



# COASTAL RESILIENCE CENTER

*A U.S. Department of Homeland Security Center of Excellence*

Dr. Camellia Moses Okpodu, Director

GROUP FOR MICROGRAVITY AND ENVIRONMENTAL BIOLOGY

**GMEB**

"ALWAYS QUESTION. ALWAYS WONDER."



THE UNIVERSITY  
*of* NORTH CAROLINA  
*at* CHAPEL HILL



**OLD DOMINION**  
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*Achieving With Excellence*



# ***A Systems Approach: Developing Cross-Site Multiple Drivers to Understand Climate Change, Sea-level Rise and Coastal Flooding for an African American Community in Portsmouth, VA***

Camellia Moses Okpodu, Ph.D.



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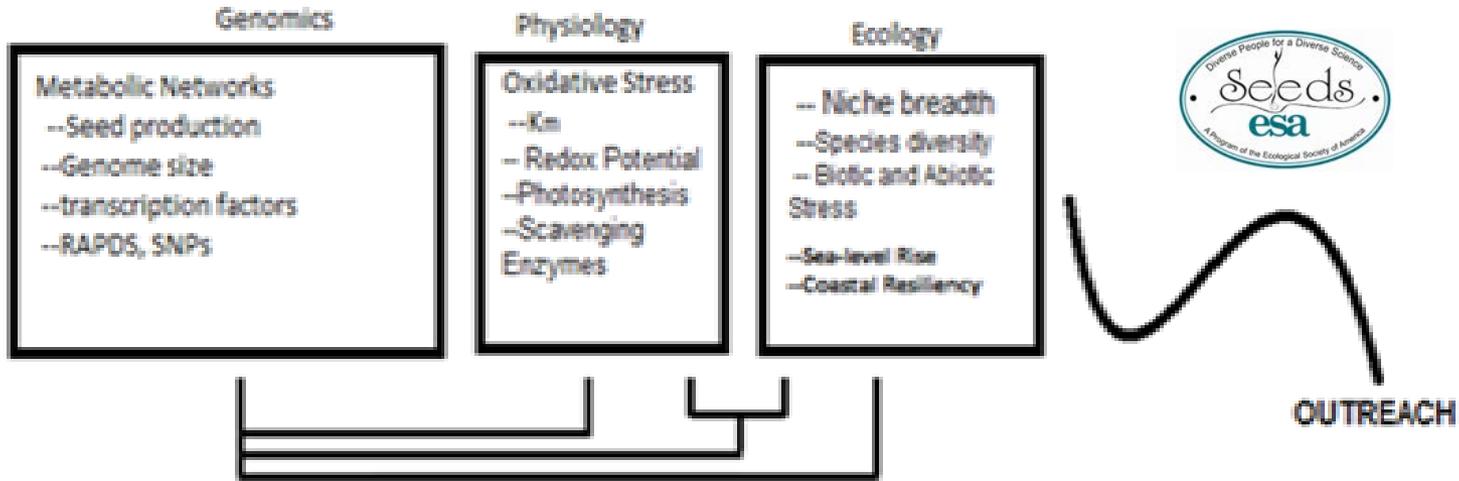


# Acknowledgements

- Norfolk State University
  - Dr. Stacey Franklin Jones (Provost)
  - Dr. Joseph Hall (Interim Dean of CSET)
  - Dr. Belinda Anderson (Dean of COLA)

## Old Dominion University

- Dr. Michelle Covi
- Dr. Wie Yusuf
- Dr. Larry Atkinson
- Dr. Gail Nicula
- Dr. Joshua Behr



**Figure 1. The IC-CAE and GMEB Systems Approach to Integrating basic research with outreach and workforce development.**



# In the beginning...

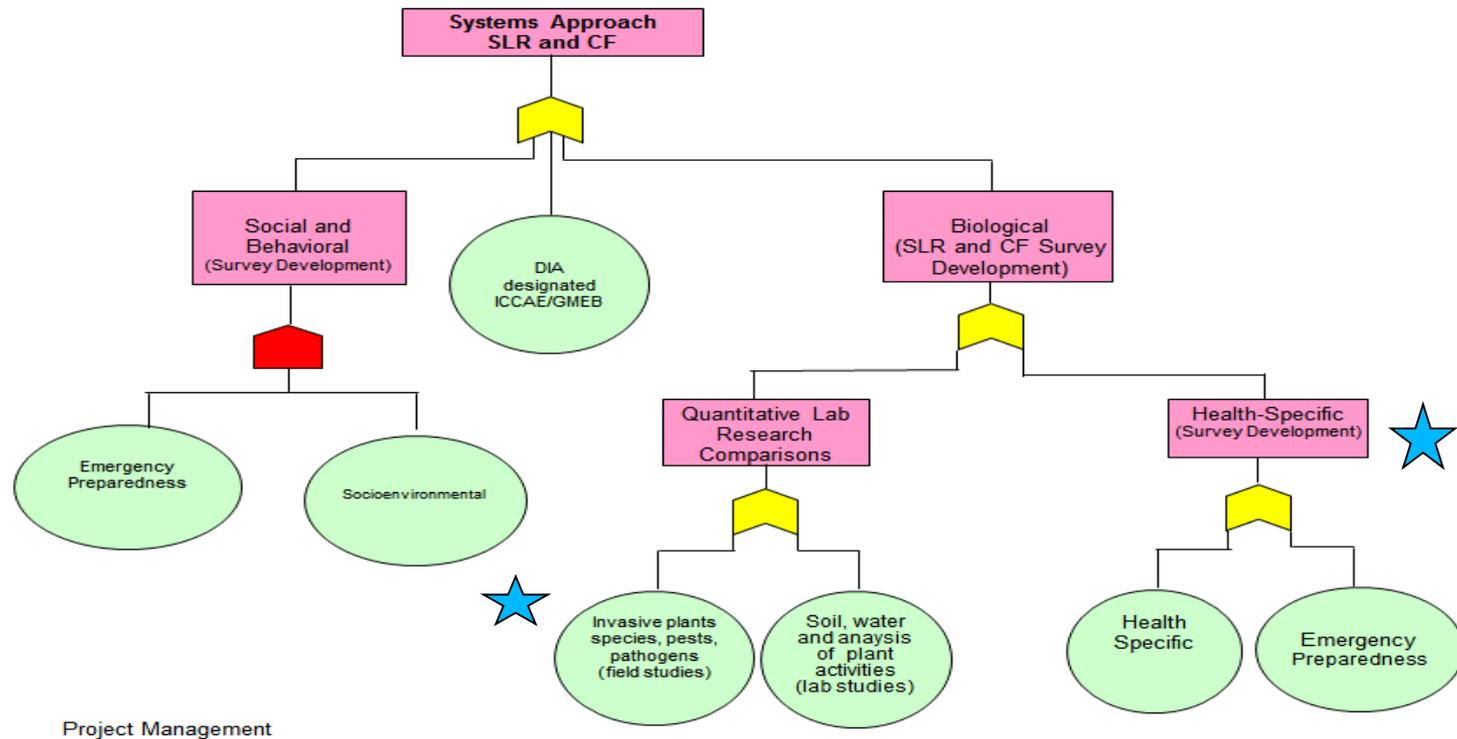
Swallows et al. (ca. 2015) concluded that African Americans in the Chesapeake Bay watershed had a **lower affinity for the environment and environmental resources** than other ethnic groups that participated in his survey on the Maryland Eastern Shore.

**According to Algernon Austin** former director of the Economic Policy Institute's Program on Race, Ethnicity, and the Economy, in a May 8<sup>th</sup> editorial for the New York Times " ...Hispanic Americans and African-Americans may not be the most visible advocates for addressing climate change, these communities are among the most concerned in the United States."-- [Accessed Sept. 23, 2015 [www.nytimes.org](http://www.nytimes.org)]





# Cross-disciplinary Approach to Address the Inconsistency



Project Management



# Abiotic and Biotic Factors

## Flora

- How do plants respond to changes in soil because of salt (salinity)?
- Grasses that are used for coast restoration, how specifically do they adapt?
- Can these adaptations be seen at the DNA level via epigenetics analysis?

## Fauna

- What are the conceptual models for how underserved coastal communities respond and adapt to sea level rise?
- Do African American's have a low affinity for the environment as described by Swallow?



# FOCUS ON THE FLORA

## Raisa Barrera (NSU)

Dr. Camellia Moses Okpodu, Director



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# FOCUS ON THE FAUNA

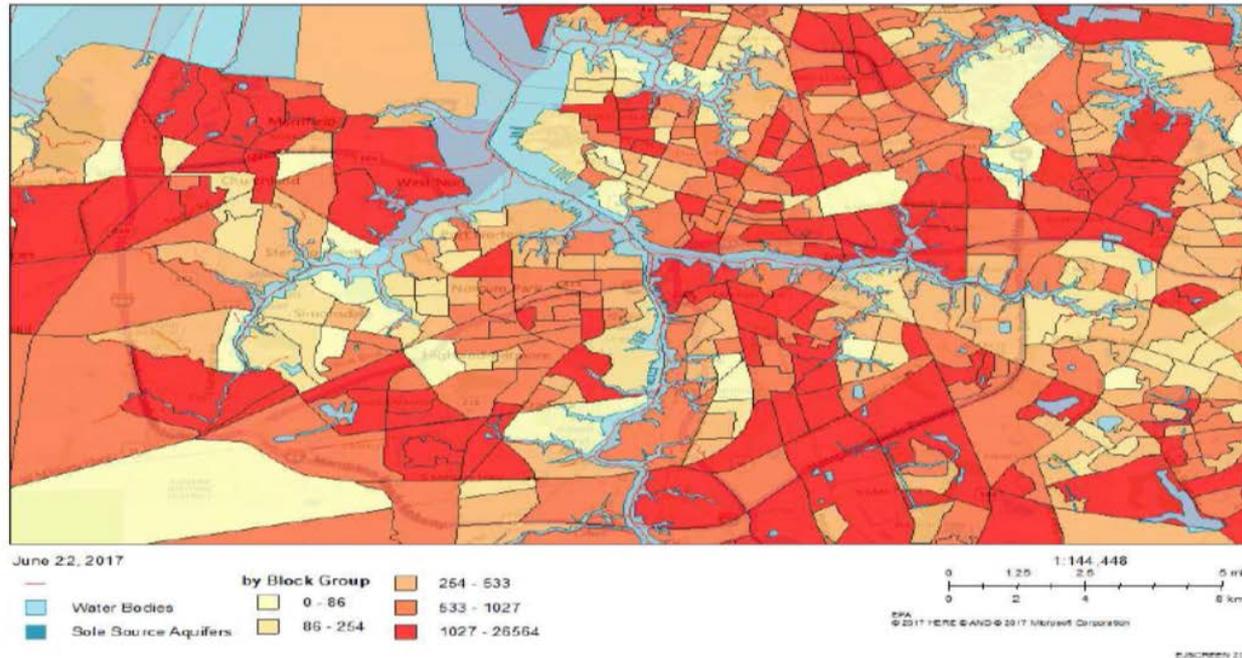
Dr. Camellia Moses Okpodu



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### Minorities and Blacks in Portsmouth



The Census Bureau website (<http://census.gov/data.html>) for more explanations regarding Census Bureau data from the full 2000 Census Summary File 3 (SF3) estimates, the 2010 Census Summary File 1 (SF1) 100% count data, and the annual American Community Survey (ACS) estimates using the 2008-2012 ACS 5-Year Summary database.



## Professional Development Activities for the Summer

1. GRE Preparation (July 10-18)
2. IC-CAE Resume Development (July 3)
3. Preparation of application for NSF Graduate Fellowships or other funding opportunities (July 10)
4. Southern Sociological Society 2018, News Orleans, LA :Racial Theory, Analysis and Politics in Trump America



# Questionnaire Development

*Group 1 – EJ Professionals*

*Group 2 – Electronic Review Social Justice/Environmental Groups*

*Group 3 – In Person Focus Groups*



# Curriculum Development

- National Security Certificate (NSC)
  - Capstone in INS 404 Biosecurity and Urban Agriculture
  - BIO 161 Plants and Society: Botany for non-majors (lecture and laboratory)
  - Modules on GIS, Preserving and Restoring Wetlands for Biology 100L (non-majors) and Biology 261 (General Botany)

## Next Steps

- Additional Funding

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  - Dr. Bernadette Holmes (Collaborator)

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