



THE NATIONAL SCIENCE FOUNDATION'S

SMART & CONNECTED COMMUNITIES VIRTUAL ORGANIZATION

S&CC: Creating scientific and engineering foundations
that will enable smart and connected communities.



Catalyzing smart and connected communities across America



Share



Watch on YouTube

<https://sccvo.org>

Elevator Pitch

The virtual organization (VO) is here to amplify the voice of your project and to support organic discovery, innovation, & collaboration for a diverse audience of stakeholders

The VO today contains info on 258 projects, 814 people, and all of the materials produced for S&CC PI meeting.



Payman Arabshahi (PI)
Associate Professor,
Associate Chair for
Education, ECE,
University of Washington



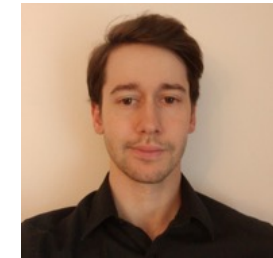
Dan Work (co-PI)
Professor, CEE & ISIS
Director of Graduate
Studies, CEE
Vanderbilt University



Katie Dey
Research Project Manager
ISIS
Vanderbilt University



Stephen Rees
System Architect
Lead Developer S&CC VO
ISIS
Vanderbilt University



Matthew Warner
Junior Developer
S&CC VO
ISIS
Vanderbilt University

Additional support from J. Sztipanovits (VU), J. Sprinkle (VU), F. King (VU), A. Karnes (VU) and others.

Vision

Convergence research like S&CC is enabled by a large and diverse group. We need to go beyond skimming NSF award search & e.g., Google Scholar to “know and grow”

Hence the VO seeks to

- Facilitate and foster interaction and exchanges among S&CC PIs and their teams, including community partners.
- Enable sharing of documents and knowledge generated by S&CC projects with the broader scientific and non-academic communities (e.g., local community stakeholders).
- Facilitate and foster collaboration and information exchange between S&CC researchers, community stakeholders, and others.
- Help projects sustain, scale, and transfer

Where We Are Today

We took interviews with PIs, Program Managers, and community members, prototyped a few ideas into a website, wrangled a lot of data, and are integrating the content directly from the PI meeting to keep the conversation going at <https://sccvo.org>

Some Takeaways from Interviews

- PI meeting creates a lot of momentum, VO should help carry on the conversation.
- Connectivity and searchability (Slack/teams, ease-of-networking, Recommendation-widget, etc.).
- Motivating engagement through recognition/contests.
- Short videos/one-page profiles for ease of use.
- Outreach/Community Engagement.

Core of the Virtual Organization Today



PROJECTS

Browse projects funded by this program

[VIEW ALL](#)



COMMUNITY MEMBERS

See who is involved

[VIEW ALL](#)



ANNUAL MEETING

Participate in the annual meeting

[VIEW ALL](#)

See who is involved

Smart & Connected Communities Virtual Organization

COMMUNITY MEMBERS

Community Members

S&CC community members engage in research that integrates intelligent technologies with the natural and built environments, including infrastructure, to improve the social, economic, and environmental well-being of these communities.

Name Filter by Role Filter by Technical Area APPLY

Sarah Fox	Kevin Foy	Nancy Fresco	Vanessa Frias-Martinez	Jon Froehlich	Shengli Fu
Shira Gabriel	Pierre-Emmanuel Gaillardon	Andrea Galinski	Robin Gandhi	Robert Gao	Jerry Gao
Santiago Garces	Monica Garfield	Joshua Garoon	Rachel Garthe	Mila Gasco Hernandez	Yue Ge



Smart & Connected Communities Virtual Organization

VANESSA FRIAS-MARTINEZ

Vanessa Frias-Martinez

University of Maryland, College Park
Vanessa Frias-Martinez is an associate professor in the School and an affiliate associate professor in the Department of Computer Science at the University of Maryland, College Park. She also leads the Urban Computing Lab at UMD. Frias-Martinez received her doctorate in computer science from Columbia University in 2008.

WEBSITE:
<https://www.urbancomputinglab.org/>

Frias-Martinez's research areas are data-driven behavioral modeling and spatio-temporal data mining. Her research focuses on the use of large-scale ubiquitous data to model the interplay between human mobility patterns and the built environment, and on more data-centric aspects such as fairness analysis and mitigation for large-scale location datasets. Specifically, Frias-Martinez develops methodologies to fairly model and predict human behaviors in different contexts as well as tools to aid decision makers in areas such as transportation, natural disasters, poverty or urban planning.

Before UMD, she spent five years at Telefonica Research developing algorithms to analyze mobile digital traces. She is also a recipient of a National Science Foundation (NSF) CAREER Award and the La Caixa Fellowship.

PROJECTS
[Inclusive Public Transit Toolkit to Assess Quality of Service Across Socioeconomic Status in Baltimore City](#)

Go Back

You can help us today by filling in more info so others can find you!

People pages link directly to projects, with documents

Smart & Connected Communities Virtual Organization



PROJECTS / INCLUSIVE PUBLIC TRANSIT TOOLKIT TO ASSESS QUALITY OF SERVICE ACROSS SOC...

Inclusive Public Transit Toolkit to Assess Quality of Service Across Socioeconomic Status in Baltimore City



Lead PI:
Vanessa Frias-Martinez

Co-PI:



Seema Iyer



Celeste Chavis



Jessica Vitak

ABSTRACT

Most American cities with substantial public transit ridership share a stark statistic: commuters on public transportation have disproportionately lower incomes than commuters who use automobiles. Previous research has also shown that higher income residents who use public transit typically rely on single-boarding trips, while lower-income individuals endure complex, lengthy trips, requiring several modes or transfers. Traditionally, transit agencies use quality of service (QoS) surveys to gauge passenger perceptions of performance. However, these surveys suffer important limitations that more often mask challenges faced by low-income residents with complex mobility experiences. In an attempt to address these gaps, several smartphone applications that allow residents to collect GPS-tagged, QoS data have been developed. While promising, these apps not only fail to collect critical information to characterize complex trips, but also lack privacy, transparency and decision support systems. This project will create novel methods, answer open empirical questions and provide research-based guidelines for the design, development, deployment and evaluation of a privacy-respectful toolkit to identify and characterize the multi-factorial challenges typical of complex trips often times endured by low-income

PROJECT MATERIAL

Presentations

[Inclusive Public Transit Toolkit to Assess Quality of Service Across Socioeconomic Status in Baltimore City](#)

Posters

[Inclusive Public Transit Toolkit to Assess Quality of Service Across Socioeconomic Status in Baltimore City](#)

[Inclusive Public Transit Toolkit to Assess Quality of Service Across Socioeconomic Status in Baltimore City](#)

Feedback

See current and recently completed projects

- Searchable application area, award type, (eventually location and more)
- Sortable. See what's new, what projects are in a similar application area
- What Integrative Research Grants were recently funded?
- Etc...

The screenshot displays the NSF S&CC Projects website. At the top, there is a navigation bar with the text "Smart & Connected Communities Virtual Organization" and a user profile icon. Below this is a breadcrumb trail "HOME / PROJECTS". The main header features the NSF logo and the text "NSF S&CC Projects" with the tagline "NSF funds a variety of projects in and related to smart and connected communities." Below the header is a search and filter interface. It includes a search bar, a "Performance Period" dropdown, and four filter buttons: "Filter by Application Area", "Filter by Award Type", "Filter by Location", and "Filter by Location Type". A "SEARCH" button is also present. Below the filters, a selected filter "TRANSPORTATION AND PERSONAL MOBILITY" is shown. A "CLEAR FILTERS" button is located above a grid of six project cards. Each card features a blue-tinted image of a city skyline at night and contains the following information: project title, performance period, lead PI name, award type, and affiliation. The projects listed are: 1. "Revamping Regional Transportation Modeling and Planning to..." (Lead PI: Michael Hyland, Award Type: Integrative Research Grant Track 1, Affiliation: University of California-Irvine); 2. "Empathy and AI: Towards Equitable Microtransit" (Lead PI: Eleni Bardaka, Award Type: Planning Grant, Affiliation: North Carolina State University); 3. "Equitable new mobility: Community-driven mechanisms for..." (Lead PI: Sarah Fox, Award Type: Planning Grant, Affiliation: Carnegie Mellon University); 4. "Equitable and Ubiquitous Converged Data & Transportation..." (Lead PI: Micah Beck, Award Type: Planning Grant, Affiliation: University of Tennessee Knoxville); 5. "Improving the Safety and Appeal of Public Transit in COVID-19..." (Lead PI: Roberto Manduchi, Award Type: Planning Grant, Affiliation: University of California-Santa Cruz); 6. "Crowd+AI Tools to Map, Analyze, and Visualize Sidewalk..." (Lead PI: Jon Froehlich, Award Type: Integrative Research Grant Track 1, Affiliation: University of Washington). A "Feedback" button is visible in the bottom right corner.

What is next?

- We need to hear from the community about where we should be heading next to make organic discovery and innovation and collaboration easier.
- Come talk to us and participate in the mini workshop!