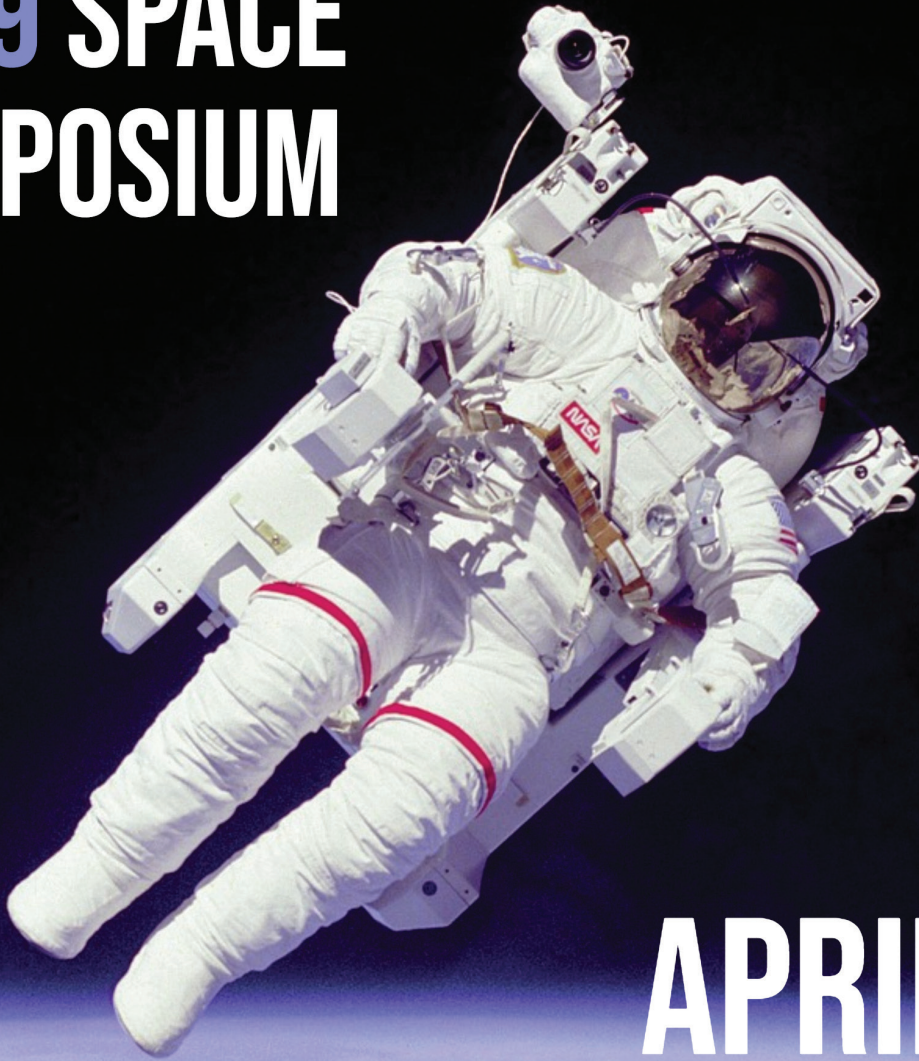
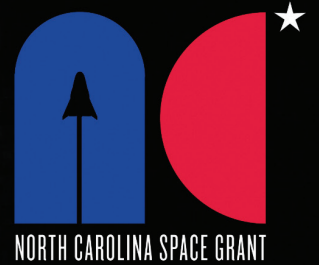


2019 SPACE SYMPOSIUM



APRIL 4-5

North Carolina Space Grant 2019 SPACE Symposium The StateView Hotel Raleigh, N.C.

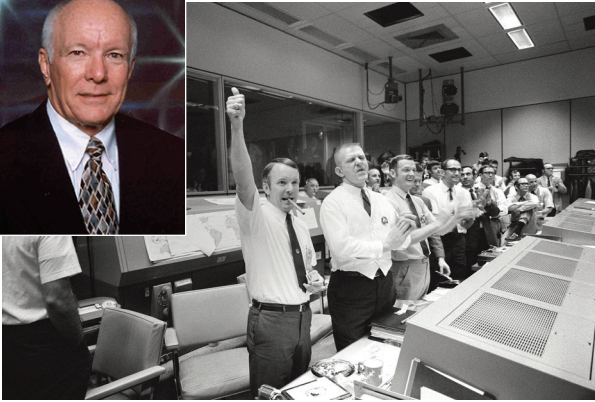
Bringing together the next generation of scientists and professionals in North Carolina's aerospace and aviation industries to explore career pathways in space science, technology, engineering and mathematics with current stars in the field.



@NCSpaceGrant
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[linkedin.com/company/nasa-north-carolina-space-grant](https://www.linkedin.com/company/nasa-north-carolina-space-grant)



Luncheon Keynote Speaker **Gerald D. "Gerry" Griffin**

Gerald D. "Gerry" Griffin is the former director of the NASA Lyndon B. Johnson Space Center in Houston. His career in the United States space program began in 1960 and has included senior positions in government and industry. At NASA, he also served as the deputy director of the John F. Kennedy Space Center in Florida and the Hugh F. Dryden Flight Research

Center in California. Griffin also held the posts of associate administrator for external relations and assistant administrator for legislative affairs at NASA Headquarters in Washington, D.C. In the private sector, he held senior engineering posts with Lockheed and General Dynamics.

During NASA's Apollo Program, Griffin was a flight director in Mission Control and served in this capacity for all of the Apollo manned missions. He was lead flight director for three lunar landing missions: Apollo 12, 15 and 17. During the flight of Apollo 13 in 1970, Griffin was scheduled to lead the lunar landing team in Mission Control. When the landing was canceled after the oxygen tank explosion, he led one of the teams of flight controllers who were responsible for the safe return of the astronauts.



Plenary Talk **Christopher Chung**

In 2015, Christopher Chung joined the Economic Development Partnership of North Carolina (EDPNC) as Chief Executive Officer. Chris brings more than 20 years of state-level economic development experience to his role. As a public-private partnership, the EDPNC is responsible for a number of economic development functions on behalf of the State of North Carolina, including new business recruitment, existing business support, international trade and export assistance, small business start-up counseling, and tourism, sports, and film promotion. With a staff of more than 60 professionals and an annual

operating budget of more than \$24 million, the EDPNC is focused on improving the economic well-being and quality of life for North Carolina's 10 million residents.

Since 2015, the EDPNC has helped North Carolina win more than 500 recruitment and expansion projects, resulting in 67,000 announced new jobs and \$14 billion in announced new investment across the state. In 2018, *Triangle Business Journal* named him a "CEO of the Year Award" recipient and Development Counsellors International chose him for their "40 Under 40" award in 2013. Chris previously held various executive and management responsibilities at the Missouri Partnership (2007–2014) and the Ohio Department of Development, now known as JobsOhio (1997–2007). Chris attended The Ohio State University, graduating Phi Beta Kappa with a double-major in Japanese and economics.

Symposium Agenda

Thursday, April 4, 2019

5:30 p.m.	Registration opens
6:00 p.m.	Welcome
6:00 – 8:00 p.m.	Networking reception

Friday, April 5, 2019

7:00 a.m.	Registration opens
7:00 – 8:00 a.m.	Student poster set-up
7:30 – 8:30 a.m.	Hot buffet breakfast
8:30 – 8:35 a.m.	WELCOME AND OPENING REMARKS Susan White , Director, North Carolina Space Grant
8:35 – 8:50 a.m.	PLENARY TALK – The State of Aerospace in North Carolina Chris Chung , CEO, Economic Development Partnership of North Carolina
8:50 – 9:00 a.m.	BREAK
9:00 – 10:15 a.m.	PANEL I: SPACE SCIENCE Moderator: Michael Roberts , Deputy Chief Scientist, International Space Station U.S. National Laboratory
9:00 – 9:15	<i>ISS Space Science Platform</i> Michael Roberts , Deputy Chief Scientist, ISS U.S. National Lab
9:15 – 9:30	<i>Feeding This and Other Worlds: Analyzing the Effects of Off-World Farming Techniques on Earth's Food Security</i> Rafael Loureiro , Assistant Professor, Botany, Winston-Salem State University (2018–19 NC Space Grant New Investigator Award Recipient)
9:30 – 9:45	<i>Visualizing Current Spacecraft Missions in OpenSpace</i> Kate Richardson , Undergraduate Student, Physics/Computer Science, University of North Carolina at Chapel Hill (2018–19 NC Space Grant / NC Museum of Natural Sciences Astrophysics Laboratory Intern)
9:45 – 10:00	<i>Comparing the Effects of Countermeasures on the L3 Vertebra from Three Distinct Spaceflight Studies</i> Lindsay Sullivan , Ph.D. Student, Biomedical Engineering, UNC Chapel Hill (2018–19 NC Space Grant Graduate Research Fellow)
10:00 – 10:15	Panel Q&A
10:15 – 11:00 a.m.	STUDENT POSTER SESSION I Even-numbered posters presented
11:00 a.m. – 12:15 p.m.	PANEL II: SPACE TECHNOLOGY Moderator: DeWayne Cecil , Director, Destination SPACE (Satellite Program for Aerospace-Centered Education)
11:05 – 11:20	<i>NASA Technologies</i> Julie Williams-Byrd , Acting Chief Technologist, NASA Langley Research Center
11:20 – 11:35	<i>SeaHawks in Space: North Carolina's First CubeSat Satellite</i> Sara Rivero-Calle , Postdoctoral Research Fellow, Center for Marine Science, University of North Carolina at Wilmington

11:35 – 11:50	<i>High-Altitude Student Platform (HASP)</i> Julie Hoover , Faculty, Durham Technical Community College (2018–19 NC Space Grant Team Competition Award Recipient)
11:50 – 12:05	<i>Mars 2020 – Return Sample Research</i> Katherine Tighe , Undergraduate Student, Mechanical Engineering, Duke University (Summer 2018 NC Space Grant Intern at NASA Jet Propulsion Laboratory)
12:05 – 12:15	Panel Q&A
12:15 – 1:30 p.m.	LUNCHEON Keynote address: Gerald D. Griffin , former Director of NASA Johnson Space Center, former Mission Control Flight Director during Apollo missions Introduction to Mr. Griffin: Rachel White , Director, Astrophysics Laboratory at the North Carolina Museum of Natural Sciences
1:30 – 1:40 p.m.	BREAK
1:40 – 3:00 p.m.	PANEL III: FUTURE FLIGHT Moderator: Srinath Ekkad , Professor and Head, Department of Mechanical and Aerospace Engineering, North Carolina State University
1:45 – 2:00	<i>Dream Chaser® – America's Next Spaceplane</i> Jeff Mobley , Space Systems Group, Sierra Nevada Corporation
2:00 – 2:15	<i>NASA Aeronautical Research</i> Carrie Rhoades , Flight Systems Engineer, NASA Langley Research Center
2:15 – 2:30	<i>Integrating Drones into NC Airspace</i> Basil Yap , Unmanned Aerial Systems Program Manager, North Carolina Department of Transportation
2:30 – 2:45	<i>HyperIntern: A Day in the Life of a Future Flight Engineer</i> Noah Prezant , Undergraduate Student, Aerospace Engineering, NC State (Summer 2018 NC Space Grant Intern at HyperSizer)
2:45 – 3:00	Panel Q&A
3:00 – 3:45 p.m.	STUDENT POSTER SESSION II Odd-numbered posters presented
3:45 – 5:00 p.m.	PANEL IV: CAREERS IN AEROSPACE
3:45 – 4:00	Panel Overview
4:00 – 5:00	Speed Networking (6 rounds, 10 minutes each, student choice) – organizations include: LORD Corporation HyperSizer Sierra Nevada Corporation Crown Consulting, Inc. NASA Langley Research Center Precision Hawk NC Public Safety Drone Academy GE Aviation
5:00 – 5:15 p.m.	CLOSING REMARKS

Student Poster Session

Presentations: Even-numbered posters – 10:15–11:00 a.m.; Odd-numbered posters – 3:00–3:45 p.m.

1. *Tuned Vibration Absorption with Shunted Piezoelectric Transducers*, **Trenton Abbott**, NC State (NC Space Grant Intern at NASA Langley Research Center)
2. *Backdraft in Reduced Gravity Environments*, **Shreyas Ashok**, NC State (NC Space Grant Undergraduate Research Scholar)
3. *SeaHawk: North Carolina's First Ocean Color CubeSat*, **Joe Brown**, UNC Wilmington
4. *Machine Learning Applications for Aerospace Engineering*, **Elizabeth Blenk**, NC State (NC Space Grant Undergraduate Research Scholar)
5. *Development of Experimental and Numerical Tools for Magnetic Drug Targeting in Cardiovascular Flow*, **Ashley Ciero**, University of North Carolina at Charlotte (NC Space Grant Graduate Research Fellow)
6. *Modeling and Fabrication of Randomly Close-Packed Nanostructures Using Non-Monodispersed Colloidal Particles*, **Timothy Chen**, NC State (NC Space Grant Undergraduate Research Scholar)
7. *Random Decrement Analysis in Structural Health Monitoring*, **Nate Faulkner**, NC State (NC Space Grant Intern at NASA Langley Research Center)
8. *Automated Impact Device for Evaluating a Prototype Ultrasensitive Mass Detector*, **Samson Goodrich**, East Carolina University
9. *Computational Investigations of Carbene Complexes and Complexed Isomerization Transition States*, **Blanton Gillespie**, University of North Carolina at Asheville (NC Space Grant Undergraduate Research Scholar)
10. *The Computation and Verification of a System's Minimum Dwell Time under MPC*, **Richard Hall**, Duke
11. *A Drone Imagery Assisted Machine Learning Workflow for Satellite Classifications of Wetlands*, **Patrick Gray**, Duke (NC Space Grant Graduate Research Fellow)
12. *Numerical Simulations of a Ram Pressure-Driven Rayleigh-Taylor Instability*, **Maggie Hilderbran**, UNC Chapel Hill
13. *Astronomical Polarimeter Automation for Skynet*, **Roark Habegger**, UNC Chapel Hill (NC Space Grant Undergraduate Research Scholar)
14. *Ejecta-Minimizing Protocols for Applications Needing Anchoring or Digging on Asteroids*, **Anna Jackson, Riley Reid and Robert Bullard**; NC State
15. *Sonochemical Functionalization of Boron Nitride Nanomaterials*, **Haley Harrison**, University of North Carolina at Greensboro
16. *The Effects of Clinorotation on Growth of Different Arabidopsis Thaliana Genotypes*, **Alena Jones**, UNC Greensboro
17. *Low-Cost Autonomous Navigation and Object Avoidance for a Small, Continuous-Track Robot*, **Ashton Johnston**, UNC Charlotte (NC Space Grant Undergraduate Research Scholar)

18. *Thirty-Four Days of Spaceflight Impaired Gait Patterns in Mice*, **Andy Kwok**, Wake Forest University
19. *Analytical Model of Ocean Energy: Determining Peak Energy Level Potential*, **Angela Krebs**, East Carolina
20. *Greenhouse Gas Emissions from Standing Dead Trees Along the Albemarle Pamlico Peninsula, North Carolina*, **Melinda Martinez**, NC State (North Carolina Sea Grant / NC Space Grant Graduate Research Fellow)
21. *Transcriptional Regulation of Seedling Development in Microgravity*, **Eric Land**, NC State (NC Space Grant Graduate Research Fellow)
22. *Primary Mirror Design and Analysis for the Habitable Exoplanet Imaging Mission (HabEx)*, **Jonathan McCready**, NC State (NC Space Grant Intern at NASA Marshall Space Flight Center)
23. *Toward Synergistic Wind-Solar Hybrid Energy Harvesting on Mars*, **Nicholas Mazzoleni**, NC State (NC Space Grant Graduate Research Fellow)
24. *Determination of Elastic Modulus of Cells Using Optical Tweezers*, **Jeff Miller**, Appalachian State University (NC Space Grant Undergraduate Research Scholar)
25. *CO₂ Emissions from Asheville's Craft Brewing Industry*, **Metis Meloche**, UNC Asheville (NC Space Grant Undergraduate Research Scholar)
26. *Evaluation of Coupled Cantilevers for Ultrasensitive Mass Detection*, **Mariah Mook**, East Carolina
27. *Monitoring the Spread of Invasive Grasses and the Impact on Grassland Management in the Great Plains Using NASA Earth Observations and NOAA*, **Conor Mulderig**, UNC Asheville (NC Space Grant Intern at NASA DEVELOP Program)
28. *Eccentric Two-Body Radiation: Expanding the Fluxes at Infinity through Perturbation Theory and Multipole Moment Analysis*, **Christopher Munna**, UNC Chapel Hill (NC Space Grant Graduate Research Fellow)
29. *Building Better Simulations of Binary Black Holes*, **Zachary Nasipak**, UNC Chapel Hill (NC Space Grant Graduate Research Fellow)
30. *Automatic Detection of Surface Oxidation*, **Jordan Hupp**, **Kesharra West** and **Catherine Spooner**; Fayetteville State University
31. *Bioethics in Space*, **Ashle Page**, Duke
32. *Evaluation of UAV Atmospheric Sensor Configurations on Satellite Signal Acquisition*, **Julian Quintero**, East Carolina
33. *Automation of Calibrated Temperature Determination of Optically Trapped Particles*, **Gregory Rapp**, Appalachian State (NC Space Grant Undergraduate Research Scholar)
34. *Evaluating the Role of Circadian Clock in Gravitropic Responses*, **Kaetlyn Ryan**, NC State
35. *Visualizing Spacecraft Missions with OpenSpace Software*, **Kate Richardson**, UNC Chapel Hill (NC Space Grant / NC Museum of Natural Sciences Astrophysics Lab Intern)
36. *Automation in a Laser Tweezer Raman Spectroscopy Apparatus*, **Nathaniel Scott**, Appalachian State (NC Space Grant Undergraduate Research Scholar)

37. *Canopy Structural Patterns for Identifying Yield Variability in Grain Sorghum*, **Kellyn Montgomery**, NC State (NC Space Grant Graduate Research Fellow)
38. *Analysis of Mg II-Absorbing Galaxies in the UltraVISTA Survey Within the Framework of a Rest-Frame UVJ Color Space*, **Darren Stroupe**, UNC Asheville (NC Space Grant Undergraduate Research Scholar)
39. *OMNICROP Phase II: Martian Crop Modeling*, **William Smith**, Winston-Salem State
40. *Interactions between the Circadian Clock and Microgravity*, **Joseph Tolsma**, NC State
41. *Remembering the Apollo Program to Inspire Student Research Projects on Brain Health Concerns Due to Space Travel Challenges*, **Nicole Stumbling Bear**, University of North Carolina at Pembroke (NC Space Grant Teacher Scholar)
42. *Eat Prosperity*, **Brian Toton**, NC State
43. *Fault Tree Analysis*, **David Torres**, NC State (NC Space Grant Intern at NASA Stennis Space Flight Center)
44. *Spacecraft Health and Early Warning Dashboard*, **Sabrina van der Gracht**, Elon University (NC Space Grant Intern at the NASA Applied Physics Lab at Johns Hopkins University)
45. *Can We Monitor Saltwater Intrusion from Space?*, **Emily Ury**, Duke (NC Sea Grant / NC Space Grant Graduate Research Fellow)
46. *Multifunctional Molecularly-Engineered Materials for Space Power Cross-Cutting Technologies*, **Nicholas Wright**, UNC Greensboro (NC Space Grant Graduate Research Fellow)
47. *Spatially Resolved Carrier and Acoustic Dynamics in Tungsten Disulfide and Tungsten Diselenide Nanoflakes*, **Erika Van Goethem**, UNC Chapel Hill (NC Space Grant Graduate Research Fellow)
48. *Performance Enhancement Strategies for Extra-terrestrial Balloon Tether-sail Trajectory Guidance Systems*, **Christopher Yoder**, NC State (NC Space Grant Graduate Research Fellow)
49. *Fundamental Studies on the Thermal Spin-Transfer-Torque: Towards the Next Generation Nonvolatile Memory for Space Exploration*, **Eric Vetter**, NC State
50. *Development of a Protein-Based Detection System for Organophosphates Using pH-Dependent EGFP*, **Megan Yaffey**, Appalachian State (NC Space Grant Undergraduate Research Scholar)
51. *Aluminum Chloride Mediated Synthesis and Antibacterial Evaluation of the Naturally Occurring Substituted Phenanthrenequinone, Denbinobin*, **Sara Wasserman**, UNC Asheville
52. *Robotic Arm Materials Matching and Manipulation: RAM3*, **James Cowell** and **Meredith Murray**, Durham Technical Community College (NC Space Grant Team Competition Award Recipient – 2019 NASA / Louisiana Space Grant High Altitude Student Platform Program)
53. *High Altitude Balloon Payload Design*, **George Green**, Nash Community College (NC Space Grant Community College High Altitude Ballooning Program Participant)
54. *Improvements for High Altitude Balloon Payload Design and Telemetry*, **Garrett Parker**, Edgecombe Community College (NC Space Grant Community College High Altitude Ballooning Program Participant)

55. *Edgecombe Community College's High-Altitude Balloon Team*, **Copeland Lachapelle**, Edgecombe Community College (NC Space Grant Community College High Altitude Ballooning Program Participant)
56. *ECU NASA Rover Challenge*, **Evan Diener, Andrew Grena, James Morris** and **Morgan Watkins**; East Carolina (NC Space Grant Team Competition Award Recipient – 2018 NASA Human Exploration Rover Challenge)
57. *Autonomous Unmanned Aerial System: Design and Integration*, **Spencer Freeman, Hannah Oliver** and **Colin Moore**; NC State (NC Space Grant Team Competition Award Recipient – 2019 Association for Unmanned Vehicle Systems International Student Unmanned Aerial Systems Competition)
58. *Astrobotics*, **Paul Pham, Matthew Trusnovic, Austin Joyner, Jessi Whiteside, Cristian Garcia, Travis Tessier** and **Thomas Rollins**; UNC Charlotte (NC Space Grant Team Competition Award Recipient – 2019 NASA Robotic Mining Competition)
59. *Charlotte-Area Robotics - SoutheastCon Hardware Competition 2019*, **Nathaniel Belles**, UNC Charlotte (NC Space Grant Team Competition Award Recipient – 2019 IEEE SoutheastCon Hardware Competition)
60. *NASA Student Launch – NC State*, **Sean Aiton, Michael Casper** and **Gabe Buss**; NC State (NC Space Grant Team Competition Award Recipient – 2019 NASA Student Launch Competition)
61. *Remote-Controlled Unmanned Aerial Vehicle for Carrier Operations*, **Kevin Gitushi, Christopher Scott** and **Rachita Shah**; NC State (NC Space Grant Team Competition Award Recipient – 2019 American Institute for Aeronautics 2019 Design-Fly-Build Competition)
62. *Design and Fabrication of an Autonomous Underwater Vehicle*, **Amalan Iyengar, Jake Keller** and **Vincent Patella**; NC State (NC Space Grant Team Competition Award Recipient – 2019 Association for Unmanned Vehicle Systems International RoboSub Competition)

Apply for Current Funding Opportunities!

These opportunities are open until April 15, 2019. Search for these and other scholarship and fellowship opportunities from NC Space Grant at: ncspacegrant.ncsu.edu/higher-ed-opportunities. View this and other internship opportunities at: ncspacegrant.ncsu.edu/careers.

Undergraduate Research Scholarships are awarded to students pursuing research and careers in science, technology, engineering and mathematics (STEM) fields that support NASA's mission. The program enables students to participate in an active, identified research activity in STEM fields that has aerospace and NASA applications in Summer 2019 or during the 2019–20 academic year.

Graduate Research Fellowships enable students to participate in an active, identified research activity in STEM that has aerospace and NASA applications. The research may be conducted on the home campus or at an industrial or government facility during Summer 2019.

The NC Space Grant – NC Museum of Natural Sciences (NCMNS) Astronomy & Astrophysics Internship will have a student working on a combination of research on meteorites and/or spectroscopy of forming stars, plus outreach related to creating visualizations for the general public for Summer 2019.

NC Space Grant Awards for 2018–2019

NC Space Grant annually offers competitive funding awards to individuals, teams and institutions across the state. It was our pleasure to award these individuals and institutions for the summer of 2018 and the 2018–2019 academic year.

New Investigator Awards

Leila Bridgeman, Ph.D., Duke

Assistant Professor, Department of Mechanical Engineering and Materials Science

Switched MPC for Communicating Vehicles

Rodward Hewlin, Ph.D., UNC Charlotte

Assistant Professor, Department of Engineering Technology and Construction Management

Development of a Compact Ionic Polymer Transducing Wall Shear Stress Sensor for High Resolution Measurements in Unsteady Flows

Jun Liu, Ph.D., NC State

Assistant Professor, Department of Mechanical and Aerospace Engineering

Fundamental Studies on the Thermal Spin-Transfer-Torque: Towards the Next Generation Nonvolatile Memory for Space Exploration

Rafael Loureiro, Ph.D., Winston-Salem State

Assistant Professor, Department of Biological Sciences

OMNICROP – An Integrated Systems Alternative to Ideal Crop Site Localization and Cultivation Chamber Self-Management Utilizing Machine Learning – PHASE II – Martian Regolith Crop Viability Prediction

Brian Sylcott, Ph.D., East Carolina

Assistant Professor, Department of Engineering

Characterizing Brain Activation During Concurrent Cognitive Tasks in the Presence of Optical Flow Simulation: A Functional Near-Infrared Spectroscopy Study

Team Competition Awards

Tarek Abdel-Salam, Ph.D., East Carolina

Baja Society of Automotive Engineers (SAE) Competition

Aiden Browne, Ph.D., UNC Charlotte

NASA Robotic Mining Competition

James Conrad, Ph.D., UNC Charlotte

Institute of Electrical and Electronics Engineers (IEEE) Region 3 SoutheastCon 2019 Hardware Competition

Jerry Dahlberg, Ph.D., UNC Charlotte

NASA Student Launch Competition

Jack Edwards, Ph.D., NC State

American Institute for Aeronautics 2019 Design-Fly-Build Competition

Charles Hall, Ph.D., NC State University

Student Unmanned Aerial Systems (SUAS) Competition hosted by the Association for Unmanned Vehicle Systems International (AUVSI)

Charles Hall, Ph.D., NC State

NASA Student Launch Competition

Julie Hoover, Durham Technical Community College

High Altitude Student Payload Program

Doug Knight, Ph.D., Lenoir-Rhyne University

NASA Student Launch Competition

John Muth, Ph.D., NC State

Association for Unmanned Vehicle Systems International (AUVSI) and the US Office of Naval Research RoboSub Competition

Lee Ryneerson, Ph.D., Campbell University

NASA Human Exploration Rover Challenge

Public Outreach Mini-Grant Awards

Crystal Harden, Ph.D., Morehead Planetarium and Science Center

Hidden No More: STEM Women of Color Tour

Stanley Riggs, Ph.D., NC Land of Water (NCLOW), joint-funded with North Carolina Sea Grant

Night-Scape Resources of a Sustainable Ecotourism Trail System on the Outer Albemarle Peninsula (OAP): Tyrrell, Washington and Mainland Hyde-Dare Counties, North Carolina

Community College High-Altitude Ballooning Competition Participants

Catawba Valley Community College

Edgecombe Community College

Durham Technical Community College

Nash Community College

Pitt Community College

Rowan-Cabarrus Community College

Wake Technical Community College

Graduate Research Fellows

Bryce Aberg, Electrical Engineering, NC State
Ashley Ciero, Applied Energy and Electromechanical Engineering, UNC Charlotte
Patrick Gray, Marine Science and Conservation, Duke
Ian Krintz, Engineering Physics, Appalachian State
Eric Land, Plant Biology, NC State
Nicholas Mazzoleni, Mechanical Engineering, NC State
Kellyn Montgomery, Earth Science, NC State
Christopher Munna, Physics, UNC Chapel Hill
Zachary Nasipak, Astrophysics, UNC Chapel Hill
Lindsay Sullivan, Biomedical Engineering, UNC Chapel Hill
Erika Van Goethem, Chemistry, UNC Chapel Hill
William White, Engineering Physics, Appalachian State
Nicholas Wright, Nanoscience, UNC Greensboro
Christopher Yoder, Aerospace Engineering, NC State

North Carolina Sea Grant/NC Space Grant Graduate Research Fellows

Melinda Martinez, Forestry/Remote Sensing, NC State
Emily Ury, Ecology / Biogeochemistry, Duke

NASA & Industry Interns

Trenton Abbott, Aerospace Engineering, NC State (NASA Langley Research Center)
Alex Blaisdell, Aerospace Engineering, NC State (Collier Research Corporation – Hypersizer)
Danielle Curtis, Environmental Studies, UNC Chapel Hill (NASA DEVELOP Program)
Joshua Daniels, Aerospace Engineering, NC State (NASA Langley Research Center)
Nathan Faulkner, Aerospace Engineering, NC State (NASA Langley Research Center)
Collin Hague, Mechanical Engineering, NC State (NASA Langley Research Center)
Wanda Hathaway, Chemistry, Elizabeth City State University (NASA Langley Research Center)
Sierra Marshall, Industrial and Systems Engineering, North Carolina A&T State University (NASA Goddard Space Flight Center)
Jonathan McCready, Aerospace Engineering, NC State (NASA Marshall Space Flight Center)
Conor Mulderrig, Atmospheric Science, UNC Asheville (NASA DEVELOP Program)
Noah Prezant, Aerospace Engineering, NC State (Collier Research Corporation – Hypersizer)
Kate Richardson, Physics, UNC Chapel Hill (NC Museum of Natural Sciences Astrophysics Laboratory)
Ian Senter, History, NC State (NASA Langley Research Center)
Katherine Tighe, Mechanical Engineering, Duke (NASA Jet Propulsion Laboratory)
David Torres, Mechanical Engineering, NC State (NASA Stennis Research Center)
Garrett Toth, Mechanical Engineering, NC State (Collier Research Corporation – Hypersizer)
Sabrina van der Gracht, Computer Science, Elon (NASA Applied Physics Laboratory at Johns Hopkins University)

Undergraduate Research Scholars

Shreyas Ashok, Mechanical Engineering, NC State
Elizabeth Blenk, Aerospace Engineering, NC State
Timothy Chen, Mechanical Engineering, NC State
Blanton Gillespie, Chemistry, UNC Asheville
Roark Habegger, Astrophysics, UNC Chapel Hill
Ashton Johnston, Electrical Engineering, UNC Charlotte
Halen Mattison, Mechanical Engineering, NC State
Metis Meloche, Environmental Studies, UNC Asheville
Jeffrey Miller, Physics, Appalachian State
Gregory Rapp, Physics, Appalachian State
Nathaniel Scott, Applied Physics, Appalachian State
Omar Shaban, Computer Science, UNC Chapel Hill
Darren Stroupe, Physics, UNC Asheville
Megan Yaffey, Chemistry, Appalachian State

STEM Teacher Education Scholars

Brooke Bowen, Middle Grades Education, UNC Charlotte
Sarah Bowman, Science Education (Middle Grades), NC State
Jennifer Crain, Middle Grades Education (Science), Appalachian State
Parks Drake, Elementary Education, UNC Charlotte
April Maynor, Elementary Education, UNC Pembroke
Kellyn McNamara, Elementary Education, UNC Charlotte
Minh McNicholas, Elementary Education, UNC Greensboro
Sarah Pellizzari, Biology, UNC Greensboro
Rachel Price, Science Education (Middle Grades), NC State
Sullivan Reece, Biology (Secondary Education), North Carolina Wesleyan University
Nicole Stumbling Bear, Science Education, UNC Pembroke
Lauren Ventresca, Special and Elementary Education, Elon

Community College Scholars

Steve Bowden, Aviation Technology, Sandhills Community College
Adam Burkins, Engineering Transfer, Asheville-Buncombe Community College
Joseph Chavis, Associate in Science, Robeson Community College
Torin Cuany, Mechanical Engineering, Wake Technical Community College
Christian Donaldson, Mathematics, Asheville-Buncombe Community College
Eskridge Hallman, Electronics and Computer Engineering Technology, Isothermal Community College
William Smith, Chemistry, Asheville-Buncombe Community College
Morgan Soloman, Associate in Science, Cape Fear Community College
Christopher Wagner, Computer Science, Wake Technical Community College
Mikayla Wright, College Transfer, Forsyth Technical Community College
Annie Zheng, Chemistry, Wake Technical Community College

NASA / NC Space Grant

April 13, 2019
8:30 AM - 12 PM
Lenoir, NC

High-Altitude Ballooning Team Challenge and Competition

In association with the 2019 Gravity Games in downtown Lenoir, NC. Event and parking is FREE to the general public. Families are welcome.

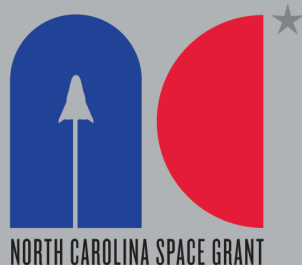


Balloons will be launched from Pit Row and you can learn more about the project at our booth on Science Street.

Participating Teams

Catawba Valley Community College, Durham Tech Community College, Edgecombe Community College, Nash Community College, Pitt Community College, Rowan-Cabarrus Community College, Wake Tech Community College

Google





Statewide Star Party

SIGNATURE EVENT



Each star on the map represents one of the 55 sites hosting the Statewide Star Party. The full list is on the following pages.

Thanks to generous grant support from the North Carolina Space Grant, the 2019 North Carolina Science Festival will again feature the Statewide Star Party as a signature event.

During this seventh annual Statewide Star Party, 55 hosts will offer public skywatching sessions across North Carolina on Friday, April 12, and Saturday, April 13, 2019. Star Party hosts include astronomy clubs, state and local parks, universities, planetariums, science centers, nature centers, and libraries. About 5,000 visitors and 200 STEM professionals and volunteers are expected to participate.

This year's Star Party theme is "The Moon and Beyond," in honor of the 50th anniversary of the Apollo 11 Moon landing. Hosts will lead hands-on activities from the Star Party kit that will help visitors observe the Moon and understand Moon science and exploration.

ABOUT THE NC SCIENCE FESTIVAL

The North Carolina Science Festival is a month-long celebration of science that happens every April. Launched in 2010, the Festival is an initiative of UNC's Morehead Planetarium and Science Center and has grown into one of the largest celebrations of STEM in the world. The Festival highlights the educational, cultural and financial impact of science in our state. Through hands-on activities, science talks, lab tours, nature experiences, expos, exhibits and performances, the Festival engages a wide range of public audiences while inspiring future generations. Find out more at ncsciencefestival.org.

www.ncsciencefestival.org

Proudly produced by





Fifty years ago, the astronauts of Apollo 11 planted their moon boots on the lunar surface and captured the imagination of the nation. Now – half a century later – it's the time for a new generation to experience the magic and majesty of that first “one small step for man, one giant leap for mankind.”

All throughout 2019, join museums and organizations like NC Space Grant across North Carolina for a healthy dose of space mania with Lift Off NC: Apollo + Beyond, a celebration of 50 years of space and lunar explorations. Lift Off NC will be your connection to all the events happening in celebration, including festivals, exhibits, lunar and star parties, movies, rocket launches, space camps, astronomy days, musical performances, educational programming ... and even a few *Star Wars*-themed events!

July 20 marks the exact date of the 50th anniversary of Apollo 11 landing on the moon. Join NC Space Grant, the North Carolina Museum of History and partners around the Triangle and across the state as we celebrate! Visit LiftOffNC.org for a complete list of events and follow #LiftOffNC for updates.

Related Events

NC Museum of History: One Giant Leap: North Carolina and the Space Race

April 5, 2019 – Jan. 5, 2020

Explore North Carolina's role in the space race through stories about the people, places, chimp and technology that helped make America's historic leap to the moon possible. Sit in a mock Gemini training module (on loan from the Morehead Planetarium and Science Center), attempt to manipulate tools while wearing a set of space gloves and try other fun challenges.

NC Museum of Natural Sciences: Science Café Series — Legacy of Apollo: Science of the Moon

April 25, May 23 and July 18 2019, 7 p.m.

Learn about achievements of the Apollo program and how human presence can be expanded to the Moon and beyond, fulfilling the legacy of Apollo. Hear

the latest science and see the latest images from NASA's Lunar Reconnaissance Orbiter. Discuss what the Moon can teach us about the evolution of our Solar System, plus much more.

NC Museum of History: One Giant Leap Festival *Saturday, July 20, 11 a.m. – 4 p.m.*

On the day of the moon landing 50th anniversary, join an indoor/outdoor celebration of Apollo 11's landing, with hands-on crafts, demonstrations and activities.

NC Museum of History: One Hidden Figure *Thursday, Sept. 19, 7 p.m.*

Join Dr. Christine Darden, a mathematician, data analyst and aeronautical engineer with NASA, as she shares experiences from her professional life. Darden was featured in Margot Lee Shetterly's book, *Hidden Figures*, about African-American women who contributed to the space program.

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