



**Academic Affairs Committee**  
**October 29, 2024**  
**1:45pm**

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**Information Item**

AAC-2      Update on Louis Stokes Alliance for Minority Participation (Hamilton)

**Background Information**

Named for former Ohio congressman Louis Stokes, the Louis Stokes Alliance for Minority Participation (LSAMP) is a program of the National Science Foundation. LSAMPs around the nation prepare students from backgrounds that are under-represented in science for success in STEM majors and STEM careers. The Mountains to Sea LSAMP is comprised of five UNC System institutions, led by UNC Greensboro. It is funded by a renewable \$3.5 million, five-year grant. In addition to mentoring and structured professional development, these students receive \$3,000 annual stipends to serve as outside-of-class learning assistants for thousands of their peers in introductory science classes. As peer facilitators, they lead discussions that have been shown to improve content mastery, decrease failure rates, and increase students' sense of belonging.

LSAMP students in their third and fourth years also receive grant support to participate in faculty-led research, so hours that would have been spent working off campus can instead be invested in developing the skills and knowledge necessary for success in graduate school. Dozens of LSAMP students across the Alliance receive \$4,000 stipends for summer research and internship experiences, with students conducting work in fields as diverse as paleopathology in Padua, Italy and space weather at NASA Langley.

In addition to UNCG, the Alliance is comprised of Western Carolina University, East Carolina University, UNC Wilmington, and Appalachian State University.

Attachment: Presentation

A handwritten signature in black ink, appearing to read "Alan Boyette".

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Alan Boyette  
Interim Provost & Executive Vice Chancellor



UNC  
GREENSBORO

**UNCG Louis Stokes Alliance  
Achieving Success in STEM**

# The Alliance

Appalachian  
STATE UNIVERSITY

ECU

UNC GREENSBORO

UNCW

Western  
Carolina  
UNIVERSITY



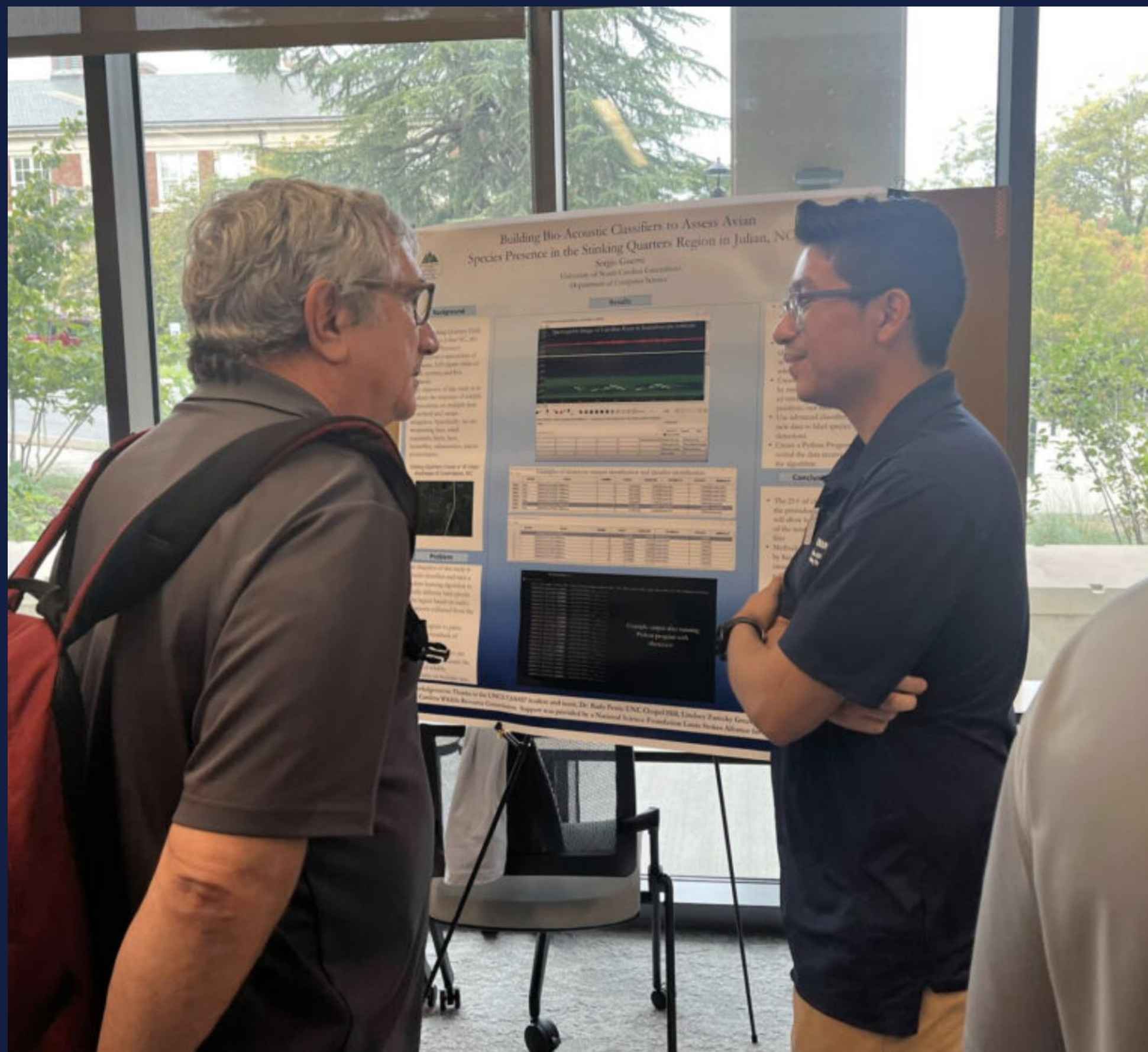
**\$3.4 Million Over Five Years  
(Renewable)**

**Funded by the National Science  
Foundation**

**Supports NSF-Defined URM  
Students**

**Focus on Critical Transitions**

# UNCG LSAMP Scholars



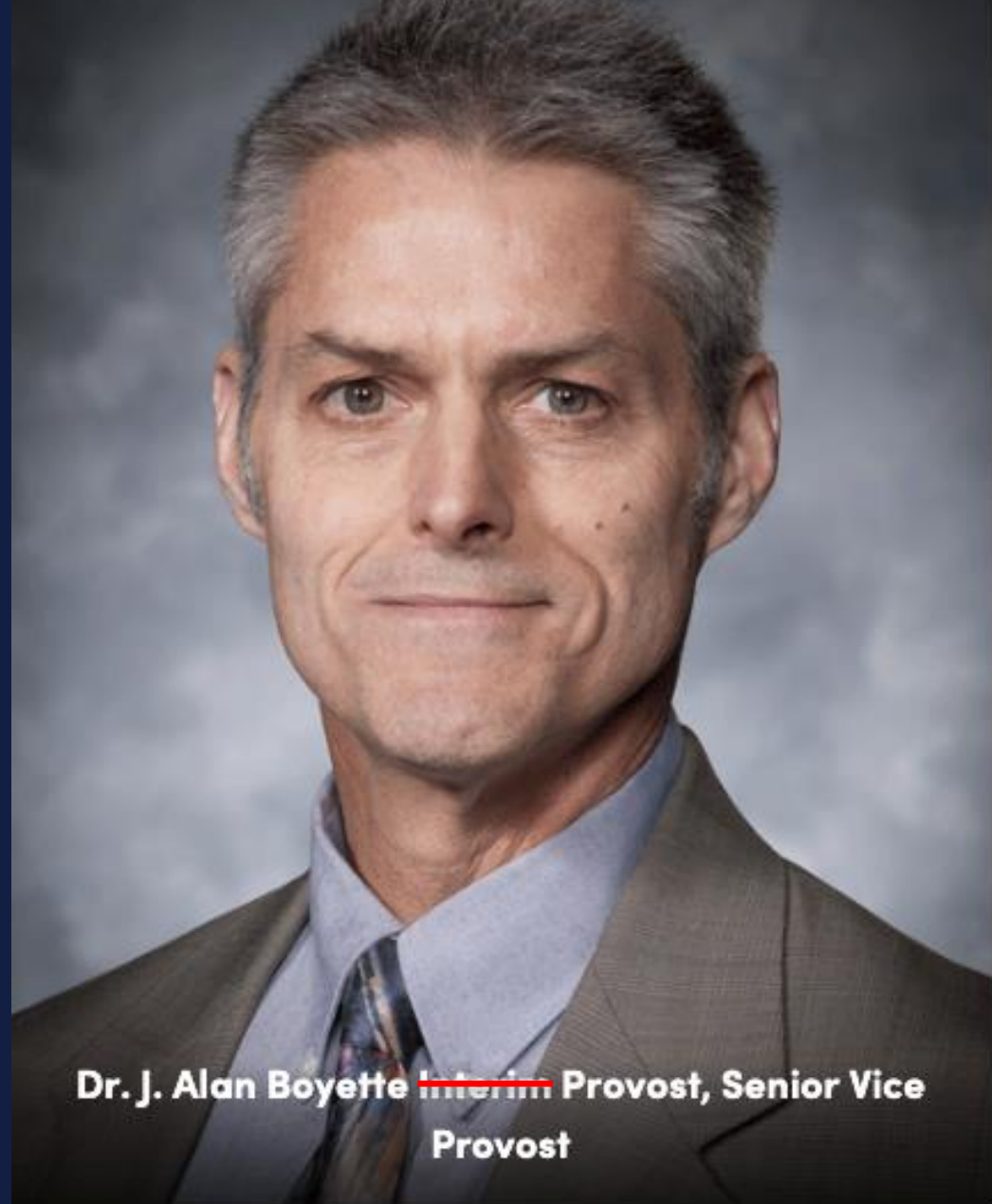
**Peer Learning Assistants**

**Structured Personal and Professional Development**

**Research Placements**

**Scholarship Support**

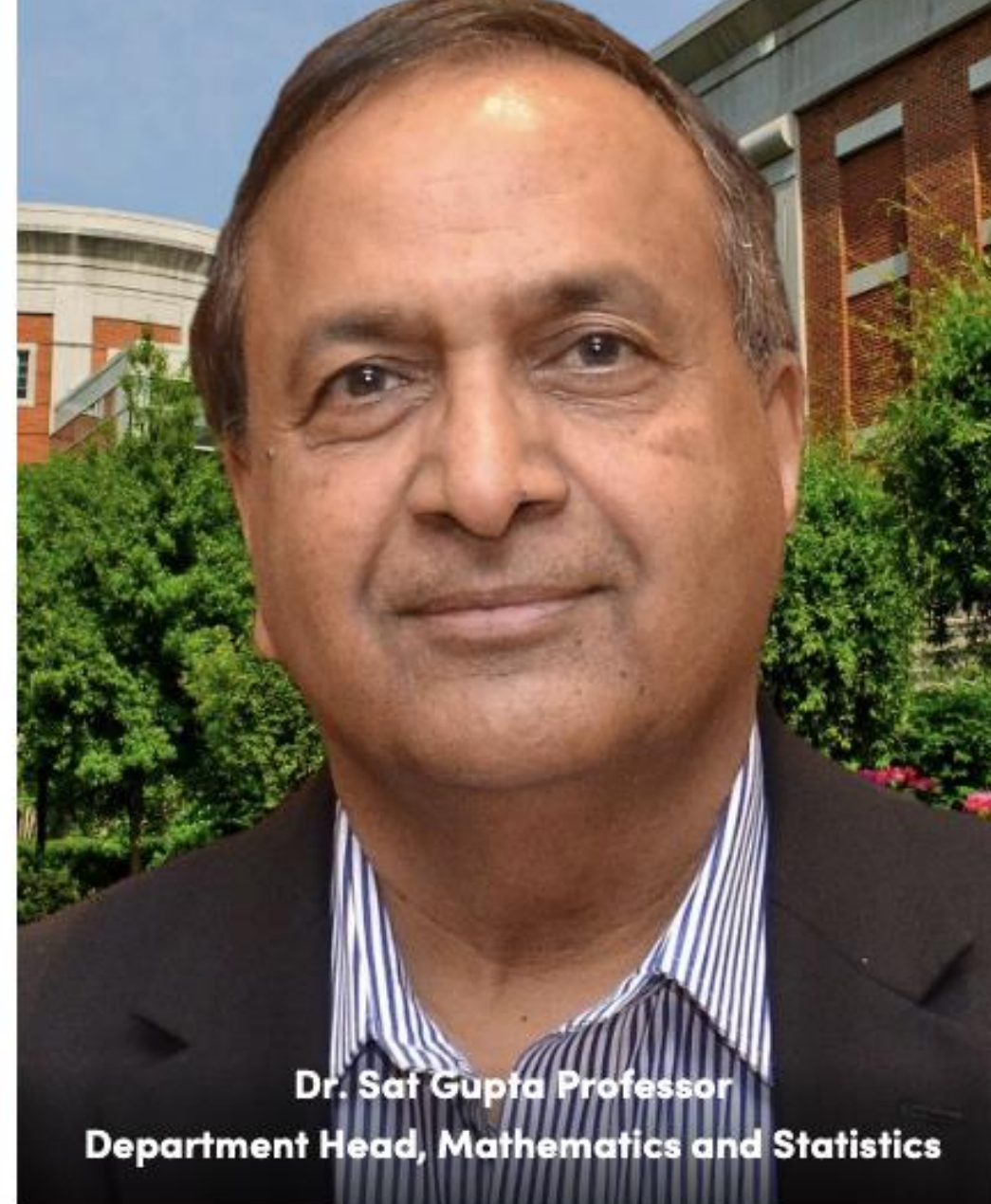
# Alliance Leadership



Dr. J. Alan Boyette ~~interim~~ Provost, Senior Vice Provost



Curtis Green  
Lecturer, Grogan Faculty Fellow



Dr. Saf Gupta Professor  
Department Head, Mathematics and Statistics



Dr. Andrew Hamilton  
Dean of Undergraduate Studies



Clara Hidalgo  
Program Manager



Chinaemaze 'Kelsey' Okora  
NIH and NSF Research and Development Project Manager



Dr. Julie Mendez-Smith Professor,  
Psychology



Dr. Malcolm Schug  
Associate Professor, Department Head, Biology

# NASA DEVELOP National Program

## Summer 2024 Internship



### About NASA DEVELOP

- Addresses educational and public goals through inter-agency research projects using NASA data and Earth observations
- Focused on STEM and related fields in areas of study and disciplines for research projects
- Quality training program for both participants and career organizational staff in areas for the challenges that face our society and future generations
- Teams of participants both in person and virtual meet on 10 week training projects that include data from observation missions, data products, advanced tools and software, understanding of NASA high science data and technology

### How I Found DEVELOP

- Desire to do an Internship before graduation
- Used Handshake and browsed through Internships for the summer
- Applied using resume -> got accepted! -> interviewed



### Where I Was



Department	Department
Earth Science	Earth Science
Earth Science	Earth Science
Earth Science	Earth Science
Earth Science	Earth Science

### New Pilot Project

- Space Weather
- Introduced by Nick Fox - Head of Space Weather at NASA HQ
- Jesse Pava - Head of Meteorology at NASA HQ, science advisor
- DEVELOP Day at HQ



### Bonus Activities

- NASA HQ
- NASA HQ
- NASA HQ

# About NASA DEVELOP

- Addresses environmental and public issues through interdisciplinary research projects using NASA data and Earth observations
- Focused on GIS and remote sensing but all areas of study are applicable to research projects
- Capacity building program in which both participants and partner organizations prepare them for the challenges that face our society and future generations
- Teams of participants both in-person and virtual conduct 10 week feasibility projects that utilize NASA Earth observation missions, this provides advanced skills and increases understanding of NASA Earth science data and technology

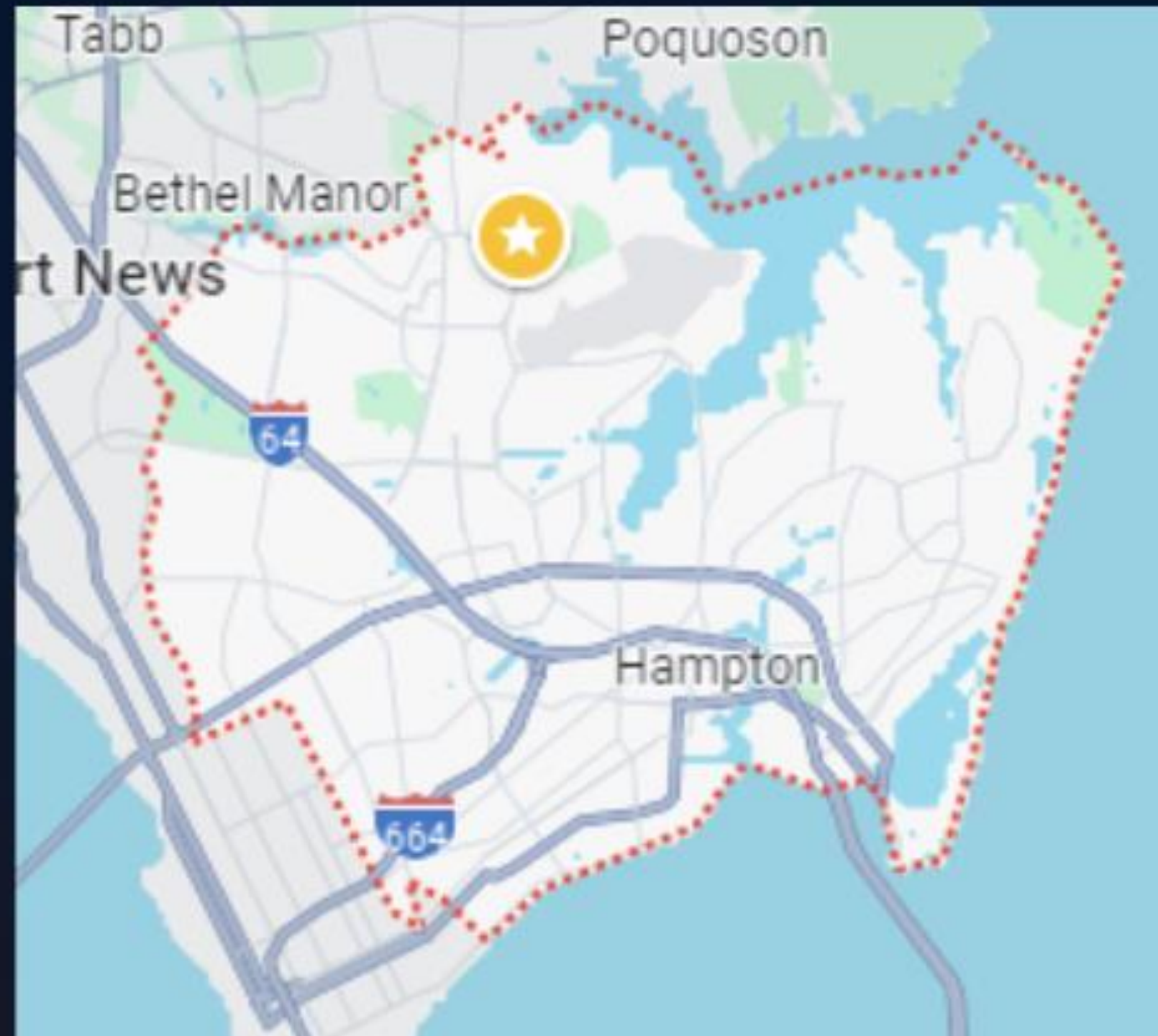
# How I Found DEVELOP

- Desire to do an internship before graduation
- Used Handshake and browsed through internships for the summer
- Applied using resume --> got accepted!! --> interviewed



# Where I Was

- NASA Langley Research Center
  - Hampton, Virginia
- Pop-up locations through universities and other NASA centers
  - NCEI
  - GA
  - NY
  - HI



# DEVELOP Project Categories



CAPACITY BUILDING



DISASTERS



WATER RESOURCES



AGRICULTURE



CLIMATE & RESILIENCE



HEALTH & AIR QUALITY



ECOLOGICAL CONSERVATION



WILDLAND FIRES

# New Pilot Project

## Space Weather

- Introduced by Nicki Fox ~ head of Space Weather at NASA HQ
- Jamie Favors ~ head of Heliophysics at NASA HQ, science advisor
- DEVELOP Day at HQ



## Glacier & Denali Space Weather



Enhancing Aurora Watch Planning at Glacier and Denali National Parks

### Project Synopsis

Park visitors come to Glacier and Denali National Parks at specific times throughout the year to view the aurora borealis. The National Park Service is interested in new ways to inform park visitors about the characteristics of aurora and evaluate current predictions of aurora occurrences at Glacier and Denali National Park. By collecting data from multiple prediction models and cross-referencing them with Earth observation data, the project provides valuable insight for anyone looking to optimize their aurora viewing experience.

### Project Partners

- National Park Service, Glacier National Park
- National Park Service, National Sounds and Night-Sky Division



### Objectives

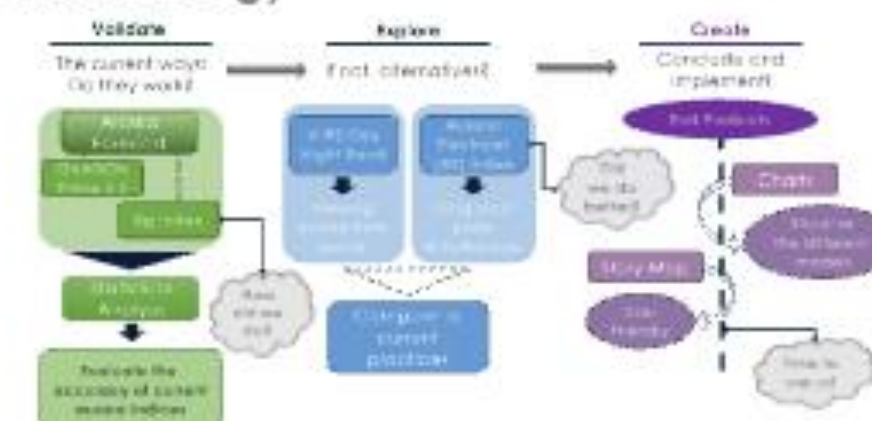
- Validate current aurora prediction methods
- Explore new ways to predict aurora occurrences
- Create educational tools and provide guidance to the National Park Service to better inform park visitors

### Study Area & Period

- December 2015 – May 2024
- Start of Solar Cycle 25 solar maximum in 2025
- (and/or) the aurora probability at designated National Parks



### Methodology



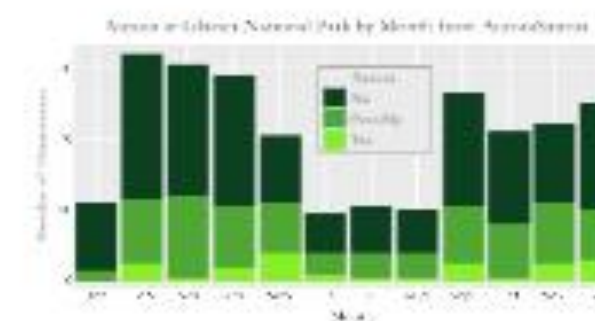
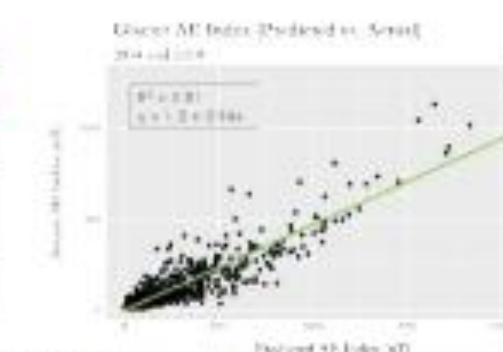
### Earth Observation



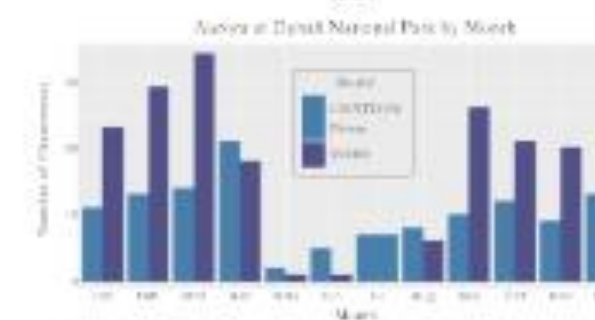
Virginia – Langley | Summer 2024

### Results

Glacier NP Data (Predicted vs. Actual)	
Probability both models agree	0.82
Probability of both models agreeing by another factor	0.24
Global Kp	0.54



DENALI NP Data (Predicted vs. Actual)	
Probability both models agree	0.85
Probability of both models agreeing by another factor	0.24
Global Kp	0.54



Conclusion Made	DENALI NP Data		
	Positive	Negative	Real
Positive	75	100	100
Negative	11	100	100
Real	111	111	100

### Conclusions

- The National Park Service can use the Kp index over the Kp index from a prediction model to predict aurora occurrences at Glacier and Denali National Parks.
- DEVELOP Day will be held at the National Park Service to inform park visitors about the characteristics of aurora and evaluate current predictions of aurora occurrences at Glacier and Denali National Park. The NPS can continue to use DEVELOP from a prediction model to better inform park visitors about aurora occurrences.
- The VIIRS Day/Night Band is a good indicator of aurora occurrences at Glacier and Denali National Parks. The NPS can continue to use VIIRS Day/Night Band to monitor aurora occurrences at Glacier and Denali National Parks.

### Acknowledgements

#### Project Partners:

- Debby Smith, Mark Bell, Phil Wilson (Glacier National Park)
- Sharyn Anderson (National Sounds & Night-Sky Division)
- Tim Conroy (Interagency Regional Office)

#### Science Advisors:

- Dr. Xiaoli (NASA Langley Research Center)
- Dr. Yilun Zhang (NASA Goddard Space Flight Center, Community Coordinated Modeling Center)
- Jamie Byers & Dr. Lisa Whites (NASA Heliophysics Division)

#### Leads:

- Maria Smolard (Project Coordination Fellow, Virginia – Langley)
- Lamin Pate (DEVELOP Senior Fellow, Virginia – Langley)

### Team Members



Blake Zalus, Project Lead | Elise Segel | Rachee Thompson | Rusty Poyner



# Bonus Activities

Campus tours  
14 x 22 wind tunnel  
8 ft wind tunnel  
hangar

Professional headshots

NCAS cohort visitation speech





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*Find your way here*

**Thank You!**