

# SC SPACE GRANT CONSORTIUM



## ISSUE 2:

## New SCSGC Members, SCSGC Updates, COVID-19 Resources



### KEVIN LIMEHOUSE

Charleston County Government  
Innovation and Operations Officer  
Office of the Deputy County Administrator

- **Hometown:** Summerville, SC
- **Research Interests:** Any advancement that helps promote better quality of living for our citizens. From water quality to micromobility and everywhere in between.
- **Hobbies:** Spending time with my family, cooking, and enjoying great movies.
- **Current Projects:** Telecommuting, connected and autonomous vehicles, smart infrastructure improvements, CORE SC, and events like the PGAs return in 2021 and the NASA Regional Conference 2021.

*"I am a big nerd for helping people, collaboration, and improving processes."*

### WHAT IS CORE SC?

CORE SC WILL WORK WITH LOCAL, NATIONAL, AND GLOBAL ORGANIZATIONS TO SERVE AS A "NEXUS FOR RESEARCH, INNOVATION, AND COLLABORATION THAT LEADS TO ACTIONABLE OUTCOMES TO IMPROVE COMMUNITY AND SOCIETAL RESILIENCE." THE CENTER WILL FOCUS EFFORTS ON FIVE CENTRAL RESILIENCY SECTORS:

- **WATER** - "MAINTAINING HEALTHY DRINKING WATER, MITIGATION OF COASTAL EROSION, SEA-LEVEL RISE, FILTERING AND CONTROLLING STORM RUN-OFF, RESPONDING TO CLIMATE CHANGE"
- **ENERGY** - "TESTING, DEVELOPING, DEPLOYING RENEWABLE SOURCES SUCH AS SOLAR, WIND, WATER, BATTERY, BIO-SOURCES"
- **CONNECTIVITY** - "ENSURING SOCIETAL ACCESS TO INTERNET AND OTHER MEANS OF COMMUNICATION"
- **AGRICULTURE** - "PROVIDING SUSTAINABLE FOOD SOURCES"
- **NATURAL HAZARDS** - "MITIGATING AND COMMUNICATING/RESPONDING TO EFFECTS OF EARTHQUAKES, TSUNAMIS, FLOODING, HURRICANES, TORNADOS, AND OTHER NATURAL HAZARDS"

**LEARN MORE HERE:**  
[SCSPACEGRANT.COFC.EDU/CORESC](https://scspacegrant.cofc.edu/coresc)



## Dr. N. Brice Orange

### OrangeWave Innovative Science, LLC CEO and Physicist

- **Hometown:** Born, raised, and proud—Oakley, SC
- **Research Interests:** My research passion is definitely the Sun-Earth system. However, I love to dabble in science and R&D, so here goes! I like, and am involved to some degree in research projects related to: solar and plasma physics, robotic telescope control systems and system operations of robotic observatories, environmental/climate science and related technology R&D, high-energy astrophysics, software engineering that supports diverse scientific research fields, vertical flight R&D, development of new radiation shielding technology, and R&D for an experimental plasma physics/magnetic reconnection system that mimics solar flares.

- **Hobbies:** Surfing, Gardening, love spending time with my wife, and all our family and friends. I also enjoy traveling, trying out new food, and trying (with trying really emphasized) to learn Norwegian.

- **Current Projects:**

Since 2015, I (and OWIS) have teamed up with faculty and undergraduate researchers from UVI, South Carolina State University (SCSU), and the US Air Force Academy to further mature some of my solar physics software that is allowing us to construct a long-term multivariate database of global scale solar activity. At present, Dr. Jennifer Cash from SCSU and I have a SCSG REAP award that will also us to historically expand this database to include 24 years worth of data! Our collaboration then intends to use these data to deepen our understanding of the long-range photosphere-corona connection by explaining causality and feedback relationships between different layers of the solar atmosphere.

Over the last year, Myself and an OWIS Systems Engineer have been prototyping and bench testing a self-sustaining line-of-sight communicating device. Our goal is that this device can be tailored in the future as a network for advanced warning of rain events for robotic observatories, or as a suite of climate-environmental data acquisition devices to open up long-term monitoring of such in sparsely populated areas and/or even potentially uninhabited islands. This summer, we will be working with two UVI undergraduate students to complete a production analysis that focuses on a trade-off study of commercially available off-the-shelf versus 3D printed parts manufactured in-house by UVI.

Since October 2019, I have partnered with the US Department of Agriculture to share weekly data from the USVI Climate Monitor to enhance the coverage of their US Drought Monitor in the USVI. I have also recently teamed up with the University of the Virgin Islands group tasked by the US Department of the Interior to revise the territory's Hazard Mitigation Plan, to support their development of a revised resilience strategy against drought. In the coming months, I expect to build upon preliminary work performed by an OWIS intern this Spring (a student attending Trident Technical College interested in pursuing a B.S. in Astronomy one day) to evolve our data sharing software towards full autonomous operation, and continue contributing to the development of technical reports essential to effectively communicating information about changes in territorial rain patterns to policymakers, and the public and private sectors.



## Dr. N. Brice Orange

### OrangeWave Innovative Science, LLC CEO and Physicist

#### *Current Projects Continued...*

During the last six years I have supported OWIS's Chief Technology Officer in developing a device to mimic the energetics of solar flares. We just submitted the technology as a US National Phase patent application, and are already working a new spin-off space technology development company centered around transforming this invention into an advanced plasma propulsion device.

## If applicable, where can we see your work?

If applicable, where can we see your work? Pretty much all my publications can be found and read on either the arXiv (<https://arxiv.org/>), using the Astrophysical Data System (ADS; <https://ui.adsabs.harvard.edu/>), or probably even more easily through my ResearchGate page ([https://www.researchgate.net/profile/N\\_Orange](https://www.researchgate.net/profile/N_Orange)).

Also you can check out and follow the OWIS Facebook page (<https://www.facebook.com/OrangeWave-Innovative-Science-LLC-258286907703493/>), as we try our best to talk about what is and has been going on with us. It has been on our to do list for what feels like many years, but who knows may be 2020 will be different, and we will finally get an OWIS website up and running! Stay tuned.

- **Contact Dr. Orange:** [orangewaveno@gmail.com](mailto:orangewaveno@gmail.com), through the OWIS Facebook page, or by contacting our Chief Operating Officer at [orangewavekm@gmail.com](mailto:orangewavekm@gmail.com) or Chief Communications Officer at [orangewaveto@gmail.com](mailto:orangewaveto@gmail.com).

# SC SPACE GRANT *happenings*

## NASA SPACE GRANT CONSORTIUM DIRECTORS CONFERENCE February 2020 - Washington, D.C.



Thank you, Dr. Donna Roberts of MUSC Health for coming to D.C.! She spoke at our NASA Space Grant conference about her early days with NASA, leaving the agency to go medical school to get her neuroscience degree and being one of the first to study how outer space affects human brain health. Thank you again - especially for representing S.C. & sharing how SC Space Grant/NASA EPSCoR impacted your research. Learn more about Dr. R & her team's study on □ health in space:  
TedTalk: <http://bit.ly/2Py1ceF>

## COMMUNITY NEWS

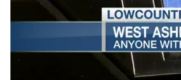
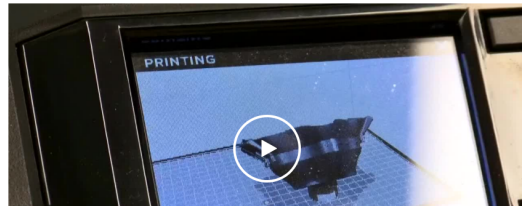
West Ashley High School & MUSC helping healthcare professionals during the coronavirus pandemic. Read more about by heading to our website:

<https://scspacegrant.cofc.edu/covid-19-resources>



LOWCOUNTRY STRONG

### Lowcountry Strong: West Ashley High School using 3D printers to make masks for healthcare workers



### MUSC team releases plans for 3D printed masks

Leslie Cantu | March 26, 2020

Lowcountry Strong: West Ashley High School using 3D printer





At this time, quarantine continues and the fate of our state during this pandemic remains unknown. There is something that we do know – astronaut Scott Kelly said it best: “We are all connected.” NASA SC Space Grant Consortium hopes you, your family & friends stay safe at this time.

We are here to help answer questions regarding the future of Space Grant Fellowships/Scholarships, have STEM Education resources available for K-12 students and last but not least, sharing good news happening in communities across the state of South Carolina despite COVID-19 conditions.

View a variety of STEM at-home activities by us and other NASA Space Grant consortia members & see uplifting community stories.

**<https://scspacegrant.cofc.edu/covid-19-resources>**

# 2020 - 2021 Yr. 28 SCSGC and 2020 SC NASA EPSCoR RID RGP Awardees

## REAP Awards:

Frank Chen - USC  
Laura Redmond - Clemson  
Jon Hakkila - C of C  
Jason Rawlings - Furman  
Scott Husson- Clemson  
Joe Carson - C of C  
Jennifer Cash - SCSU  
Michael Larson - C of C  
Steven Rodney - USC

## Research Scholarships & Fellowships Awards:

Kyle Lackey, USC - Graduate Assistantship  
Jessica Deaver, Clemson - Graduate Assistantship  
Gabrielle Leith, USC - Graduate Assistantship  
Kara Noonan, Clemson - Kathy Sullivan Earth & Marine FS  
Andrew Anderson, USC - Undergraduate  
Matthew Godbold, USC - Undergraduate  
Jordan James, CofC - Undergraduate  
Jameel Moore, Benedict - Undergraduate  
Victoria Snyder, PC - Undergraduate  
JohnPaul Sleiman, Furman - Undergraduate  
Natalie Sorrem, CofC- Undergraduate  
Christopher Carter, USC - MIST Research Award  
Taylor Cronin, CofC - MIST Research Award  
Mary Kule, CofC - MIST Research Award  
Kathleen Wirth, Clemson - STEM Outreach FS  
Eleanor Davis, USC - STEM Outreach FS  
Glenn Eddie Johnson, CofC - STEM Outreach FS

# 2020 - 2021 Yr. 28 SCSGC and 2020 SC NASA EPSCoR RID RGP Awardees

## *Continued*

### Palmetto Academy Faculty:

Frank Chen, USC  
Qiushi Chen, Clemson  
Ana Oprisan, CofC  
Sorinel Oprisan, CofC  
Sudeep Popat, Clemson  
Sakamuri Reddy, MUSC  
Ya-Ping Sun, Clemson  
Teddy Them, CofC

### Palmetto Academy Students:

Trevor Janssen, USC – F. Chen, USC  
Micah Hinton, USC – F. Chen, USC  
William Luce, Clemson – Q. Chen, Clemson  
Christopher Overton, Wofford – Q. Chen, Clemson  
Seth Zoppelt, CofC – A. Orpisan, C of C  
Michael Cox, Clemson – S. Oprisan  
Nicholas Schirato, Clemson – Popat, Clemson  
Clancy Kerr, Clemson – Popat, Clemson  
Alexandrai Pendino, Clemson – Reddy, MUSC  
Meredith Reeves, Furman – Reddy, MUSC  
Lina Zaharias, Furman – Sun, Clemson  
Kathleen Wirth, Clemson – Sun, Clemson  
Marisa Knight, CofC – Them, C of C  
Corrine, CofC – Them, C of C

# Congrats,

## PALMETTO ACADEMY SENIORS!



### *Anna Alford*

Furman University with a degree in Physics & Applied Mathematics. After graduation, she will be pursuing her PhD in Biomedical Engineering at Purdue University.



### *Allie Ottinger*

Clemson University with a degree in Biological Sciences/Social Sciences Cluster. After graduation, she will be pursuing her MD degree at the Medical University of South Carolina in the fall.



### *Clancy Kerr*

Clemson University with a degree in Microbiology. After graduation, she will be pursuing her PhD in Environmental Engineering.



A top-down view of a desk with a laptop on the left, a ruler at the top right, a pen holder with pens in the center, and a cup of coffee at the bottom. The background is a light, neutral color with some scattered paper shavings and a pencil.

# NEED A NEW ZOOM BACKGROUND?

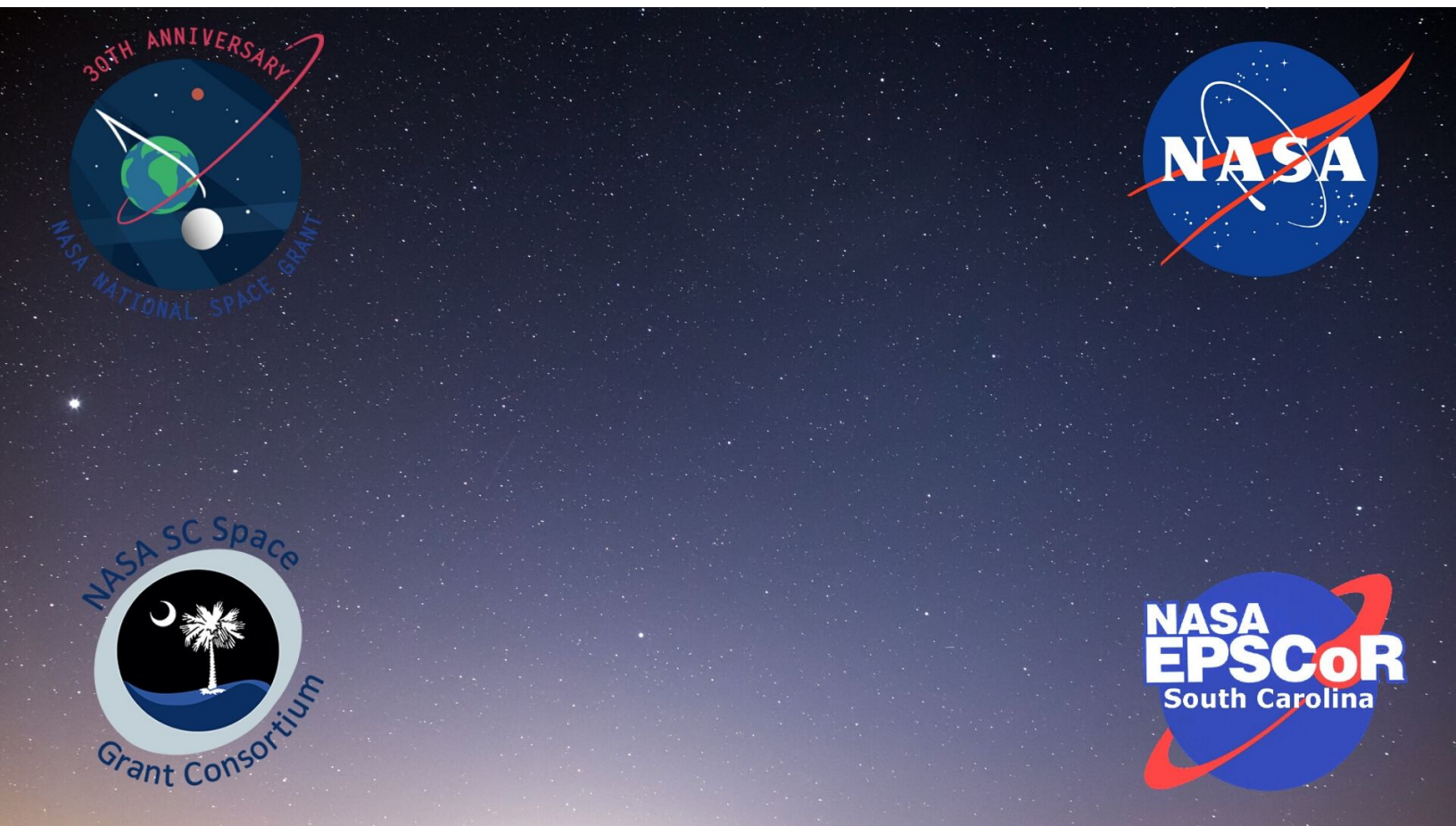
Try them out!

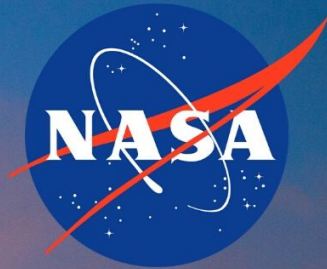
Screenshot the  
following images you  
like.

Share a photo of you  
using our backgrounds  
with us!



# SCREENSHOT & SAVE!





# SCREENSHOT & SAVE!

