

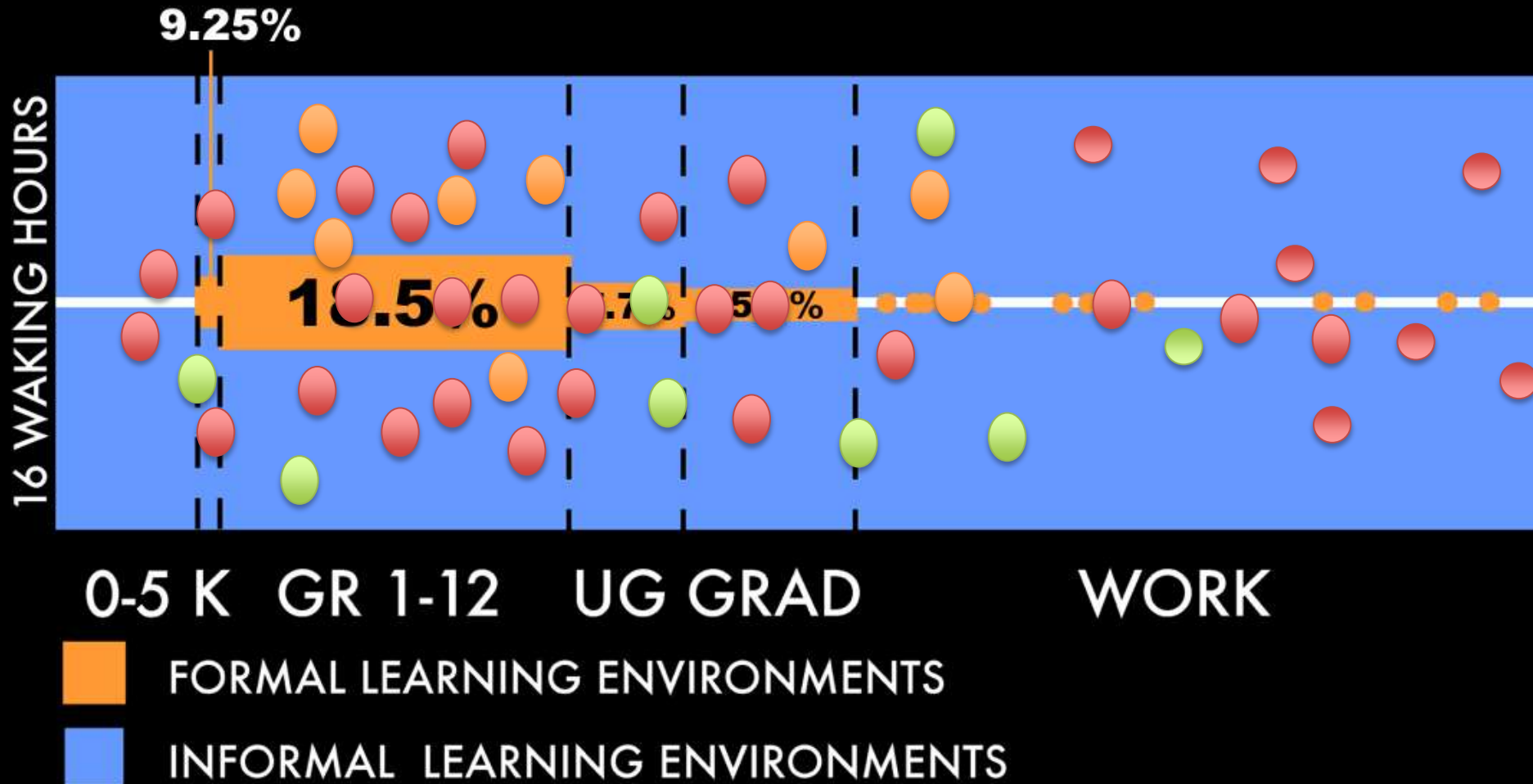
Designing for Activation: Building STEM Learning Pathways for Pittsburgh's Youth

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University of Pittsburgh

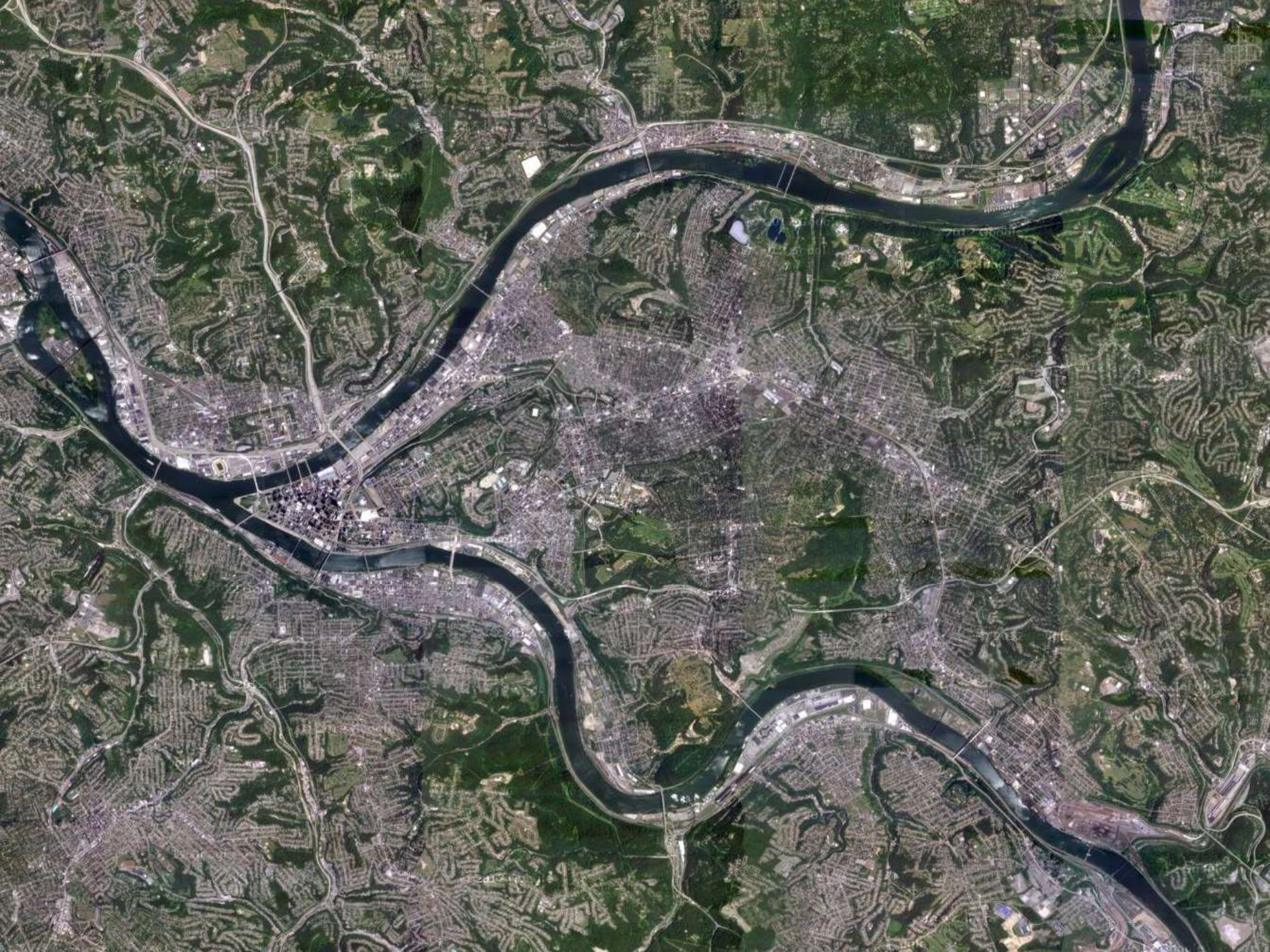
Funded by the Grable Foundation

LIFELONG AND LIFEWIDE LEARNING



Dear Committee...

- Revisit and renovate how we **understand** ecosystems. Many potentially conflicting uses in the last two days. Yes, it's all connected, all the time. What else?
- How do we **measure** the health of ecosystems?
- How do we **intervene** at the ecosystem level?
- How do we **invest** in healthy ecosystems? Levers in education are often top-down and we like them scalable. It's not just money. Do ecosystems afford and constraint bigger plays in out of school STEM learning?



LEARNING
ACTIVATION LAB

<http://activationlab.org>

UNIVERSITY OF PITTSBURGH

LRDC

Learning Research &
Development Center



**THE LAWRENCE
HALL OF SCIENCE**

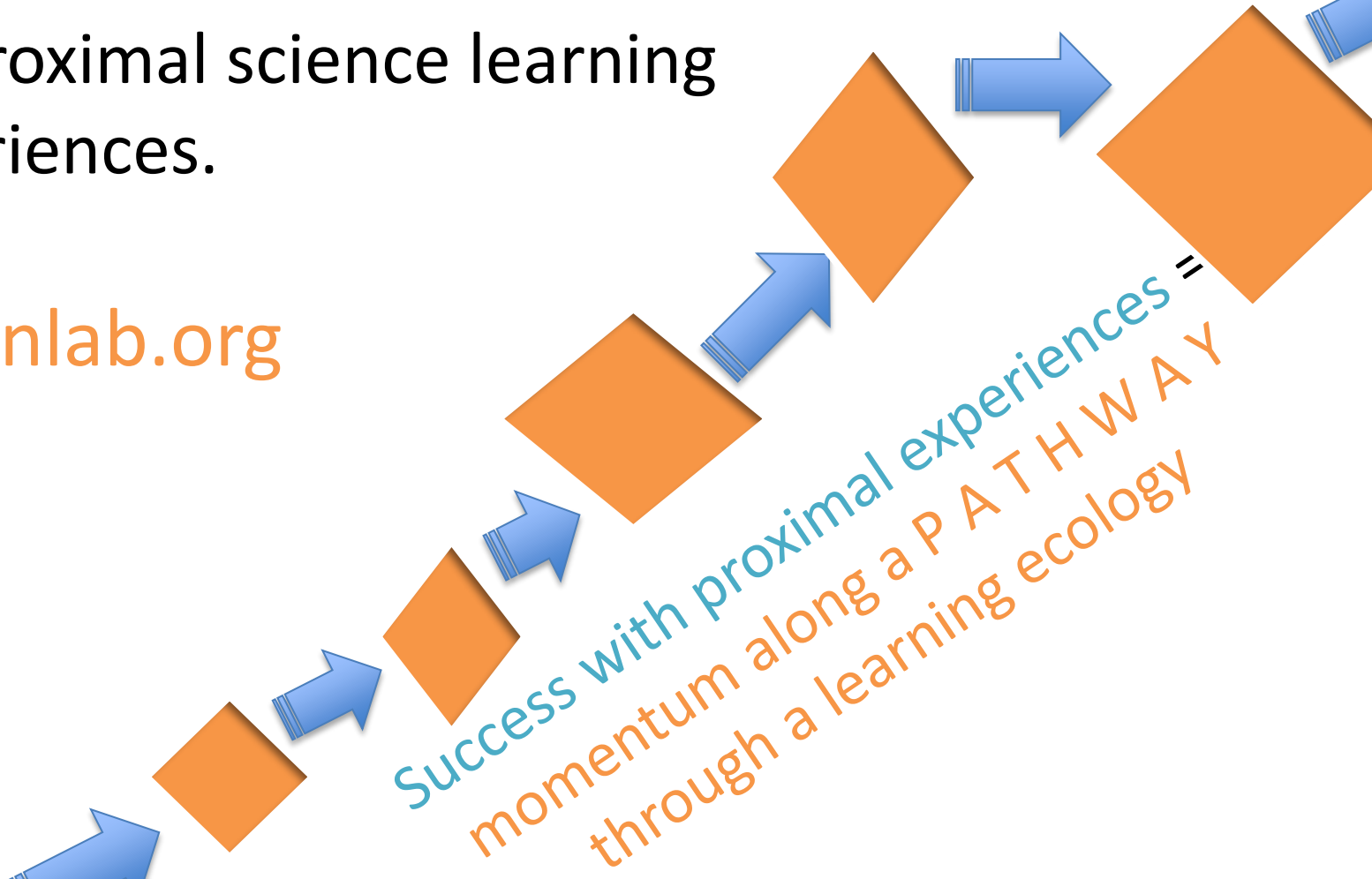
UNIVERSITY OF CALIFORNIA, BERKELEY



Science learning activation is

1. a composition of *dispositions*, *skills* and *knowledge*
2. that enables success
3. in proximal science learning experiences.

activationlab.org



Using Activation to Build Pathways



1. Shared aspiration for the city's youth
2. A R+P infrastructure for gardening in the ecology – tuning the goals of experiences and identifying and strengthening pathways
3. Bottom up approach
4. The potential for regional assessment linked to program and location specific goals

An aerial photograph of a city, likely Portland, Oregon, showing the Willamette River winding through the urban landscape. The city is densely packed with buildings and roads, surrounded by green hills and forests. The river is a prominent feature, curving around the city center.

Designing at the ecological level: Act Lab Design Fellows

1. Dual citizens of research and practice
2. Focusing on the next step in the pathway
3. Collecting and using data for decision making
4. Pollinators

learning PARTY

Spring Schedule

WEDNESDAYS 4:30-6:30pm

February 12th — Games

March 12th — Bikes

April 9th — Environment

May 7th — Robots



Learn the science,
technology, engineering, art,
and math about everything!

assemble

a community space for arts + technology

assemblepgh.org

Free for all ages (grown ups are invited, too)



assemble
a community space for arts + technology



TEENS AS TEACHERS SCRATCH

Join Caroline, our resident Scratch expert and teen teacher, for **FREE** drop-in Scratch classes on select **Mondays** from **4:15-5:15 pm** at Assemble. Learn the power of this easy to learn visual programming language developed by the MIT Media Lab. Let your imagination soar as you utilize critical thinking skills to create games, cards, and cool interactive programs! Please see our website, assemblepgh.org, or contact teens@assemblepgh.org for more information. Bring your own laptop or borrow one of ours. No programming experience necessary. Upcoming session dates: 3/31, 4/14, 4/28, 5/12

assemble
a community space for arts + technology

5125 Penn Avenue
Pittsburgh, PA 15224

**saturday
crafternoons**



The Pamphlet Problem



- Thirteen school partnerships serving over 300 students
- Four educational programs: Habitat Explorers (grades 1-2), Park Stewards (grades 4-5), Mission Ground Truth (grades 7-8), High School Urban Eco Stewards (grades 9-12)
- New Environmental Center





Educators who are aware of pathways



- Semi-structured interviews to understand students served, program content, and recruitment methods
- Transcriptions/thematic analysis
- Mapping composition and structure of the regional environmental ed network.

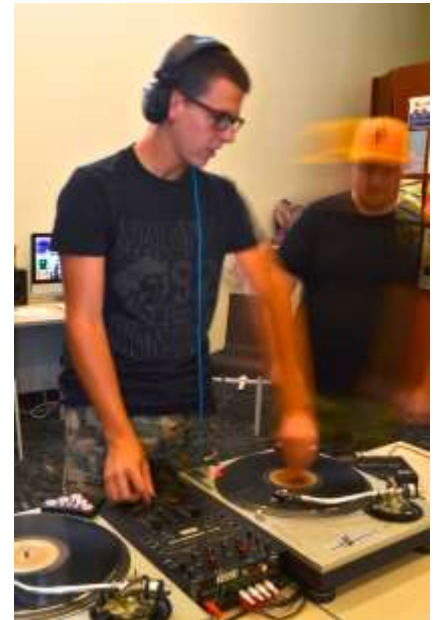
CARNEGIE MUSEUM OF **NATURAL HISTORY**

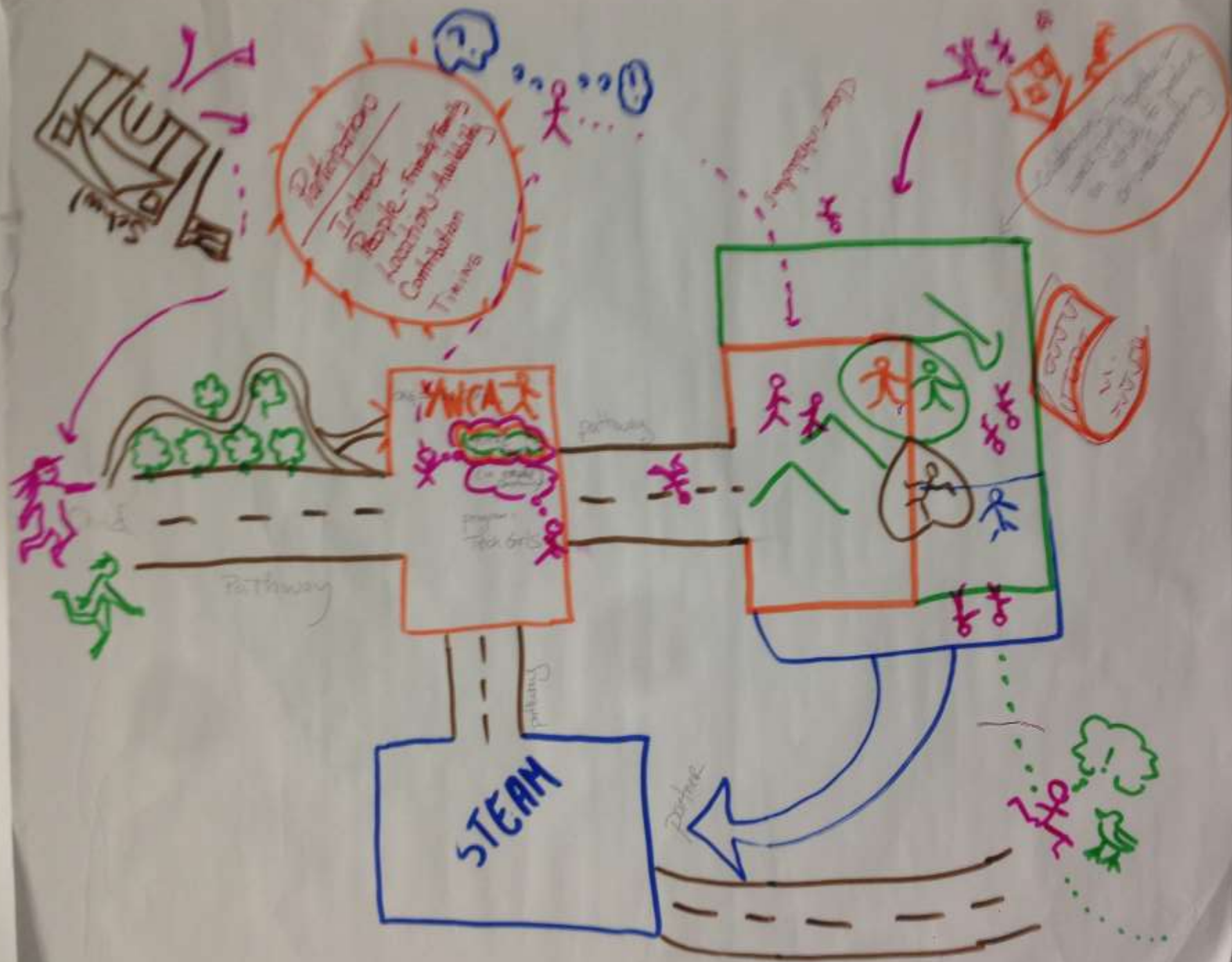
Collaborative
program
integrating
science, art,
& writing

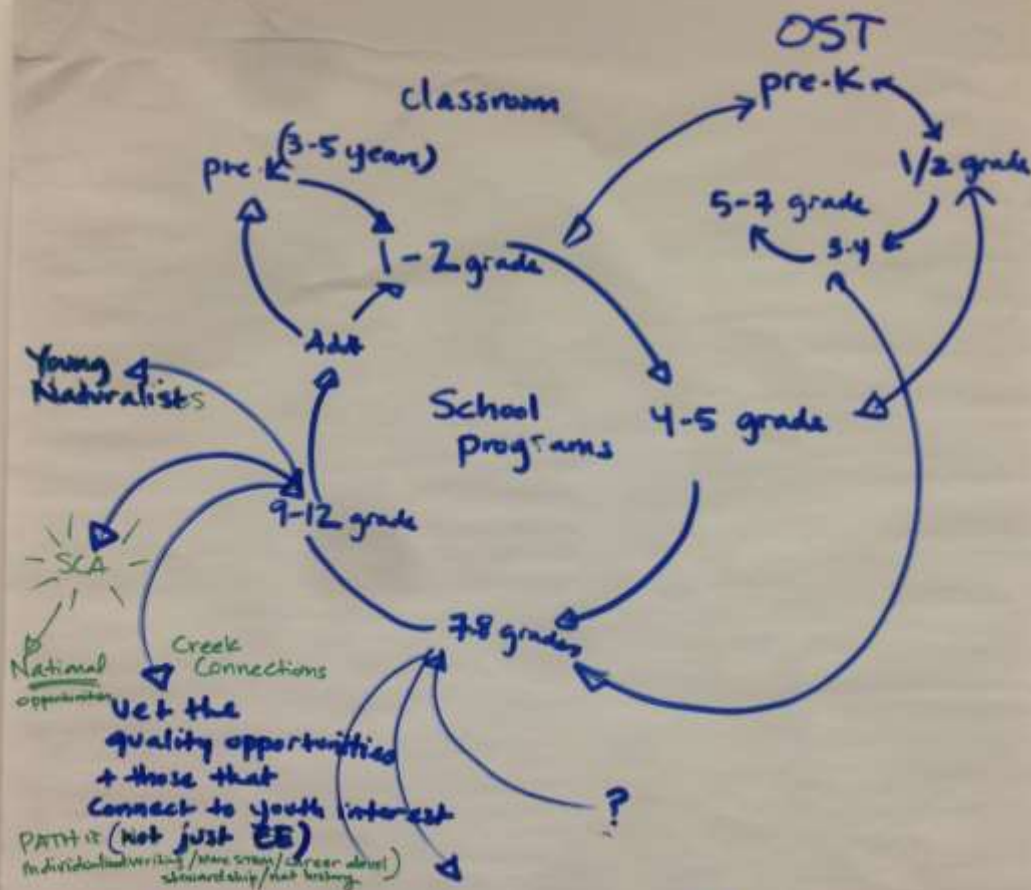
ROLL:
Revealing
Our Local
Landscape

Targeted towards
creating
pathways for
local
underserved
teen girls









? Best communication methods?

Needs to be very strategic + labor intensity

OUTSIDE guidance counselor - train mentors

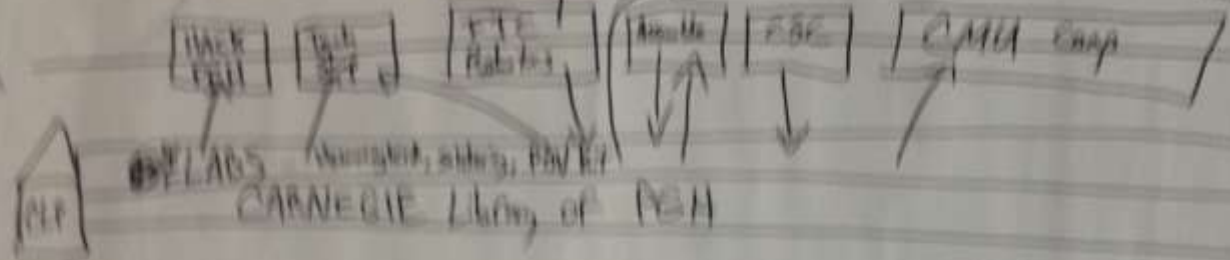
KIDS need help w/ applications, info
teachers are too stretched

On going look at what makes new approach successful?

Need a HUB for each content area - NEED adaptive management

What is our true niche?
How do we trust partners enough to let go of some things + let partners be real partners?

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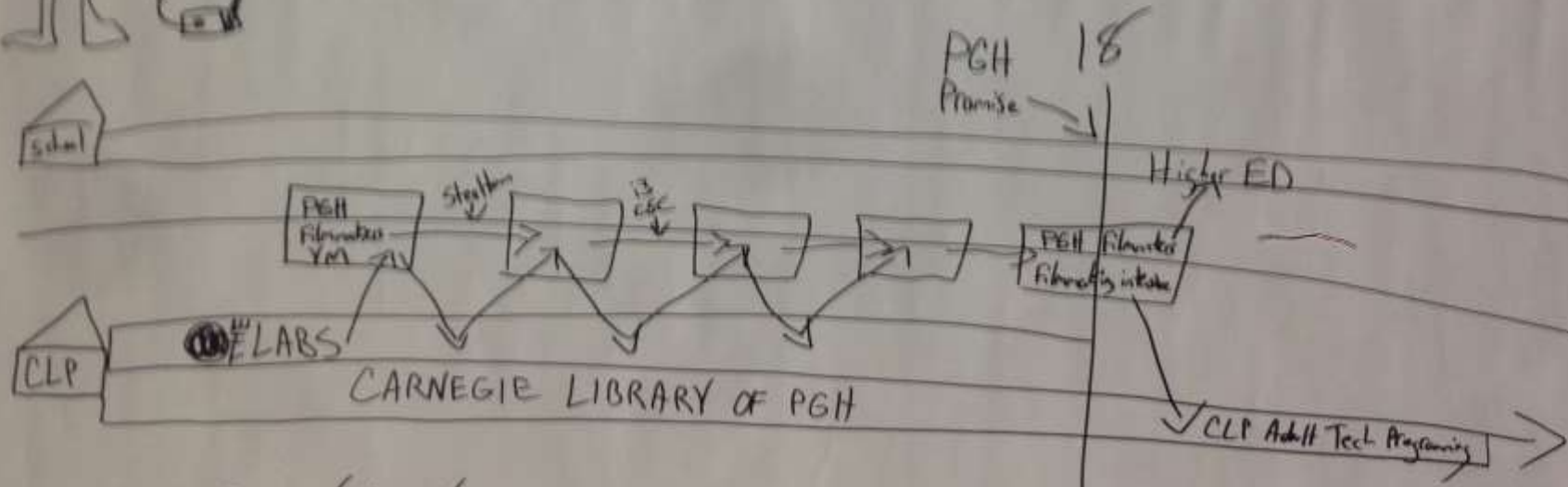
\$\$\$???



Robotics ↑



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Film/AV

An aerial photograph of a city, likely Seattle, showing a river (the Duwamish River) winding through the urban landscape. The city is densely packed with buildings and infrastructure, surrounded by green hills and forests. The river is a prominent feature, flowing from the top left towards the bottom center of the frame.

The thing about pathways is...

1. There aren't hundreds, but there's more than five
2. Parents, children, educators need tools to navigate
3. Beginning, middle, advanced
4. On ramps everywhere
5. It's hard for organizations. Closed vs. open pathways?