

July 2022 STAR Meeting

GSS & the COAST Card Project

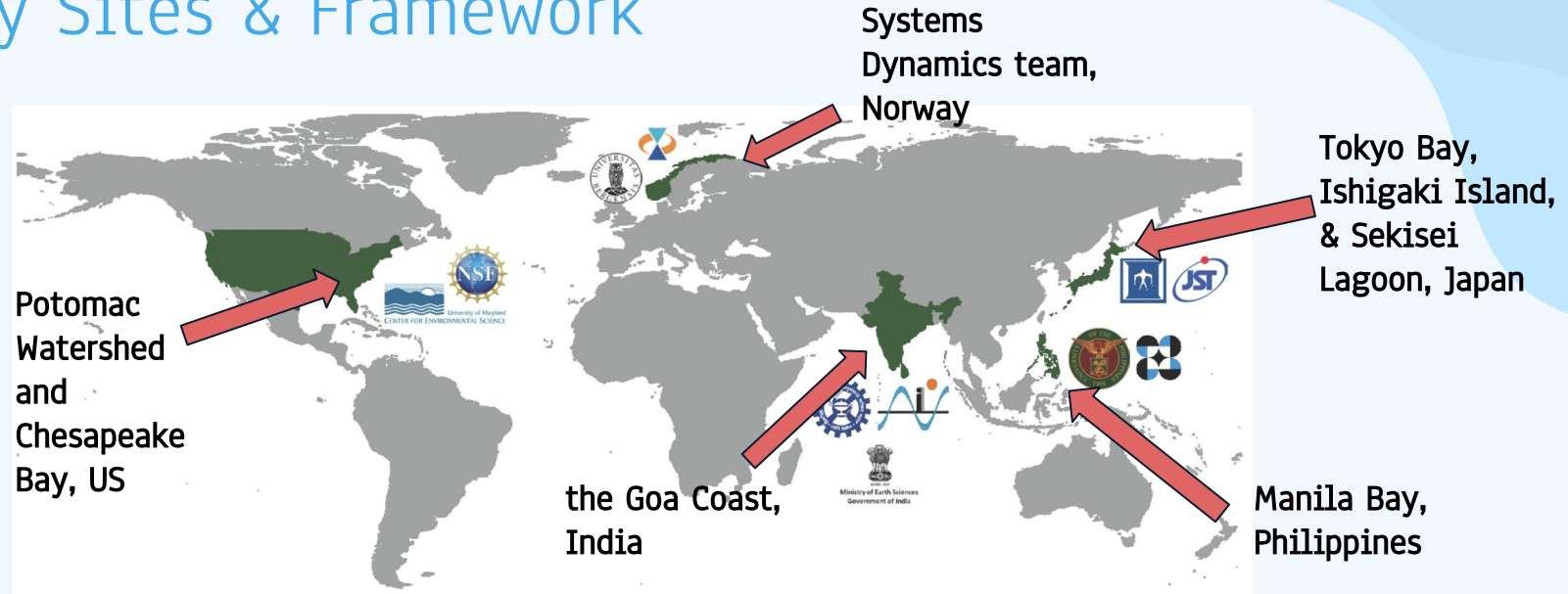
GSS Scholars & Fellows: Nick An, Anna
Calderón, Lawren Caldwell,
Pheng Lor



COAST Card

Coastal Ocean Assessment for Sustainability and Transformation
or “COAST Card” is an innovative stakeholder-driven tool that monitors,
forecasts, and reports the effectiveness of management decisions on coastal
and ocean sustainability.

Study Sites & Framework

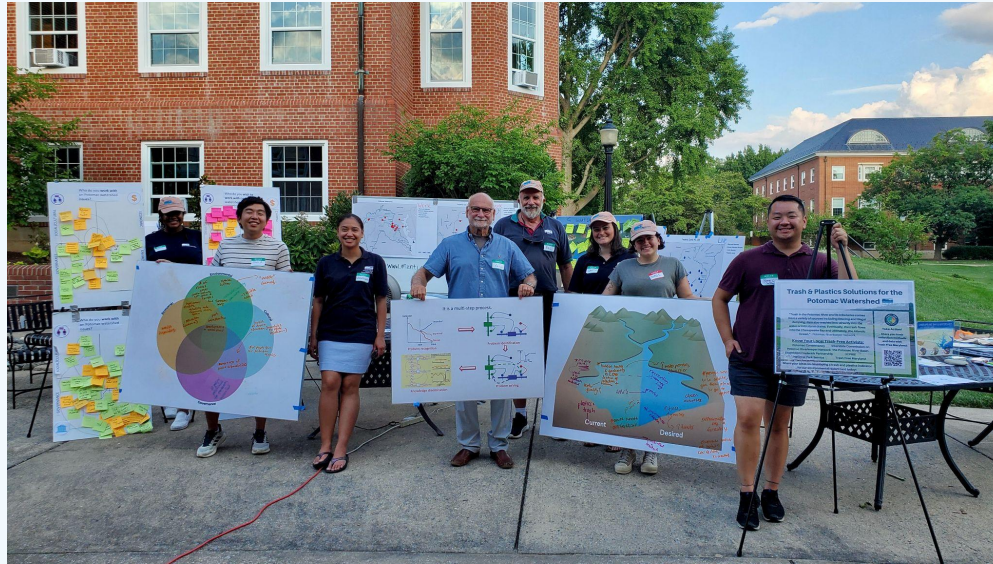


COAST Card uses a **three pronged approach** to improve ocean sustainability management practices:

1. A Social-ecological Report Card
2. Social Network Analysis
3. Systems Dynamic Modeling

Community Engagement & SNA Development

Stakeholder/Community Partner Open House



First Potomac Watershed Open House at Hood College in Frederick, MD



GSS Fellow: Nick An

Coast Card - Annapolis, Maryland
MPH, Environmental Health
Emory University

Public Health Focus

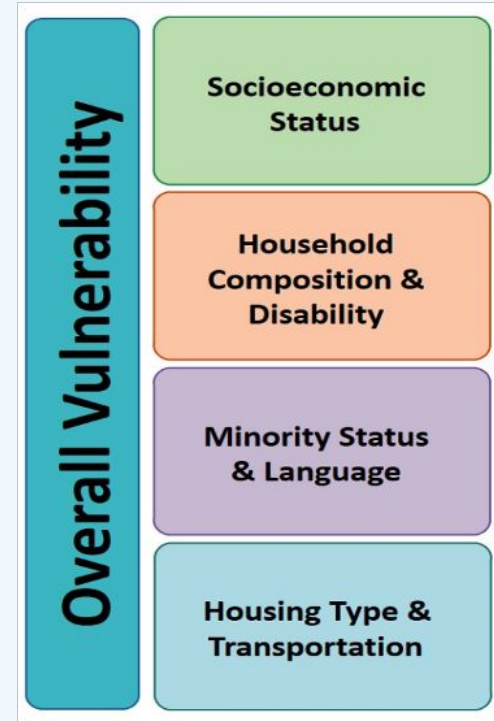
- Framing sustainability issues as pressing public health concerns
- Lack of previous public health indicators with current report cards
- Challenge of identifying an indicator to focus on for the summer



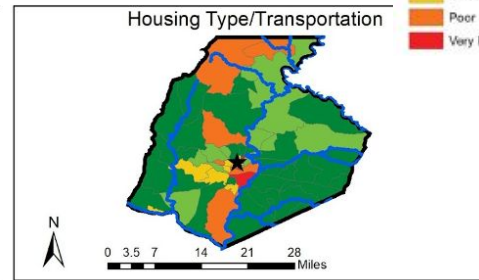
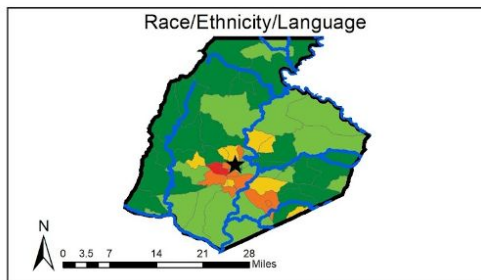
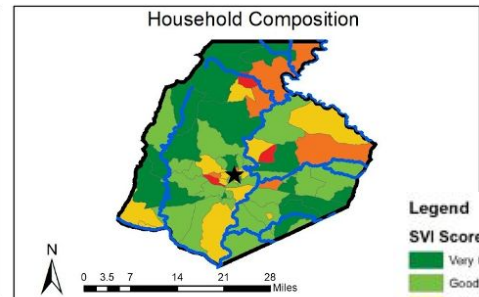
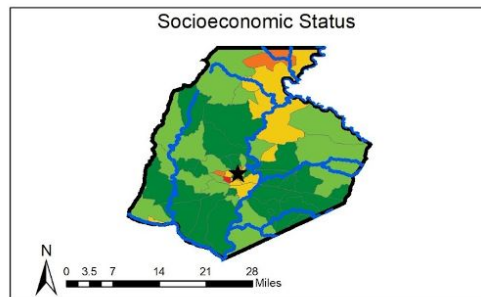
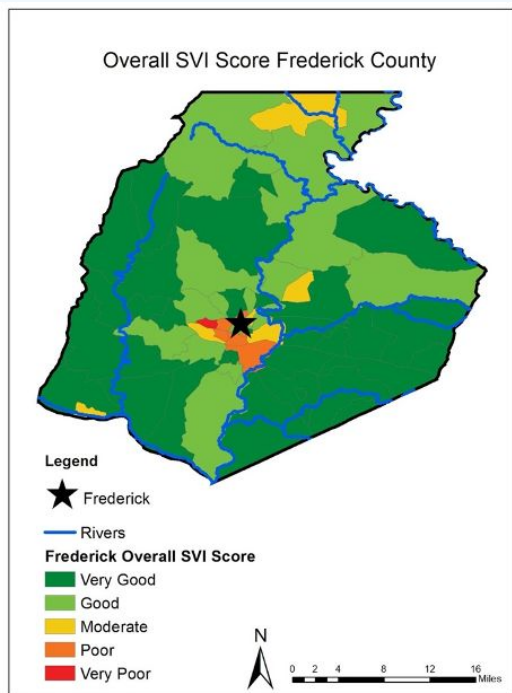
Social Vulnerability Index (SVI)

Overview

- SVI is a tool developed by the CDC to assess how vulnerable a community is to disaster events based on social conditions
- SVI data can be used by public health officials and planners to focus resources on communities that require them the most



Social Vulnerability Index Maps





GSS Scholar: Anna Calderón-Cleland

Coast Card - Annapolis, Maryland
BS/BA, Geosciences / Anthropology
Wellesley College

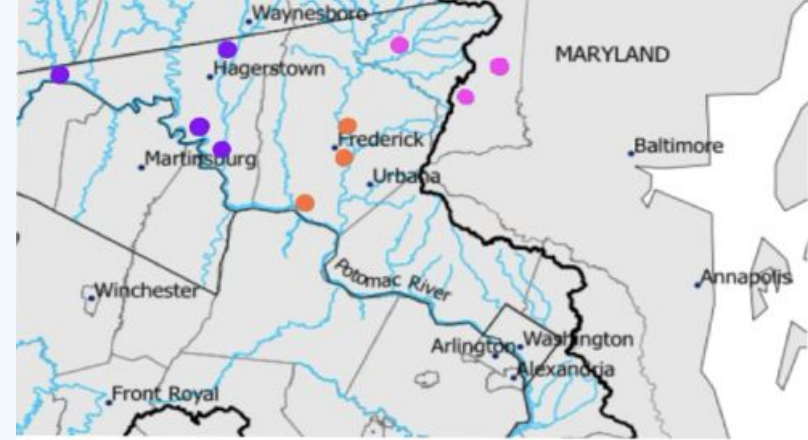
Regional Flood Research

Goal: Analyze flood frequency over time in the three counties around the host site of the July COAST Card Open House

1. *Washington, Frederick, and Carroll County*
2. *Data was gathered from July 2015–July 2022*

Data sources:

1. *Gage Height:* USGS' National Water Information System Web Interface
2. *Flood Stage:* National Weather Service Advanced Hydrologic Prediction Service



■ Washington ■ Carroll ■ Frederick

Figure 2: Modified from "Potomac Watershed" map created by Sidney Anderson.

DEFINITIONS

"GAGE HEIGHT": *The elevation of the river water where the data is being collected*

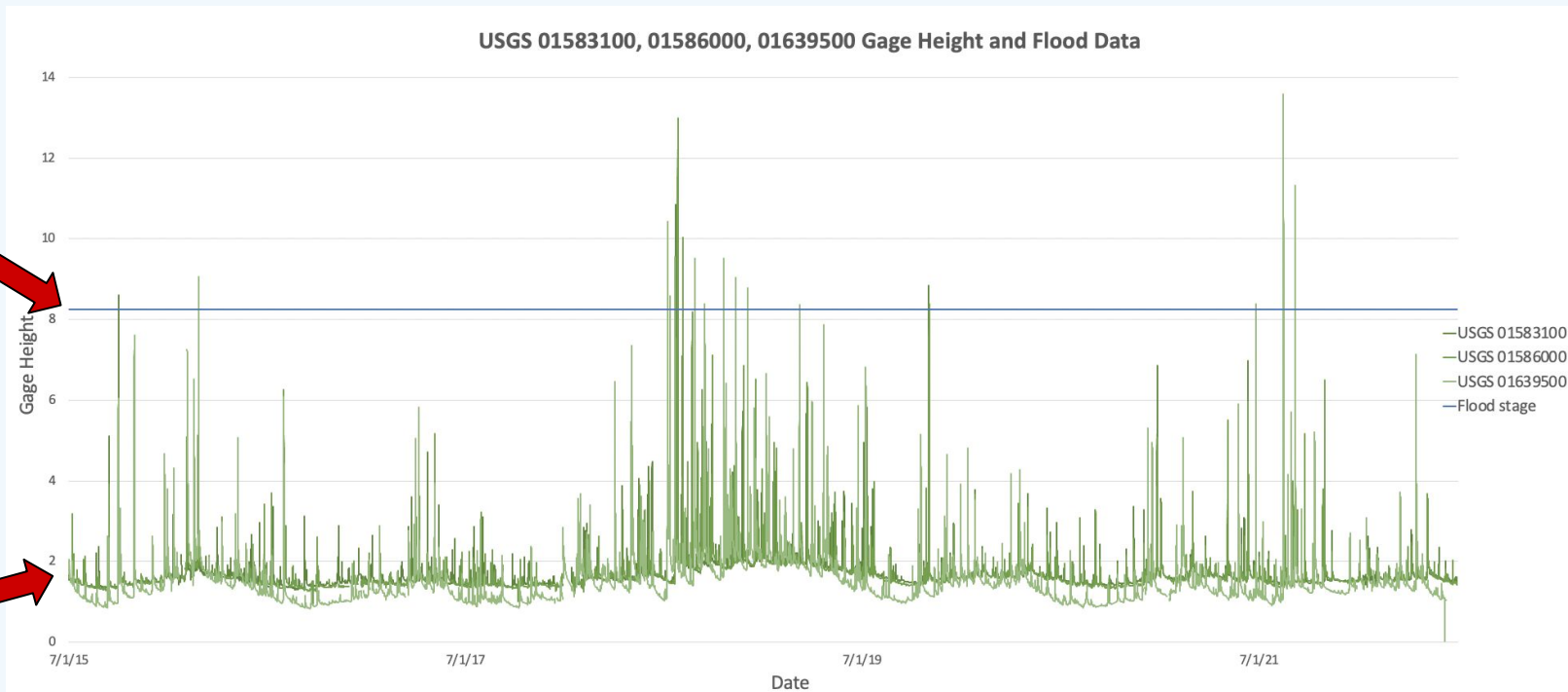
"FLOOD STAGE": *The elevation at which overflow of the natural banks of a stream begins to cause damage in the local area from inundation (flooding)*

Data Analysis Sample: Carroll County

NWS "Flood Stage" for these 3 stations



USGS "Gage Height" Data for these 3 stations



How are Washington, Frederick, And Carroll County Doing?

Moderate or
major flood
events

Susceptible
to flooding or
minor flood
events

When did
flooding
occur?

Washington County

Average Days/Year
Exceeding Flood Stage:

<1

Average Days/Year at Flood
Stage:

<1

Trends: When is Flood
Stage Exceeded?

June

Flood Stage reached?

June

Frederick County

Average Days/Year
Exceeding Flood Stage:

9

Average Days/Year at Flood
Stage:

8

Trends: When is Flood Stage
Exceeded?

May, Sept, and Dec

Flood Stage reached?

May-June & Oct-Dec

Carroll County

Average Days/Year
Exceeding Flood Stage:

3

Average Days/Year at Flood
Stage:

10

Trends: When is Flood Stage
Exceeded?

July, Sept, and Nov

Flood stage reached?

March, July-Sept, Nov-Dec



GSS Scholar: Lawren Caldwell

Coast Card - Annapolis, Maryland

BS, Agricultural and Environmental Systems

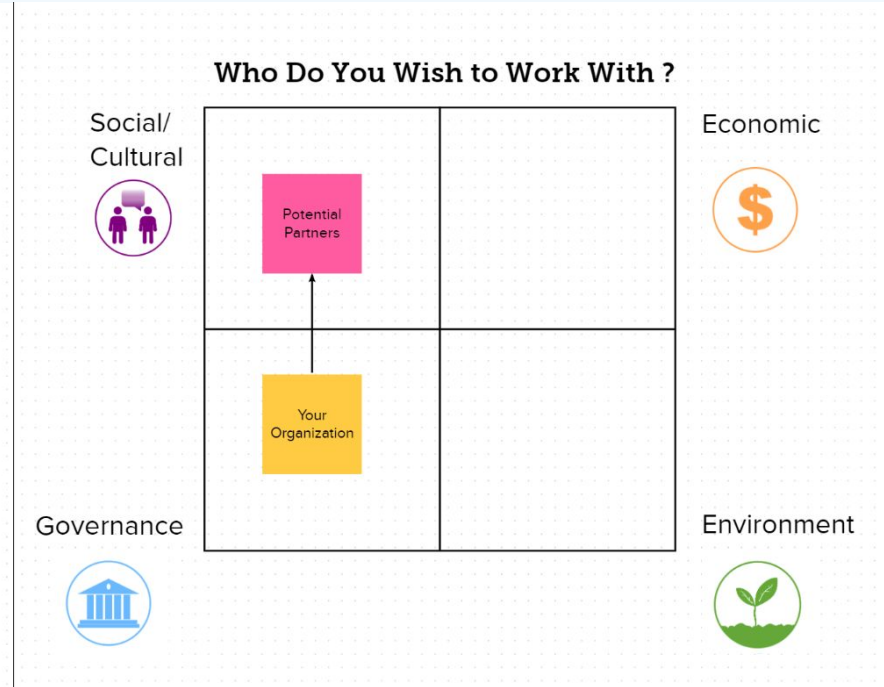
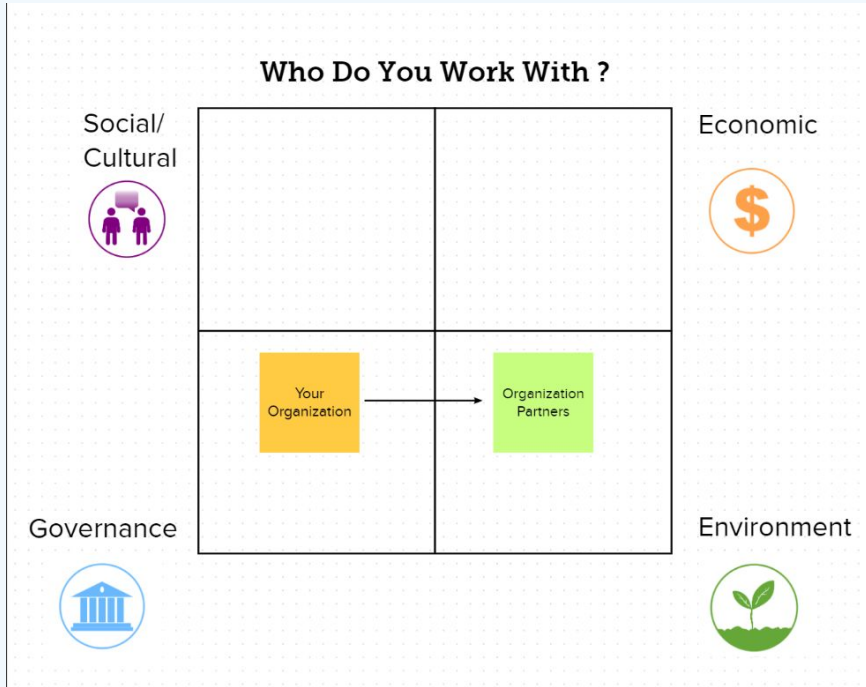
North Carolina A&T State University

Social Network Analysis

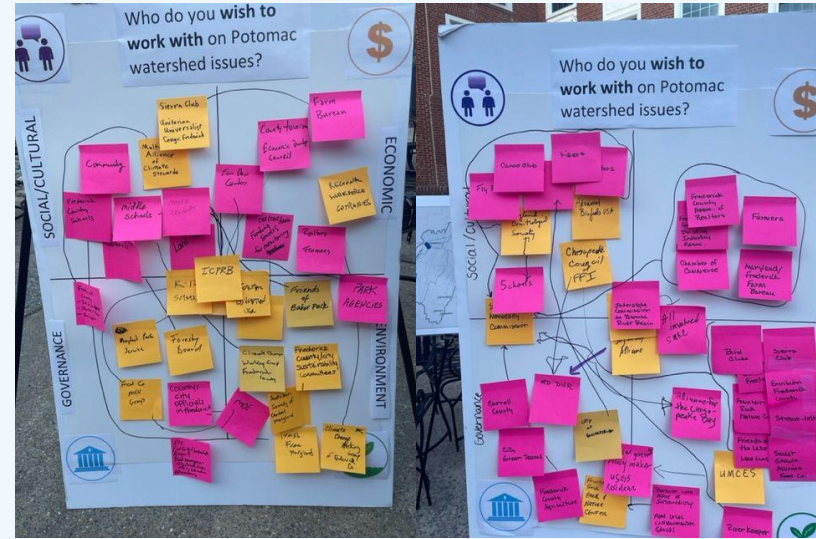
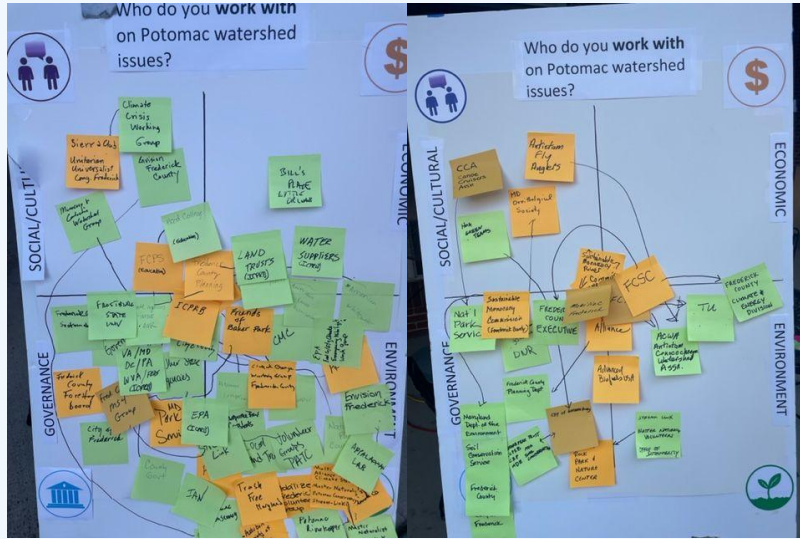
- Why is SNA important to transnational research?
- How can it positively impact communities?
- How do we identify and engage stakeholders?



Open House: Stakeholder Mapping



Stakeholder Maps



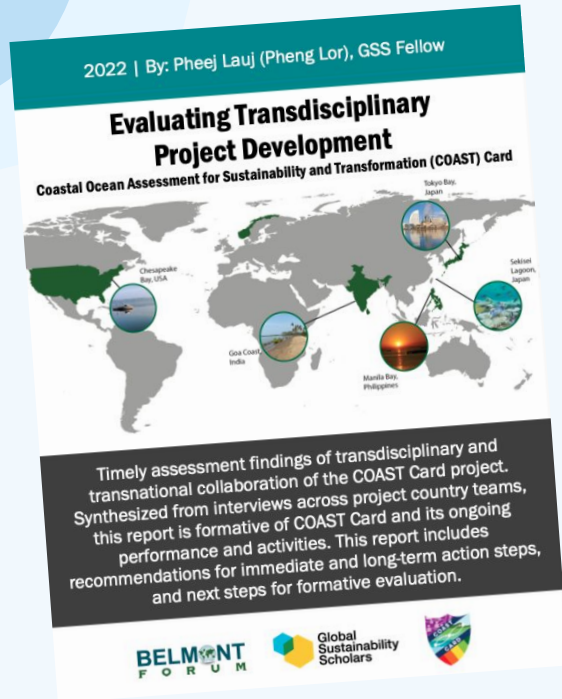
What do you see?



GSS Fellow: Pheej Lor

COAST Card - Annapolis, Maryland
MS, Environmental Humanities
University of Utah

Pheej Lauj (Pheng Lor)



- Home:
Fresno, CA 🌻🌻 (Yokuts land) → East Bay
(Chochenyo, Muwekma, Ohlone land)
- Professional Interests: community,
multicultural, justice-centric engagement
- Passion: education, environment, policy 📖📖
- Environmental Humanities MS & COAST Card
Project 🌊

Evaluating Transdisciplinary Project Development: Objective & Methodology

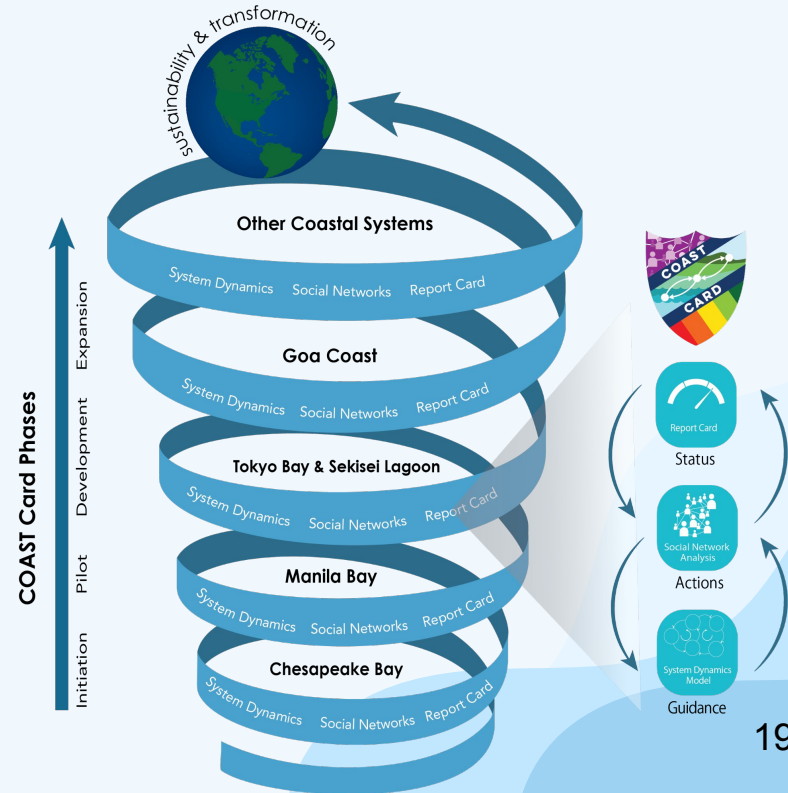
Evaluation Objective (Formative

Approach):

To evaluate [COAST Card](#) international partner network for an effective, efficient, and meaningful transnational cross-collaboration for developing COAST Card project objectives.

Methodology:

- 30-minute interview
- To identify perception on transdisciplinary research, our COAST Card process, engagement, and evaluation.



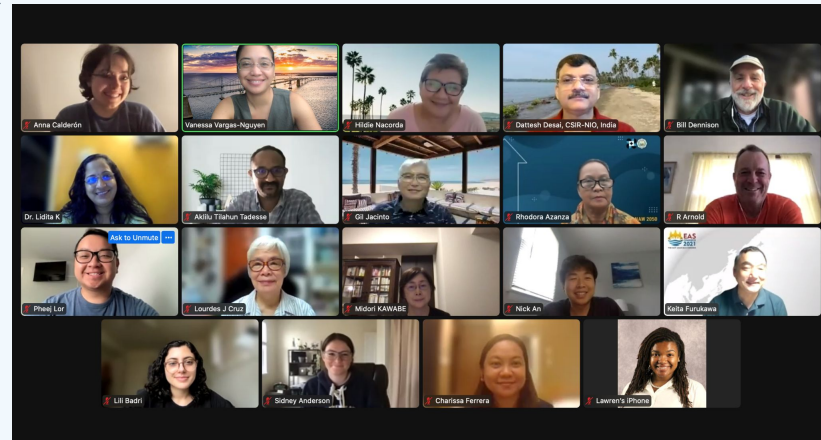
Evaluation Participants

14 Total Evaluation Interview Participants

- United States (3 participants)
 - Japan (4 participants)
 - India (2 participants)
- Philippines (3 participants)
- Norway (2 participants)

Takeaways

1. Transdisciplinary = open-mind, determination, flexibility, and accountability
2. Transnational = cross-societal, cross-cultural
3. There's a long road ahead for the development of global research approaches to tackle climate and sustainability challenges, but we are glad to be a part of it!



Thank You Global Sustainability
Scholars Program, the National
Science Foundation, and the
COAST Card team – especially
Dr. Bill Dennison and Dr.
Vanessa Vargas-Nguyen.

