gidoh@miles.edu	MSI	Yes
34	Margaret	Ssenkoloto	Miles College	mssenkoloto@miles.edu	MSI	Yes
35	Stephen	Chai	Miles College	schai@miles.edu	MSI	Yes
36	Vidal	Adadeveoh	Miles College	vadadevoh@miles.edu	MSI	Yes
37	Tia	James	Oakwood University	mtia@oakwood.edu	MSI	Yes

- Emails to judges
- Updates to website
- Over 600 new contacts found

HU:CARE Website Mock Up

The following mock up presentation is a rough draft of my design plans for the CARE website.

The color codes I've used through out are: cfa169, 413c51, and bc6c0f, and I've offered different color combinations as well. I personally think the blue background and orange banner is a better fit, but I'm open to any and all suggestions!

The only photos I need are the ones of the facilities, and of students in the lab working. I've found pictures and biographies of the faculty/ staff online.

I plan on using SEO terms such as: "atmospheric science," "planetary science," "graduate program," and "atmospheric research," to name a few. If there are any in particular that you'd like me to use, please feel free to share as well.

Home Page

HOME | ABOUT | PEOPLE | RESEARCH | EDUCATION | OUTREACH | NEWS

HU:CARE

CENTER FOR ATMOSPHERIC RESEARCH AND EDUCATION



PROSPECTIVE
STUDENTS

RESEARCH
PROJECTS

PROGRAMS OF
STUDY

About & Mission 1

HOME

ABOUT

PEOPLE

EDUCATION

OUTREACH



ABOUT CAS & OUR MISSION

The Center for Atmospheric Sciences (CAS) was established in November 1996 by CAS's co-directors, Dr. M. Patrick McCormick and James M. Russell, III. The Center for Atmospheric Sciences (CAS) is the research facility for the Department of Atmospheric and Planetary Sciences at Hampton University and has a three-fold focus of closely related objectives: education, fundamental research and outreach to the public, university, and K-12 communities.

The center supports the nation's programs in atmospheric and Earth radiation sciences and related technologies and works closely with the nearby NASA Langley Research Center (LaRC). CAS is housed in its own buildings on campus with supporting laboratory space at HU. Some cooperative programs are conducted at LaRC, as well as at other institutions. Developments in remote sensing technology are closely linked to the HU Research Center for Optical Physics (RCOP).

The 'About' tab will include two drop-down menus, Press Kit and Location, and will link to the AIM press kit page and the existing Location page.

The 'Location' page will be edited to remove any awkward spaces that are on the current site.

The background picture will be one of the labs or of the students working.

Letter from the APS Chair 1

HOME | ABOUT | PEOPLE | RESEARCH | EDUCATION | OUTREACH | NEWS

LETTER FROM
THE APS CHAIR

FACULTY/ STAFF

JOBS/ CAREERS



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The 'People' tab will include a drop-down menu displaying: 'Letter from APS Chair', 'Faculty & Staff', & 'Jobs/ Careers.'

The Jobs/ Careers page will link to the Hampton University page where prospective applicants can go to apply.

People

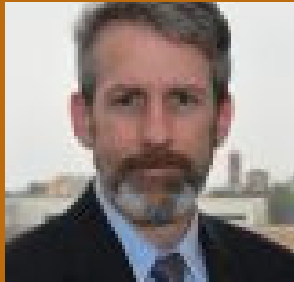
HOME | ABOUT | PEOPLE | RESEARCH | EDUCATION | OUTREACH | NEWS

FACULTY & STAFF

LETTER FROM
THE APS CHAIR

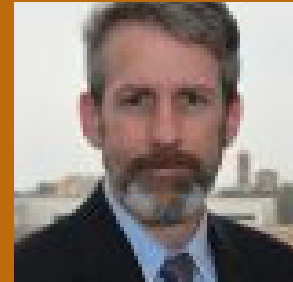
FACULTY/STAFF

JOBS/ CAREERS



**DR. WILLIAM MOORE,
ASSOCIATE PROFESSOR**

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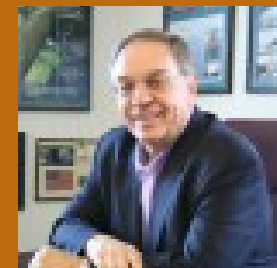
**DR. WILLIAM MOORE,
ASSOCIATE PROFESSOR**

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**DR. PATRICK MCCORMICK,
CAS CO-DIRECTOR**

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**DR. PATRICK MCCORMICK,
CAS CO-DIRECTOR**

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The Faculty/ Staff page will feature pictures, biographies, and email addresses for all of the faculty, researchers, and staff on the CARE team. The biographies will be gathered from science.hamptonu.edu & the hyperlinks to their research will remain.

Research Home Page 2

HOME | ABOUT | PEOPLE | RESEARCH | EDUCATION | OUTREACH | NEWS

WHAT WE STUDY

RESEARCH

MISSIONS

PARTNERS

ACHIEVEMENTS

Research activity and expertise are major strengths of Hampton University's Department of Atmospheric and Planetary Sciences and its associated Center for Atmospheric Sciences (CAS). Atmospheric science is the study of the physics, chemistry, and dynamics of gases, clouds, and aerosols that surround the planetary bodies of the solar system.

At HU, research is extended beyond the usual bounds of the atmosphere to include the interplanetary medium and processes of "space weather" affecting Earth and other planets. There are opportunities for student involvement in cutting-edge research.

FACILITIES

GET INVOLVED

Research 1

HOME | ABOUT | PEOPLE | RESEARCH | EDUCATION | OUTREACH | NEWS

RESEARCH

RESEARCH

MISSIONS

PARTNERS

ACHIEVEMENTS

- Ozone Mapping and Profiler Suite Limb Profiler Calibration and Validation
- Analysis of Venusian Zonal Winds Using Venus Express Data
- HU Center for Atmospheric Research and Education (CARE)
- Modeling Dust Injection and Vertical Mixing for the Next Generation of Martian Exploration
- Planetary boundary layer (PBL) height detect by fractal dimension (FD) of three-wavelength lidar signals

LOAD MORE

The research page will feature all of the current research articles on the site and hyperlink to their respective pages.

Missions 2

HOME | ABOUT | PEOPLE | RESEARCH | EDUCATION | OUTREACH | NEWS

RESEARCH

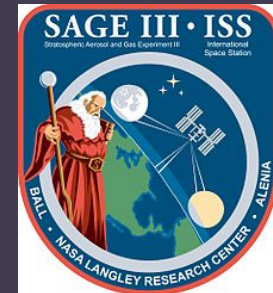
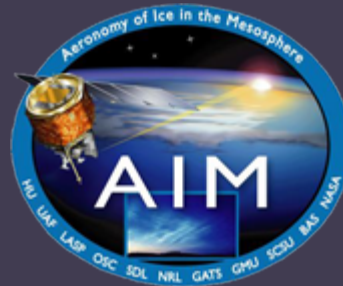
MISSIONS

PARTNERS

ACHIEVEMENTS

MISSIONS

CURRENT MISSIONS



FUTURE MISSIONS

LOAD MORE

The 'Missions' page will feature the badges of all of the missions participated in, & will hyperlink to their respective pages.

Partners

HOME | ABOUT | PEOPLE | RESEARCH | EDUCATION | OUTREACH | NEWS

PARTNERS

RESEARCH

MISSIONS

PARTNERS

ACHIEVEMENTS

APS is devoted to increasing the participation of minorities in the fields of Atmospheric, Space and Planetary sciences. The department and the Center for Atmospheric Sciences (CAS) maintain strong partnerships with:

- National Aeronautics and Space Administration – Langley Research Center (NASA LaRC)
- National Aeronautics and Space Administration – Goddard Space Flight Center (NASA GSFC)
- National Center for Atmospheric Research (NCAR)

The 'Partners' page will list all of our partners and hyperlink their pages in their names.

Achievements

HOME | ABOUT | PEOPLE | RESEARCH | EDUCATION | OUTREACH | NEWS

ACHIEVEMENTS

RESEARCH

MISSIONS

PARTNERS

ACHIEVEMENTS



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Quisque pulvinar quis turpis pharetra rhoncus. Proin ac dignissim diam. Vivamus vitae interdum eros. Cras quis nisl facilisis, facilisis lectus non, condimentum mi. Quisque consequat sagittis magna, quis lobortis ante porta quis.

The 'Achievements' page showcase various short stories - similar to Key Activities - of the achievements of the faculty/staff & students in the CARE program.

Education

HOME | ABOUT | PEOPLE | RESEARCH | EDUCATION | OUTREACH | NEWS

PROSPECTIVE STUDENTS

We are pushing the frontiers of knowledge to better understand our universe and our world. Hampton University researchers are exploring Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Titan, Io, Europa, Ganymede and extrasolar planets. From hurricanes on Earth to weather in space to dust storms on Mars and thunderheads on Saturn, we develop physical models of planetary processes and test them against data returned from telescopes, spacecraft, rockets, balloons and ground stations.

PROSPECTIVE STUDENTS

PROGRAMS

INTERNSHIPS & FELLOWSHIPS

NOAA CREST

WHO WE WANT

Students with a desire to explore the worlds around them are encouraged to apply, particularly applicants with backgrounds in:

- Physics • Mathematics • Meteorology
- Chemistry • Engineering • Geophysics
- Planetary Science • Astronomy • Computer Science
- Physical Oceanography • Environmental Science

Students from other fields may also apply; please contact us.

WHAT WE OFFER

As part of the Graduate College of Hampton University, we offer Ph.D. and M.S. degrees in both Atmospheric Science and Planetary Science.

Atmospheric Science is the study of the physics, chemistry, and dynamics of gases, clouds, and aerosols that surround the planets and moons of the solar system. Hampton University scientists are at the forefront of discovery and exploration of the Earth's atmosphere, past, present, and future.

The 'Prospective Students' page gives future students information on what we offer, who we want, admission requirements, and research opportunities

Education

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PROGRAMS

PROSPECTIVE
STUDENTS

PROGRAMS

INTERNSHIPS &
FELLOWSHIPS

NOAA CREST

UNDERGRADUATE

The Department of Atmospheric and Planetary Sciences at Hampton University offers a M.S. in Atmospheric and Planetary Sciences. Students can choose between an Atmospheric Science Track or Planetary Science Track.

The department is chaired by Dr. Robert P. Loughman who collaborates with other teaching faculty, research faculty, and visiting scientists.

[VIEW CURRICULUM](#)

GRADUATE

The Department of Atmospheric and Planetary Sciences (APS) provides a program in graduate education leading to the M.S. and Ph.D. degrees with concentration either in Atmospheric Science or in Planetary Science.

Students from a variety of academic disciplines are welcome, and the curriculum maintains flexibility to match the interests of individual students. Academics, research, and service to the scientific community, the university, and the public are integral elements of the mission of the department. A high ratio of faculty to students ensures that students at all levels receive mentoring, training, and guidance.

[VIEW CURRICULUM](#)

The 'Programs' page gives future students information on each specific program and allows them the opportunity to view the curriculum for each. These will hyperlink to a PDF that contains information on the courses required for the degrees on the current site.

Outreach

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SPOTLIGHT ON SCIENCE

SPOTLIGHT ON
SCIENCE

NASA DISASTERS
PROGRAM

NASA eClips

WORKSHOPS



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The 'Spotlight on Science' page will offer more information on what the program was, and allow visitors to scroll down and watch the various videos which will be embedded into the page. The 'NASA Disasters Program' and 'Workshops' pages will have the information from the current site on them, and the NASA eClips tab will hyperlink to the eClips website.

News

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NEWS

NEWS

BLOG

FEATURED
STUDENT

FEATURED
FACULTY



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ARCHIVE

- June 2017
- May 2017
- April 2017
- March 2017
- February 2017
- January 2017

The 'News' page will house all of the latest news articles and updates from the CARE team. Each story will be represented with a picture and short description and will allow users to read more on a new page. The 'Blog' section will feature APS Seminar write ups as well as interviews with current students/ faculty about their research. Each month, a featured student and faculty member will be recognized for their achievements and contributions to the team and will be featured on their respective pages.

OUT OF OFFICE PROJECTS



- Hampton Roads Outreach
- Governor's School Students
- NASA eClips Team Support

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OUTREACH PROJECTS



OUTREACH PROJECTS

While I don't have any pictures of me with the Governor's school children, I was able to teach them how to create a script and even brought materials from one of my classes to teach them the different terms and to serve as a visual.

Prior to this, I assisted the NASA eClips team with finding storyboarding activities and free websites for the students to use, in addition to script writing advice.