

*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*

*Micropropagation of salt tolerant ornamentals and grasses in flood prone locales*

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DHS Grant

# Project Overview

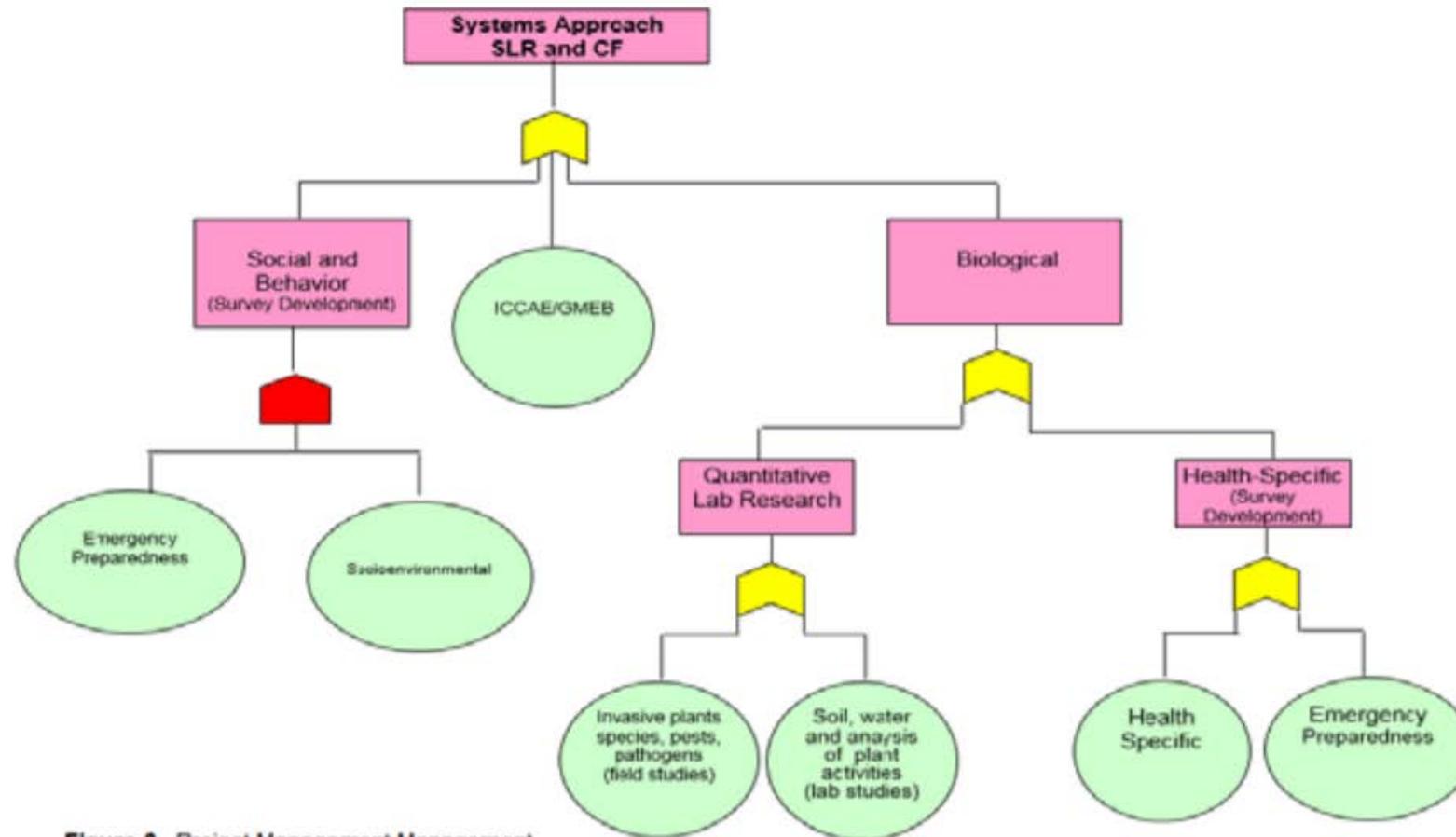


Figure 2. Project Management Management.

# The Tissue Culture

- ▶ Smooth Cord Grass (*Spartina alterniflora*)
  - ▶ Cultured on MS media enhanced with branching hormones
- ▶ Other test species

# Microclone Plant Tissue Culture Kit

- ▶ Branching media
  - ▶ Multiplication media for woody plants (contains TDZ)
  - ▶ General multiplication media for herbaceous plants (contains BA)
- ▶ Rooting Media
  - ▶ General rooting media for both woody and herbaceous propagules (contains NAA)

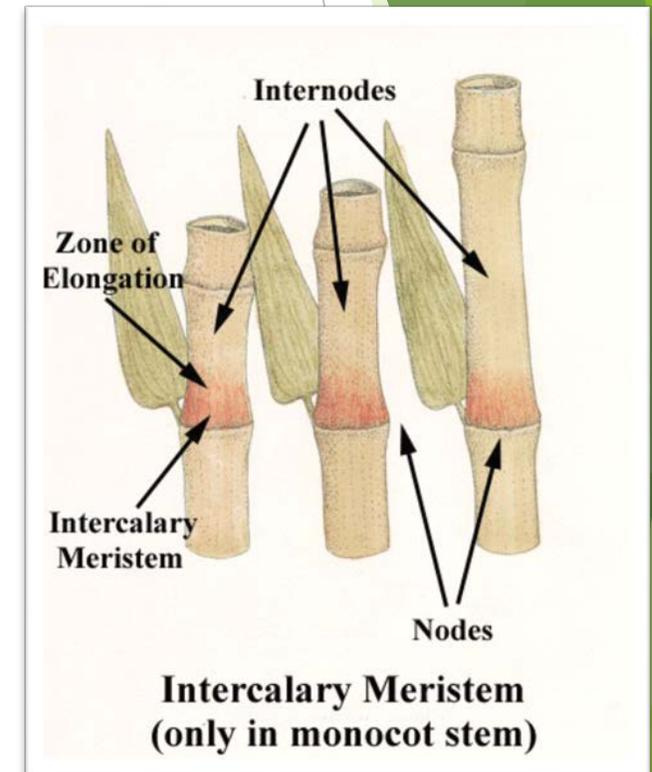
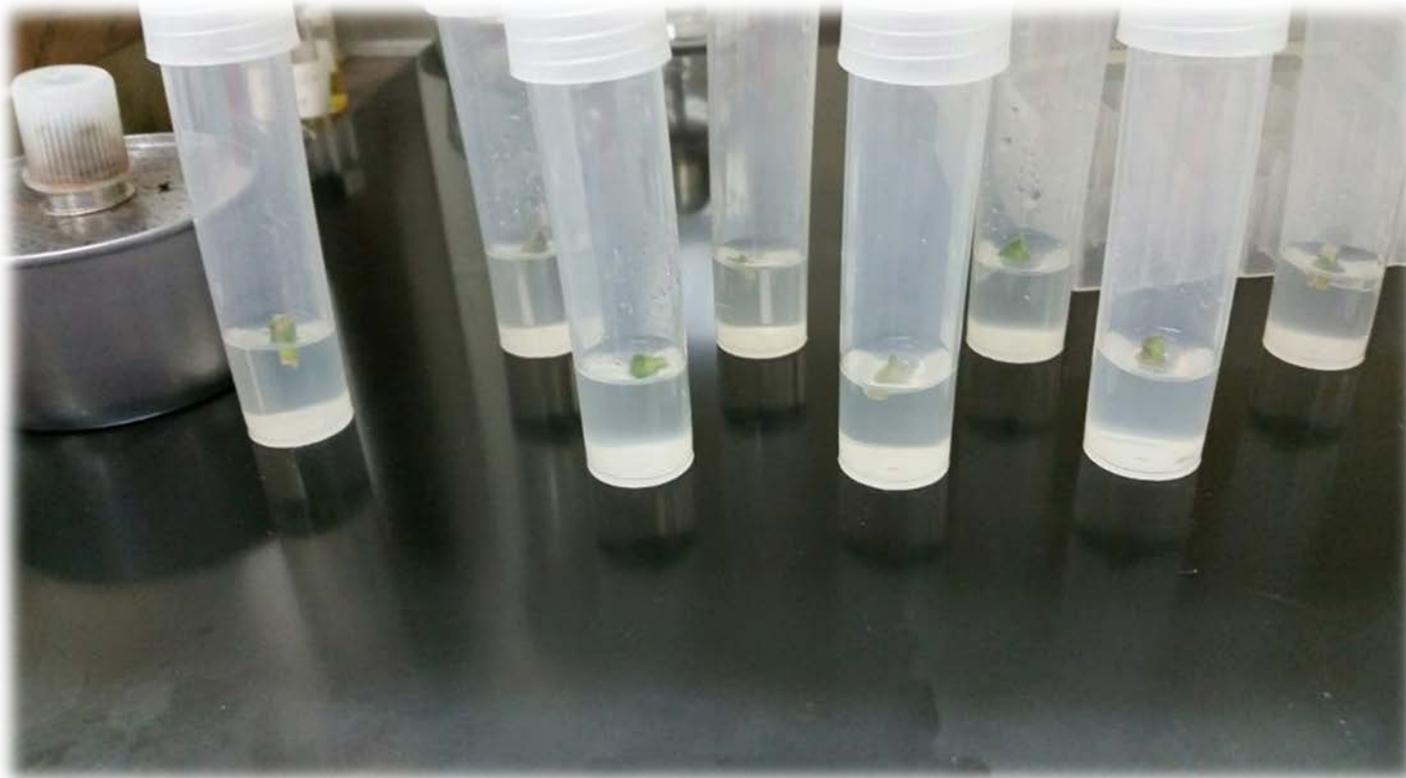
# Developing an SOP

- ▶ Detailed literature review
- ▶ Exhaustive survey of various tutorial videos on plant tissue propagation
- ▶ Writing my own protocol

# Inserting *S. alterniflora* explants



# Culture of *S. alterniflora*



[http://www.biologyjunction.com/plant\\_structure\\_bi1.htm](http://www.biologyjunction.com/plant_structure_bi1.htm)

# Purpose

- ▶ Epigenetics is an emerging field
  - ▶ Rather than focusing on the genome as a whole, epigenetics focuses on those genes which are expressed
  - ▶ Our experiments aim to study a few of the mechanisms that change gene expression

# Experimental Phase

- ▶ DNA Isolation will be done on the populations before and after both greenhouse experiments and establishment *in situ*
  - ▶ Epigenetic variation
  - ▶ Identify genotypes with favorable salt stress potential
  - ▶ Develop efficient propagation protocol
  - ▶ Tissue culture of these genotypes will more reliably reproduce the desired genetic signature

# Next Steps

- ▶ Continued propagation of the test species
- ▶ Selection of field sites
- ▶ Designing greenhouse and laboratory protocol

# Acknowledgements

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