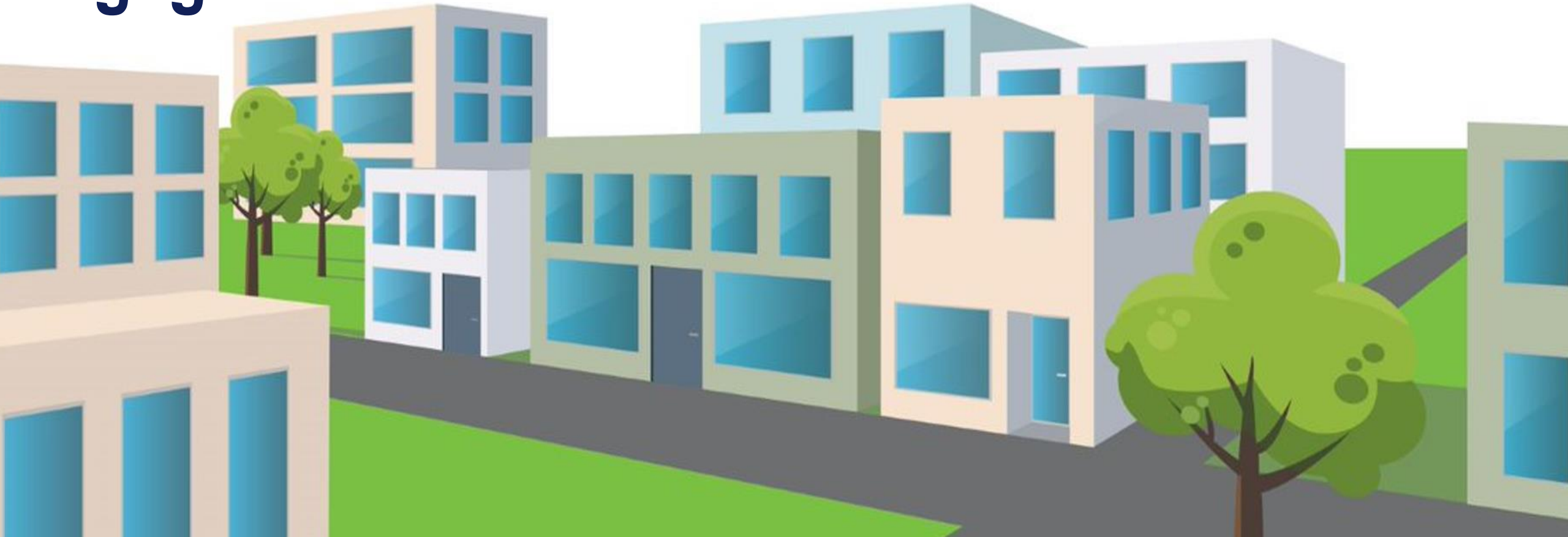


Collaborative Paradigm for Community Engagement



Rensselaer

DOE's Consent-based Siting for
Interim Storage Program:
DE-FOA-0002575



**U.S. DEPARTMENT
OF ENERGY**
NUCLEAR
AWARDEE™

Consortium Overview

Background:

- **Rensselaer Polytechnic Institute (RPI)**, located in the New York Capital District (NYCD), was established for the "application of science to the common purposes of life" and is the oldest technological university in the English-speaking world and the Western Hemisphere.
- The NYCD developed and sustains key infrastructure related to the sustained operation of military and civilian nuclear power plants.

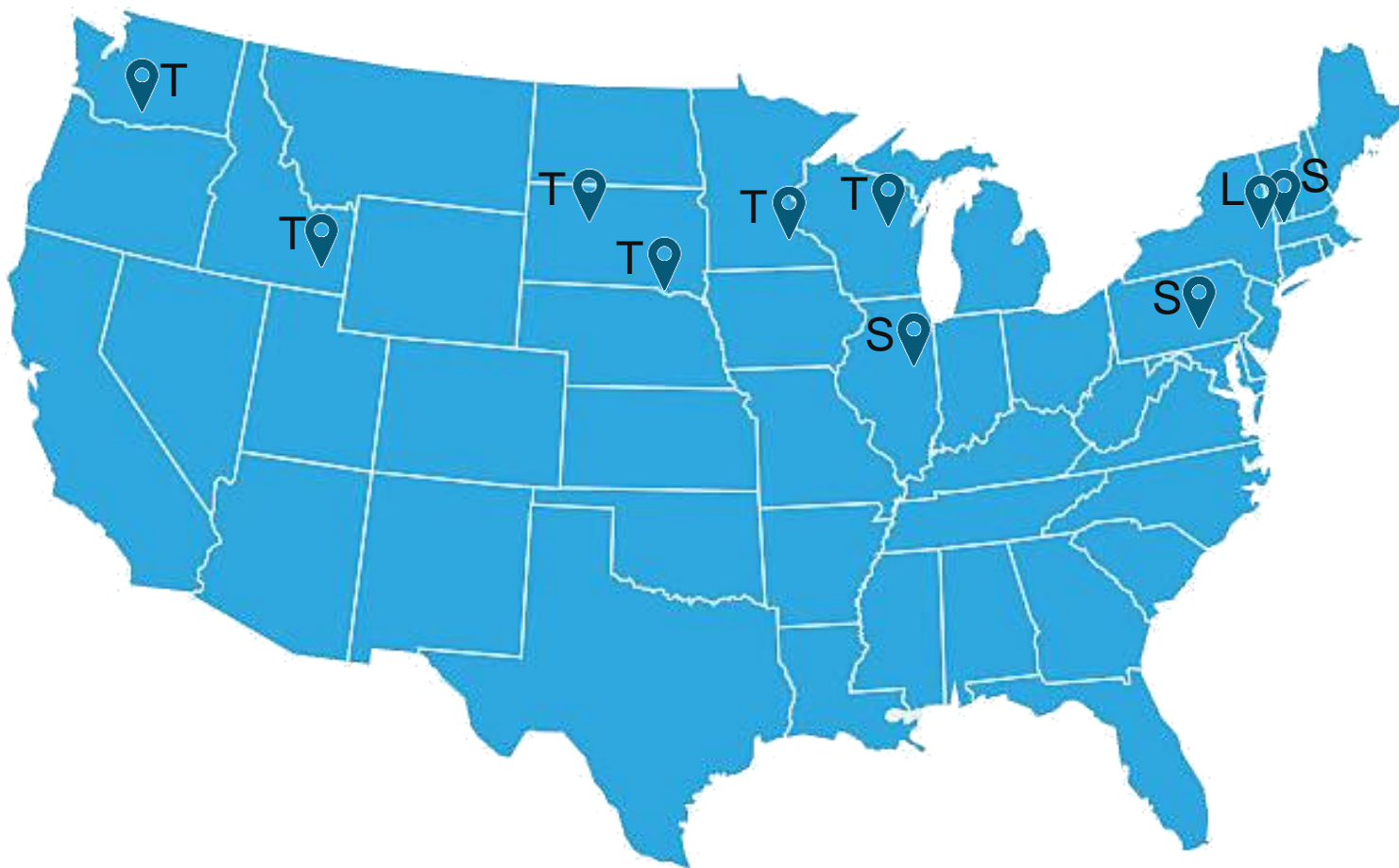
List of Partners:

- **The Schenectady Foundation (TSF)**: A charitable trust established to benefit the health and well-being of people who live and work in Schenectady, NY. The strategic focus of the Foundation has shifted over time as the needs of Schenectady community members have shifted.

Areas of Expertise:

- **Brandon Costelloe-Kuehn (RPI)**: Applied Ethnography, Multicultural Collaborations, Environmental Soc. Sci.
- **Li “Emily” Liu (RPI)**: Nuclear Engineering Education, Academic Collaboration, Program Management
- **James “Jim” Olson (RPI)**: Engineering Psychology, Industry & Military Applications of Nuclear Power
- **William “Al” Wallace (RPI)**: Community Infrastructure Modeling and Simulation, Emergency Response
- **Robert Carreau (TSF)**: Community Engagement, Dialogue, Philanthropy, Political Communications

Geographical Area of Engagement



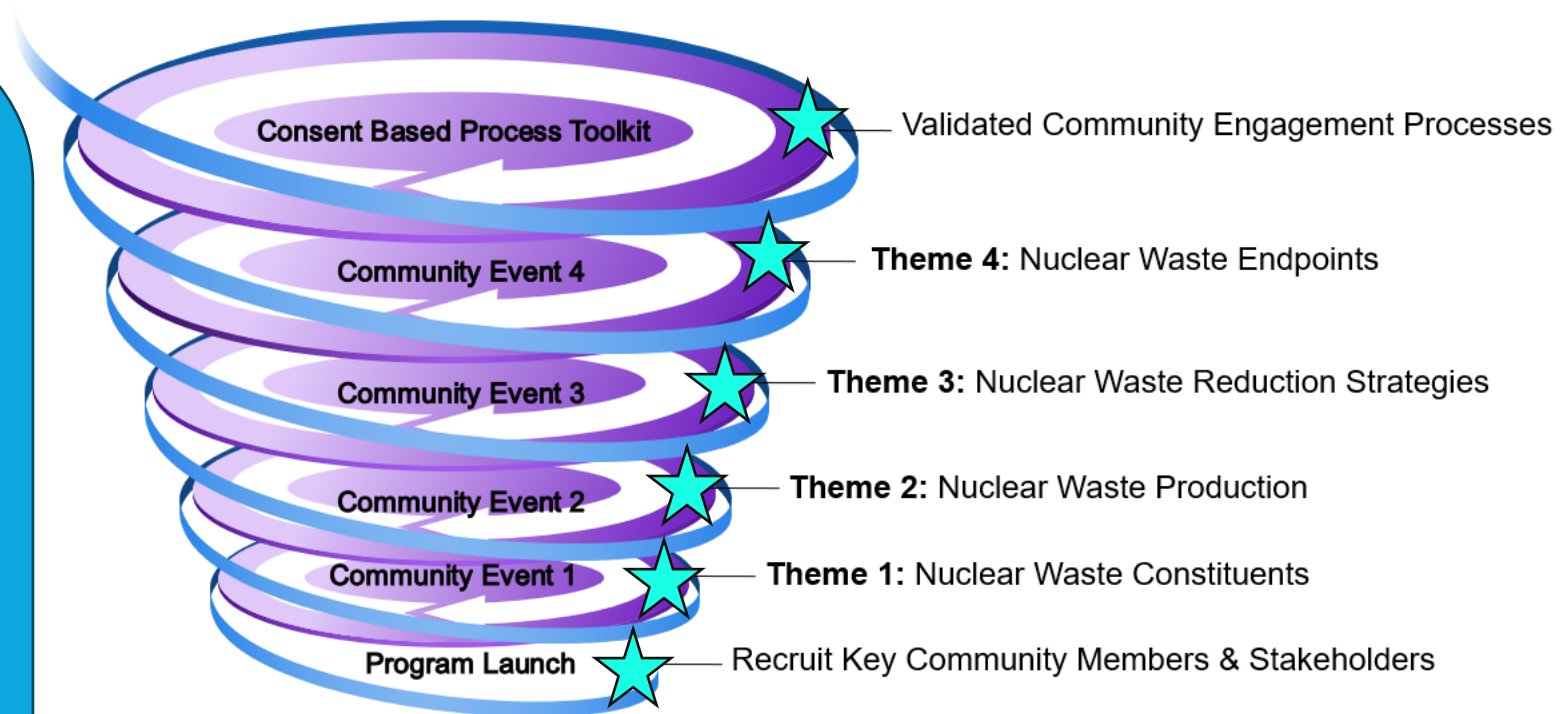
- **Local (L): New York Capital District**
Rensselaer Polytechnic Institute
The Schenectady Foundation
NYCD Residents & Organizations
New York State & NYCD Governments
- **State (S): Potential Collaborators**
Vermont: ~700 Tons; No Operating Plants
Illinois: Most Used Nuclear Fuel (UNF)
Pennsylvania: Second Most UNF
- **Tribal Nations (T): Potential Stakeholders**
Stockbridge-Munsee*
Yankton Sioux**
Cheyenne River Sioux**
Shoshone-Bannock**
Prairie Island Indian Community**
Yakama Nation**

*Ancestral Homeland within NYCD

**Previously commented on Consent-Based Siting process

Overview of Process

Iterative Engagement Process



★ Start planning for next Community Event

- ✓ Structure Community Event to achieve project objectives
- ✓ Incorporate Lessons Learned from previous (where applicable)
- ✓ Recruit & Engage relevant participants

Overview of Methods

- **Community Thought Experiment: “What If…”**
 - Shippingport Power Station was Liquid Sodium?
 - Rickover did *not* switch SSN 575 to Pressurized Water?
 - NYCD continued developing Liquid Sodium reactors?
 - The U.S. had reactors that can utilize light water reactor used fuel?
- **What if NYCD build a pilot energy research center?**
 - Pick up where NYCD left off in the 1950’s?
 - Revenue share for STEM education & career support?
 - Enable subsequent facilities across U.S.?
- **Methods of Community Engagement**
 - Invite communities disproportionately burdened by legacy nuclear power*
 - Interview, Elicit and Map concerns
 - Use novel STEM methods* to educate and inform about nuclear waste topics
 - Invite nuclear industry stakeholders* to engage with and listen to these communities
 - Familiarize these communities with local and national nuclear infrastructure*
 - Model & Simulate local nuclear waste emergency scenarios
 - Iteratively develop community engagement governing documents*
 - Document Best Practices & Lessons Learned

**Consortia Collaboration Opportunity*



Outcomes Expected

- **Task 1: Community-Centered Design of Consent-Based Siting Process Engagement (Social Science)**
 - Iteratively develop a learn-engage-feedback process for planning & executing community events
 - Develop and document process for recruiting diverse participants from relevant communities
 - Elicit and map feedback from community event participants for continuous improvement
- **Task 2: Community Visualizations of Simulated Nuclear Waste Management Scenarios (Infrastructure Simulation)**
 - Incorporate nuclear waste management scenarios into CLARC* simulations to produce CLANC** simulations
 - Use CRISIS*** to model nuclear waste incident (transportation accident, extreme weather, etc.) emergency response
 - Integrate CLARC and CRISIS simulations into immersive visualization environment(s)
- **Task 3: Community Engagement Event Planning & Execution (Academic Rigor)**
 - Elicit and map community-centered input regarding the potential modification of existing local nuclear infrastructure
 - Develop and document novel methods to assess hosting an interim storage facility, including Tribal Nation engagement
 - Document and describe how resources may be distributed to support community member participation in events
- **Task 4: Community-Centered Nuclear Waste Science Fundamentals Learning Modules (Engineering Education)**
 - Develop novel learning modules to teach subject matter experts about relevant community concerns
 - Develop novel STEM learning modules to teach community members relevant fundamentals to assess technical discussions
 - Develop and provide “Learning Kits” to help community members and subject matter experts to engage in collaborative dialogue

*CLARC: Customizable Artificial Coastal Community

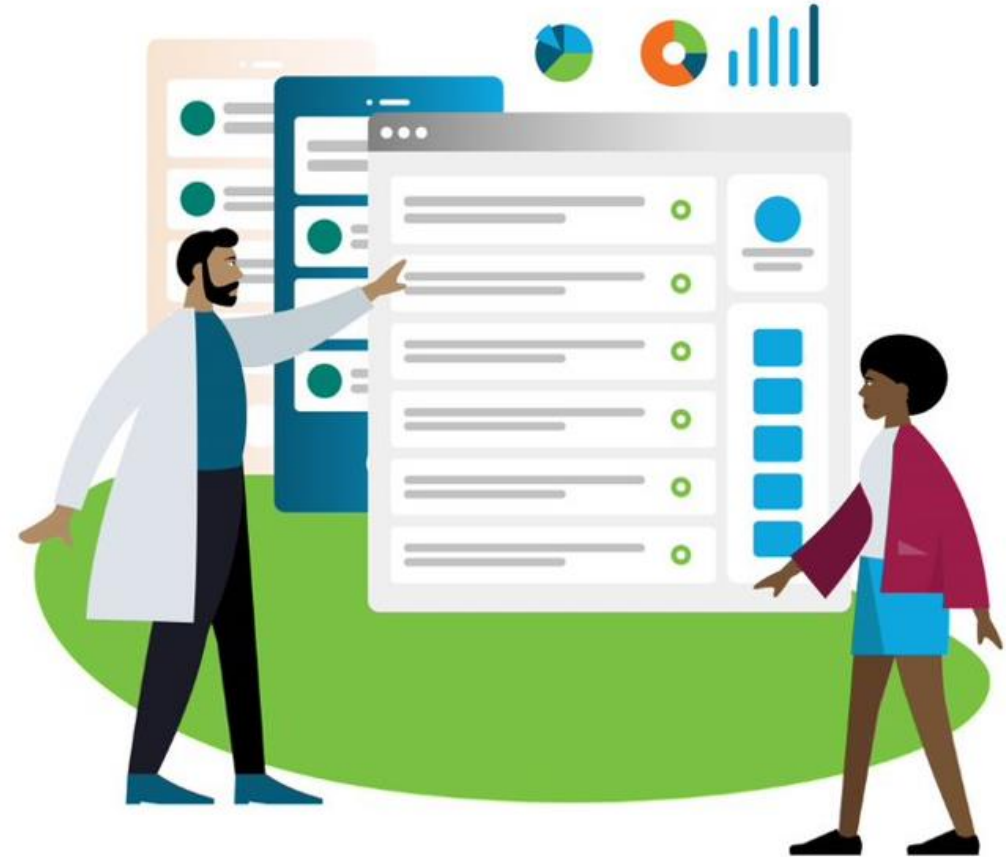
**CLANC: Customizable Artificial Nuclear Community

***CRISIS: Civil Restoration with Interdependent Social Infrastructure Systems

Thank You!

For questions or comments related to this consortium, please contact:

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