

# **A Technology-Driven, Citizen Science Approach to Creating Healthier Neighborhoods**

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**Stanford Prevention Research Center**  
**Stanford University School of Medicine**



# It Takes a Village....

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# Our Collaborators

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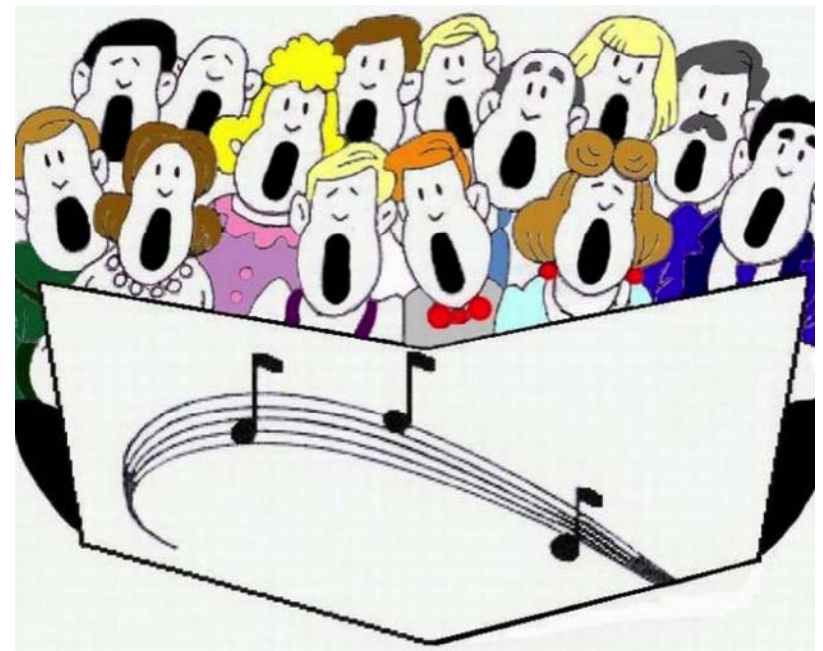
# Overview

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- Introduction and background
- The Stanford Healthy Neighborhood Discovery Tool
- The Citizen Scientist Community Engaged Model
- Our projects and successes (so far)
- Potential and challenges of this approach
- Questions?

# Background

- Physical inactivity and poor diet are risk factors for disease
- Many residents are insufficiently active and eat poorly
- The environments in which we live, work, and play affect our opportunities to engage in healthy lifestyle behaviors



# Our Approach

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- Using “citizen scientists” +
  - Mobile technology +
  - A community engaged approach
- to build community capacity and drive neighborhood environmental improvement



# What is Citizen Science?

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- Originally developed to study large scale patterns in nature
- Enlists the public in gathering data
- Can be used to build community capacity
- Increasingly used in health & environmental research



# The Stanford Healthy Neighborhood Discovery Tool

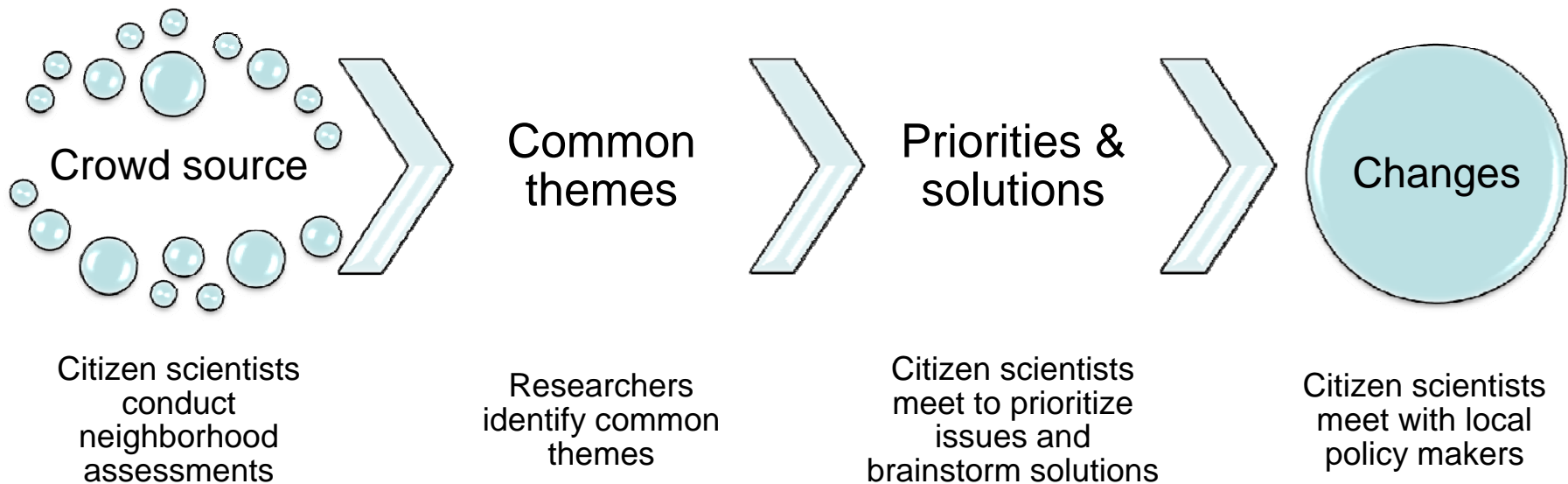
A tablet-based application used by citizen scientists to assess features of their neighborhood that promote or hinder healthful living





# Discovery Tool – Engagement Model

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# Developed and Tested with Low Income Ethnically Diverse Older Adults in the Bay Area

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# Successes – East Palo Alto

- Appropriated \$400,000 for environmental analysis
- \$1,000,000 grant to update general plan
- Targeted public health in future planning
- Creation of a safer walking environment
- Revision of streetscapes and pathways
- Improved access to senior center
- Implemented a comprehensive community sidewalk inventory and repair program



## Addressing Health in the General Plan

There is increasing consensus that the built environment of a community – streets, buildings, parks, public space, and housing – influences the health of those who live there. Creating a safe and healthy community is a policy priority for the City of East Palo Alto, and will be a focus of the General Plan Update. The topic of health is multi-disciplinary, with a relationship to topics as diverse as land use, transportation, air quality, parks, and demographics.

# Nuestra Voz, North Fair Oaks

## Facilitators



- Translated into Spanish
- Approach used by older adults and adolescents

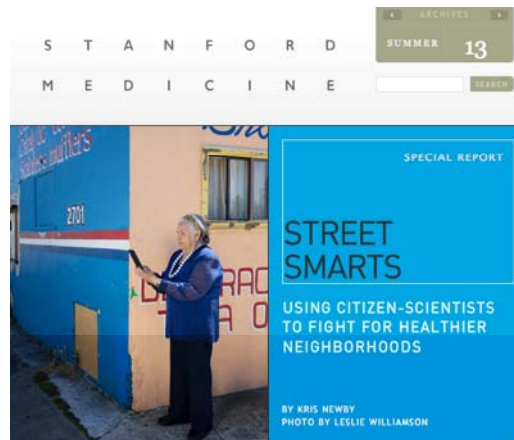


## Barriers

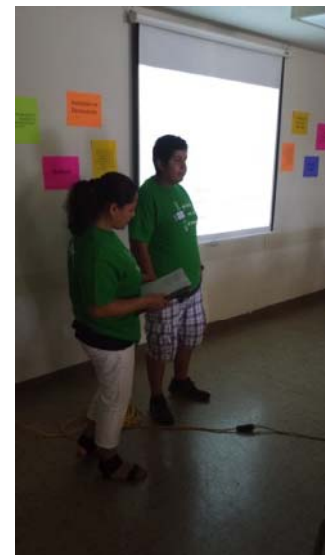


# Successes – North Fair Oaks

- Dialogue between residents and partners
- Community Advisory Board – trash/illegal dumping
- Community Resource Guide
- Citizen scientists engaged with local media



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# Nuestra Voz, Mexico



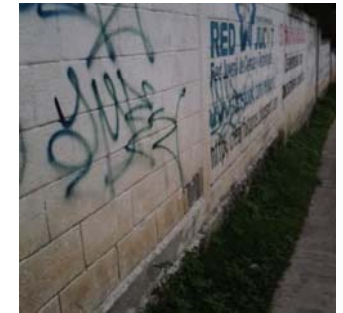
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## Facilitators



- **Similar issues:**
  - sidewalk quality, trash, graffiti
- **Differences:**
  - Severity of barriers
  - Approach to creating neighborhood change

## Barriers



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# Successes - Mexico



- Community residents engaged as citizen scientists
- Increased personal awareness/desire to take small steps to action
- Social mobilization to mount a campaign to address dog related issue
- Intergenerational discussions about ways to promote “legal street art” vs. illegal graffiti



# Israel



## Facilitators



- **Similar issues:**
  - trash, sidewalk quality, safety and security
- **Differences:**
  - wild boars not dogs!

## Barriers



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# Successes - Israel

- Consensus-building among Israeli Jewish and Arab residents concerning environmental and community strategies to improve neighborhood walkability
- **BECAUSE** environmental issues affect everyone

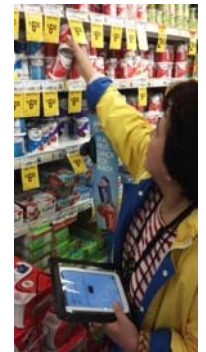


# FEAST



## (Food Environment Assessment Using the Stanford Tool)

- Barriers experienced by low-income older adults to accessing healthy food:
  - transportation/safety
  - access to fresh/affordable foods
  - lack of awareness about the variety of food assistance and transportation services available



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# Successes - FEAST



- Sustained actions on behalf of the participants:
  - 84% reported either:
    - contacting a local policy maker
    - using a new service (food stamps, shuttle service)
    - sharing information with a friend
- Residents requested additional healthy community advocacy training
  - Forum attended by representatives of the City and public transportation
  - Painting of a fire hydrant red zone in 4 days!



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# Other applications of the Discovery Tool - Engagement Model

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- Assessing Rural Neighborhoods
  - Different assets and barriers in rural vs urban locales
- Assessing the experience of Farmer's Market shoppers
  - contextual factors such as product presentation and social interactions important
- Assessing an urban Pop Up Park
  - To be tested – can citizen scientists code their own data?
- Assessing “Sunday Streets” program in San Francisco
  - Work in progress



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# Possibilities of this Approach

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- Helps articulate priorities and values (bilaterally)
- Creates mutual understanding in a collaborative environment
- Provides a mechanism for engaging participants & policy makers
- Allows community residents to be part of the problem identification process & contributors to solution finding
- Informs environmental change to benefit local communities
- Uses rich quantitative & qualitative data
- Uses a multi-level approach spanning individuals to policies
- Provides a voice to those who may be marginalized

# Challenges of this Approach

- Technology related:
  - “Digital divide”
  - Simplification for low literacy, tech naïve users
- Community engagement related:
  - Recruitment
  - Participant safety
  - Building trust
- Accessibility
- Scalability
- Sustainability



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# Funding

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