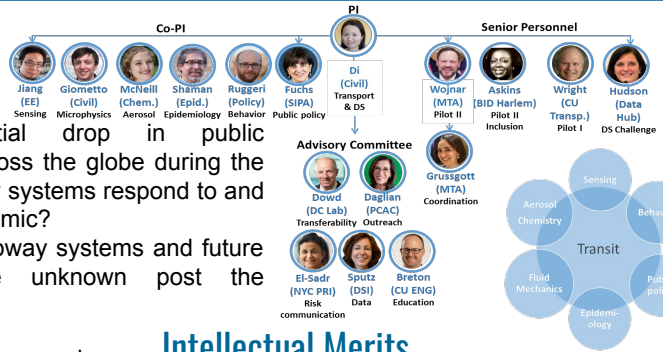


Preparing for Future Pandemics: Subway Crowd Management to Minimize Airborne Transmission of Respiratory Viruses (Way-CARE)

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Award Type: IRG[2218809]



Project Overview



- Challenges:**
- Following the substantial drop in public transportation ridership across the globe during the pandemic, how can subway systems respond to and recover from a future pandemic?
 - True health risks inside subway systems and future commuting patterns are unknown post the pandemic.

Goal: Strengthening the preparedness and resilience of transit communities (i.e., agencies, workers, and riders) facing public health disasters through the development of a sociotechnical system for crowd management

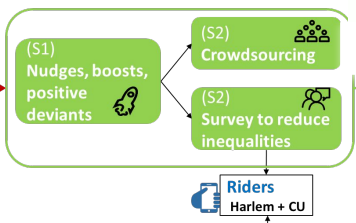
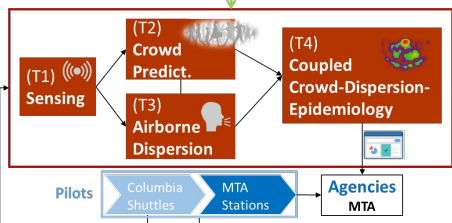
Intellectual Merits

Technological Propeller

(T1) co-design an integrated crowd-aerosol sensor suite;
 (T2) develop a crowd dynamics model and simulator;
 (T3) model high-fidelity droplet/aerosol dispersion;
 (T4) propose a microphysics-aware epidemiological model.

Social Catalyst

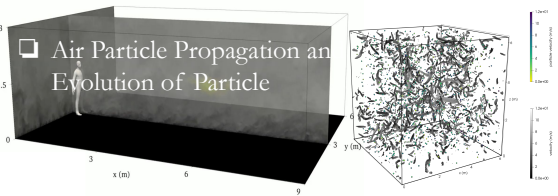
(S1) behavioral science informed interventions;
 (S2) community-centered citizen science.



Major Outcomes

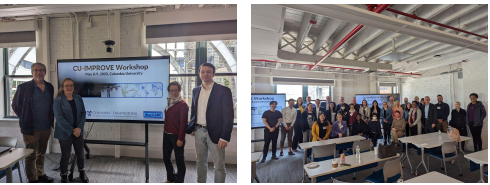


- Sensors Installation on Campus Shuttles
- PI-NeuGODE for Spatiotemporal Trajectory Prediction



Broader Impact

- CU-IMPROVE Workshop



Solution: A sociotechnical system, "Way-CARE"

- Enables transit riders to make informed decisions and adapt travel behavior accordingly.
- Provides transit agencies engaged in planning and policymaking with recommendations for mitigating virus transmission risks to riders and workers.

Future Goals

