Introduction

The Initiative on Coastal Adaptation and Resilience (iCAR) engages stakeholders to facilitate the adoption of policies and practices that reduce vulnerability to coastal hazards within the context of a changing climate and extreme weather events. This transdisciplinary initiative brings perspectives from climate/physical sciences, engineering, policy, and social sciences to examine interactions between communities and the environments. iCAR also engages in research and education to provide the understanding and ideas needed to make critical decisions regarding our changing and vulnerable coasts. While the current focus is on local communities in Pinellas and Hillsborough Counties (Fig. 1) the ultimate goal is to create a methodology that is scalable and transferable to create more resilient communities to any type of hazard.

Complexity of Translation of Science into Policy

Ideally science should be translated into policy (Fig 2) but the actual process of translation of science into policy is complex, and impacted by economic feasibility, public knowledge and awareness, and decision-making levels. Hence iCAR facilitates communication among scientists, policy makers and communities through various activites (Table 1). Table2 summarizes examples of workshop topics and outcomes as well as research topics and gaps.

Engagement: Community Activities and Annual Workshops

Community engagement activities include: i) annual workshops where community members, scientists, policy makers (elected officials), government officials, NGOs and businesses come together to discuss resilience issues and solutions, ii) community education speaker series called 'iCAR Climate 101' where we bring in speakers, once a month, to a community education center, to educate public about various aspects of climate change and sea level rise issues related to resilience, iii) K-12 STEM workshop called 'Crowdsourced Flood Mapping: Mapping Flood Vulnerabilities and Solutions' where students learn about causes of coastal flooding and did field work to visit areas known to have storm drain problems.

Table 1: Examples of Community Engagement Activities

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<th>Community Engagement Activities: Examples</th>
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Table 2: Examples of Workshop Topics and Outcomes Regarding Coastal Adaptation and Resilience in Tampa Bay

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<th>Workshop Topics and Outcomes</th>
<th>Key Community Interests and Future Topics (Research Areas)</th>
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Key Results: iCAR Research Project

Coastal Flooding
Assessing Climate Resilience In Diverse Communities

Research Objectives are: i) to identify patterns of biophysical and socio-economic vulnerability in St. Petersburg and surrounding communities; ii) to identify the specific challenges and needs of communities facing these two types of vulnerability with specific focus on marginalized communities; and iii) to assess what information is being received by disparate communities, how communities learn about problems and solutions to climate-related events.

Methods:
- Mapping of biophysical and socioeconomic vulnerability measures
- Community-based qualitative research methods
- Survey data: 120+ surveys, mainly from SA and MCP
- Interviews: 5
- Group meetings: 3
- 100+ hours of participant observation at other community discussions/ events

Key Findings:
- Results from the mapping project (Fig 3) shows that Shore Acres (SA) and Greater Pinellas Points (GPP) neighborhoods have greater potential for coastal vulnerability and resiliency (in the context of access to resources, income and education) in spite of their increased biophysical vulnerability than Midtown/Chidls Park (MCP) and West East Leasman (W-EL).
- While MCP and W-EL neighborhoods are not biophysically vulnerable, they are socioeconomically vulnerable (in the context of poverty, unemployment, education, disability and dependence of SNAP as well as environmental risk/ exposure) (Fig 4).
- Standard ways of dispersing information are not reaching socioeconomically vulnerable communities (Fig 5).

Thank you sponsors
- ASSU, ASPPR, TBEP, GMI, GTU, City of St. Pete, GS-GIS Lab, Spatial Networks, Dewberry, HDR, VHB

There are many sponsors that support various iCAR activities

References

See Table 1 for other relevant references.

Figure 1. Data from St. Petersburg Gage (H#262500): tidal EL, SLR, flooding.

Figure 2. Ideal vs. Actual path of translation of science into policy.

Figure 3. Biophysical vulnerability of diverse study communities.

Figure 4. Socioeconomical vulnerability of diverse study communities.

Figure 5. Example of survey results related to awareness and information.