

NIA/NASA/NC Space Grant Educator Training Workshop
NC Space Grant
Monday, July 17, 2006

Location: NC State University – Science House
Theme: Aerospace

***Check in will be Sunday night, July 16 – Details to be given out later.

7:30 am Continental Breakfast

8:00 am Welcome and Introductions Dr. Chris Brown
Space Biology
An overview of the biology of plants, animals and humans in the space environment, including gravitational biology, aerospace medicine, Mars exploration and life support.

9:00 am Tumbleweed Model Construction Dr. Kirti Patel



The Tumbleweed project started out as a joint project between NASA, NC State and a local middle school and has now spread out to various schools across the state of NC.

<http://www.ncsu.edu/kenan/fellows/2002/hhanrahan/tumbleweed.htm>

11:00 am Assessment Working Time (Computer Lab) Holly Hanrahan

12:00 pm LUNCH

1:00 pm Tour: NC State Tumbleweed Dr. Fred DeJarnette

1:30 pm Women and Engineering Dr. Laura Bottomley

2:30 pm Construction & Flying Model Rockets Adam Attarian



4:00 pm Reflection/Evaluation Holly Hanrahan

Happy Birthday Luther!

**NIA/NASA/NC Space Grant Educator Training Workshop
Tuesday, July 18 2006**

Location: NC State University – Science House
Theme: Aeronautics

7:30 am Check Out/Continental Breakfast

8:00 am The Science House
The Science House works in partnership with K-12 teachers to emphasize the use of hands-on learning activities in mathematics and science. <http://www.science-house.org/>

Scott Ragan

8:30 am Tour of Friday Institute
The Institute will generate ideas not yet imagined and create new and vital answers that will have profound effects on the education of future generations in North Carolina and beyond.
<http://www.ncsu.edu/friday/>

Dr. Hiller Spires

10:15 am Wind Tunnel Testing/Tumbleweeds (Broughton Hall) Stearns Heinzen



11:00 am LUNCH

11:45 am Straw Rockets Lab
This lab will show you how to launch straw rockets using a straw rocket launcher. There is a lot of potential for math, physics and engineering with this activity, not to mention a whole lot of fun. ☺

Holly Hanrahan
Adam Attarian

1:30 pm Astronaut Interview Process
NEAT
http://education.nasa.gov/divisions/eleandsec/overview/neat_program.html

Wayne Fisher
Luther Richardson

2:30 pm Teacher Share Time Inez-Everston West
Kelly Ogles

3:30 pm Reflection/Evaluation

4:00 pm Travel to NC A&T State University

6:30 pm Check into Aggie Suites Dr. William Craft

NIA/NASA/NC Space Grant Educator Training Workshop
Wednesday, July 19, 2006

Location: NC A&T State University – IRC 410
Theme: Looking to the Skies

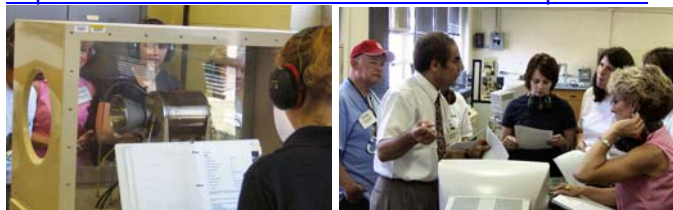
8:00 am Coffee and Bagels

8:30 am **Cosmology**
Cosmology is the scientific study of the large scale properties of the Universe as a whole. It endeavors to use the scientific method to understand the origin, evolution and ultimate fate of the entire Universe. http://map.gsfc.nasa.gov/m_uni.html

Dr. Stephen Danford

9:30 am **Gas Turbine Experiment**
Teachers will be taught how a gas turbine engine works and experience working the engine. This activity will “blow you away!”
<http://science.howstuffworks.com/turbine.htm/printable>

Dr. Messiha Saad



10:30 am **Teacher Share Time**

Ricky Majette
Thomas Bevier

11:30 am **LUNCH**

12:30 pm **PARI – A Laboratory to Study Science**
PARI's mission is to provide research and educational opportunities for a broad cross-section of users in radio and optical astronomy and in the related disciplines of physics, mathematics, engineering, earth sciences, chemistry and computer science.
<http://www.pari.edu/>

Mr. Don Cline

2:15 pm **Basic Astronomy**

Dr. Abebe Kebede

3:15 pm **Teaching Through Robotics**
http://www.piedmontcommunities.us/servlet/go_ProcServ/dbpage=page&qid=01356001151124925475092838

Kevin Barnard (NES)

4:45 pm **Reflection/Evaluation**

NIA/NASA/NC Space Grant Educator Training Workshop
Thursday, July 20, 2006

Location: NC A&T State University – IRC 410
Theme: Strong and Light Makes Great Flight

8:00 am Coffee and Bagels

8:30 am **Types and Properties of Composite Materials**
Composite materials are formed by combining two or more materials that have quite different properties. The different materials work together to give the composite unique properties, but within the composite you can easily tell the different materials apart – they do not dissolve or blend into each other. The greatest advantage of composite materials is strength and stiffness combined with lightness.
<http://www.science.org.au/nova/059/059key.htm>

Robert Sadler

9:30 am **Microscopy – A Modern Tool for Engineers**



Dr. Zhigan Xu
Dr. Cindy Waters

10:30 am **Adventures of the Agronauts**
<http://www.ncsu.edu/project/agronauts/>

Danielle Seneschal

11:30 am LUNCH

12:30 pm **Prepare Samples of Composites**



Dr. Ajit D. Kelkar

2:15 pm Break

2:30 pm **Translating Space Exploration Research**
<http://quest.nasa.gov/lrc/farming/plantsscrubbers.mov>

Dr. Gregory Goins

4:00 pm Reflection/Evaluation

**NIA/NASA/NC Space Grant Educator Training Workshop
Friday, July 21, 2006**

Location: NC A&T State University – IRC 410
Theme: Moving Forward

8:00 am Coffee and Bagels

8:30 am Mechanical Testing of Samples



Dr. Ajit. D. Kelkar

9:30 am Smart Materials for Space Travel

Smart materials have one or more properties that can be dramatically altered. Imagine the range of possibilities, which exist for special materials that have properties scientists can manipulate. Some such materials have the ability to change shape or size simply by adding a little bit of heat, or to change from a liquid to a solid almost instantly when near a magnet.

<http://www.spacedaily.com/news/materials-02zm.html>

Dr. Mannur Sundaresan



10:30 am Teacher Presentations

11:30 am Assessment of Week 2
Photos & Checks
Check Out of Aggie Suites
(Lunch on your own)

Dr. Bill Craft
Holly Hanrahan