I4all (Interests for All): A Smart Socio-Technical Infrastructure to Identify, Cultivate, and Sustain Youth STEAM Interests in a Diverse Midsized American City

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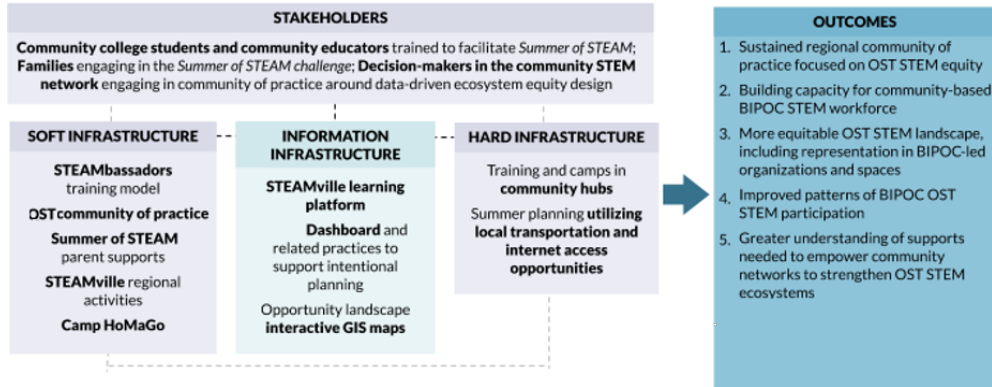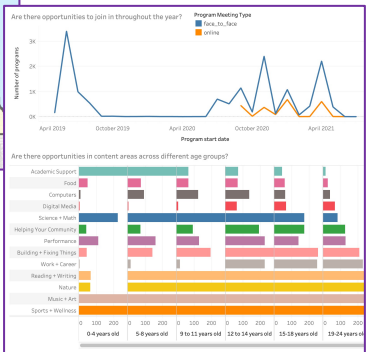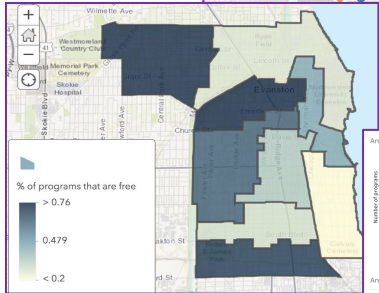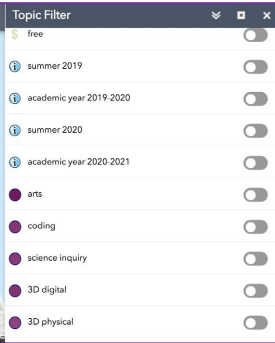| Principal Research Investigators	Community Partners
Nichole Pinkard, PI, Northwestern University Reed Stevens, co-PI, Northwestern University Caitlin Martin, Research Consultant Kay Remy, Post Doctoral Student, Northwestern University	Kirby Callam, Director, EvanSTEM, Evanston District 65 Nicole Iliev, COO, McGaw YMCA Shawn Jackson, President, Truman College, City Colleges of Chicago

Project Overview

Visual Schematic

STAKEHOLDERS

Community college students and community educators trained to facilitate *Summer of STEAM*; **Families** engaging in the *Summer of STEAM challenge*; **Decision-makers in the community STEM network** engaging in community of practice around data-driven ecosystem equity design

SOFT INFRASTRUCTURE

STEAMbassadors training model

OST community of practice

Summer of STEAM parent supports

STEAMville regional activities

Camp HoMaGo

INFORMATION INFRASTRUCTURE

STEAMville learning platform

Dashboard and related practices to support intentional planning

Opportunity landscape **interactive GIS maps**

HARD INFRASTRUCTURE

Training and camps in **community hubs**

Summer planning **utilizing local transportation and internet access opportunities**

OUTCOMES

1. Sustained regional community of practice focused on OST STEM equity
2. Building capacity for community-based BIPOC STEM workforce
3. More equitable OST STEM landscape, including representation in BIPOC-led organizations and spaces
4. Improved patterns of BIPOC OST STEM participation
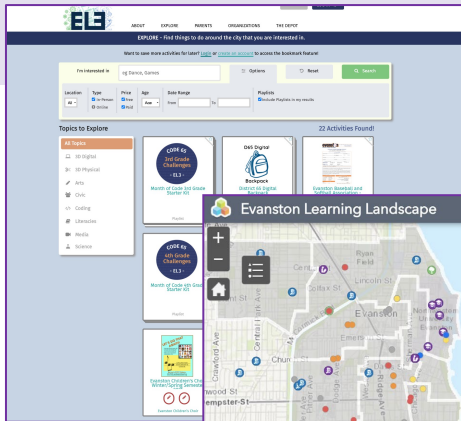5. Greater understanding of supports needed to empower community networks to strengthen OST STEM ecosystems

Project Vision

- Establish a socio-technical infrastructure that supports frictionless access to and documentation of a community's informal learning and leisure activities.

- Use developing landscape of informal and leisure learning opportunities and shared registration to understand how and where youth engage across the community.

Northwestern

Project Overview

Use-Inspired Research

- EvanSTEM, our lead community partner, stewards the design and curation of EL3 and leads the monthly OST ecosystem meetings.

Fundamental Research Contributions

Social Science: Opportunity Landscape Framework Development of a language, taxonomy, data structure, and baseline maps to articulate learning landscapes.

Technological: The L3 Learning Platform and Community-Facing Portal enables a network of civic and community-based organizations to collaboratively communicate learning and leisure programming via a common searchable portal whose GIS footprint powers the Opportunity Landscape Framework.

Platform is deployed in Chicago, Dallas, Evanston, San Antonio, and Tulsa. Evanston and Chicago are sites of research.

Project Update

1. School District replaced their internal **Digital Backpack** with a customized instance of the L3 Platform

2. Launched **Opportunity Landscape Dashboards** powered by the L3 data warehouse .

3. Collaborated with community partners to use the Dashboards to address the shortage of Black and Hispanic STEAM workforce through the establishment of the STEAMbassador Workforce Initiative.

Evaluating Project Impact on Communities

It Takes a Village

STEAMbassadors is a workforce initiative supported by a collaborative partnership between Northwestern University and Chicago Community Colleges.

Founding Partners

CITY COLLEGES of CHICAGO · Northwestern University · digital youth network

Launch Partners

CITY COLLEGES of CHICAGO Harry S Truman · project exploration · Northwestern OFFICE OF COMMUNITY EDUCATION PARTNERSHIPS School of Education and Social Policy

Launch Villages

digital youth divas · project exploration changing the face of science

Camp Partners

evanston public library · 826CHI · FUSE · AeroStar AVION INSTITUTE · MetaMedia · STEMVILLE · CHICAGO ACADEMY of SCIENCES · PEGGY NOTEBAERT NATURE MUSEUM · Project SYNCERE

Funders

CITY COLLEGES of CHICAGO · NU · Northwestern University · CME GROUP FOUNDATION

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STEAMbassadors
From Community for Community

The STEAMbassadors mentorship workforce program engages cohorts of college going 18-24 year-olds living in the chicagoland area in discovering, strengthen, and sharing their developing STEAM passions and interests with youth from their communities towards the goal of integrating STEAM into everyday youth creative activity.

Inaugural cohort of **46 mentors** completed training and led **18** 6-week long camps in **20** Park District sites serving over **530** youth plus over **200** virtual camp youth.

Northwestern

Anticipated outcomes & success measures for next year

- Collaborate with Karen Smilowitz (northwestern) to engage each of city's nine wards in a conversation about the city and their ward's hyperlocal opportunity landscape. Analyze and report the findings.

- Launch a national Opportunity Landscape website to support a national conversation on equitizing hyperlocal access to civic-funded learning resources

- Embedded STEAMbassadors across Evanston's core civic-funded and CBOs organizations for the academic year. Complete case studies with youth in this cohort.

Project Evolution

Few Hooks for Collaboration: The lack of shared boundaries, timelines, and data polices creates create real and perceived barriers to collaborative planning across civic-learning institutions.

Work Must Address Systemic Racism: We cannot build an equitable learning ecosystem on top of a civic-learning infrastructure designed when black lives mattered least.

Community

Wards

School networks

Policing districts

Race & Ethnicity in Evanston, IL

#Schools, Student Density Aggregated Census Tract