Engaging Communities:

Youth Participatory Action Research (YPAR)

to Investigate Teen Girl's Exposures to Pesticides

cerch
Center for Environmental Research & Children's Health

Contents

- Overview larger CHAMACOS Study
- Rationale, and benefits of participatory research
- Detail the YPAR-driven COSECHA Substudy
- Health communications activities
- Youth reflections
- Discussion and tips for participatory research

Center for the Health Assessment of Mothers and Children of Salinas (CHAMACOS)

cerch
Center for Environmental Research & Children's Health

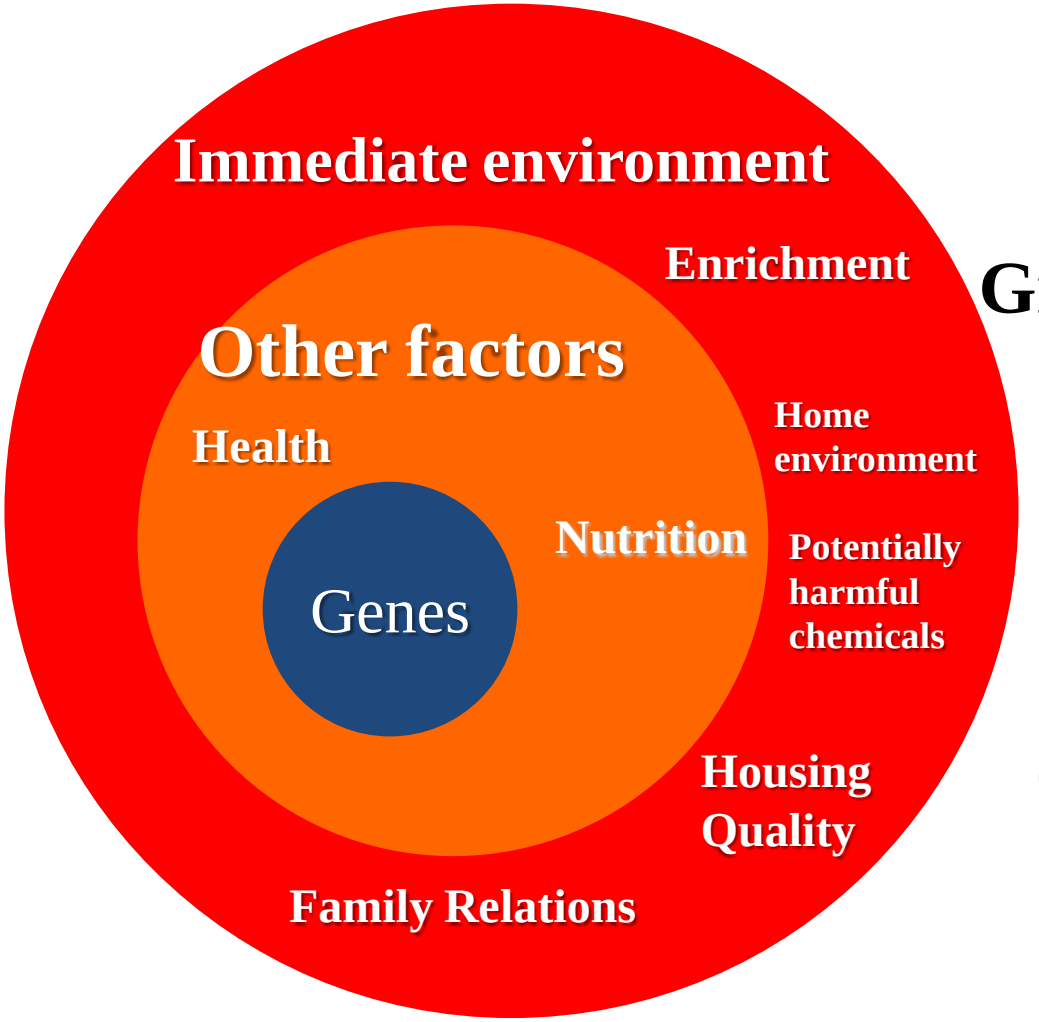
CLINICA de SALUD del VALLE de SALINAS
SVS

A community-university birth cohort study investigating health effects of environmental exposures in low income Mexican-American children living in the Salinas Valley, an agricultural community.

In 1999-2000, we enrolled 601 pregnant women

- 92% Spanish-speaking
- 85% born in Mexico
- 54% < 5 years in U.S.
- 96% living within 200% of poverty
- 44% 6th grade education or less
- 44% worked in agriculture during pregnancy
- 84% had other agricultural workers in home

Many Factors Influence Maternal and Child Health



Greater environment

Violence

Discrimination

Socio-economics

Acculturation

The CHAMACOS children grew up with many adversities…

Photo by Seth Holmes

Maternal depression (1 year) (CES-D)	50%
Housing Density >1.5 per room	49%
Rodents	32%
Food Insecurity	50%
No blocks or stacking toys (1 year)	51%

Bradman et al., 2005 EHP

Exposures

Pesticides

- Organophosphates
- Pyrethroids
- Manganese Fungicides Ethylene bisdithiocarbamates (EBDCs)
- Organochlorines
- Other current-use pesticides

Additional Chemicals

- Flame retardants
- Bisphenol A
- Phthalates
- Allergens (pollen / mold)
- Housing quality
- Social factors (race, nationality, income)

Outcomes

- Birth outcomes (duration of pregnancy, birth weight, etc.)
- Neurobehavioral development
- Respiratory functioning
- Obesity and child metabolic syndrome
- Puberty onset
- Thyroid hormone

CHAMACOS recently highlighted in the New York Times on 8/24/18

Rationale for Participatory Research

"…(if this nation is to transform society to eliminate health disparities and promote social justice), "a more democratic and ecological approach to scientific study is necissary," (one in which) "education between scientists and the public must take place in both directions"

- Dr. Steve Wing [1]

"*In the Process of Enlightenment, there can be only participants"*

- Jurgen Habermas

1.) Minkler, M., Wallerstein, N. (2008). Community-based participatory research for health. Jossey-Bass, A Wiley Imprint, San Francisco, CA.

Ccerch Center for Environmental Research & Children's Health

"Gold Standard" Community Based Participatory Research (CBPR)

Emphasis:

1. Strengths based
2. *Equitable* engagement in all facets of research
3. Co-Learning
4. Equitable distribution of resources (ex. grant $)
5. Capacity building
6. Research ***and*** action
7. Address *local* priorities
8. Sustained engagement

Minkler, M., Wallerstein, N. (2008). Community-based participatory research for health. Jossey-Bass, A Wiley Imprint, San Francisco, CA.

CBPR as Praxis Science

"To exist, humanly is to name the world, to change it. Once named, the world in its turn reappears to the namers as a problem and requires of them a new naming…But while to say the true word.. praxis- is to transform the world, saying that word is not the privilege of some few persons, but the right of everyone. Consequently, no one can say a true word alone – nor can she say it for another, in a prescriptive act which robs others of their words."

- Paulo Freire

cerch
Center for Environmental Research & Children's Health

Benefits of CBPR:
"Relevance, Rigor and Reach"[1]

- **Relevance**:
  - Ensures study focus addresses needs of the population
- **Rigor**:
  - Incorporates nuances of culture and context related to probabilities (and diversity) of exposures, study adherence and reducing attrition
- **Reach**:
  - Ensures study findings are translated and framed within the bounds of popular interests, identifying key venues for dissemination that are popular (ex. snapchat) or where people are most attentive (ex. PTA meeting)

1.) The Three R's: How Community Based Participatory Research Strengthens the Rigor, Relevance and Reach of Science. (Balazs CL, Morello-Frosch R)

Youth Participatory Action Research (YPAR)

- Centers youth as co-researchers
- Enhanced focus on capacity building and education
- Emphasis on making space for youth's voices
- Functions as somewhat "bounded" CBPR because potential age, experience and knowledge gaps

The COSECHA Study

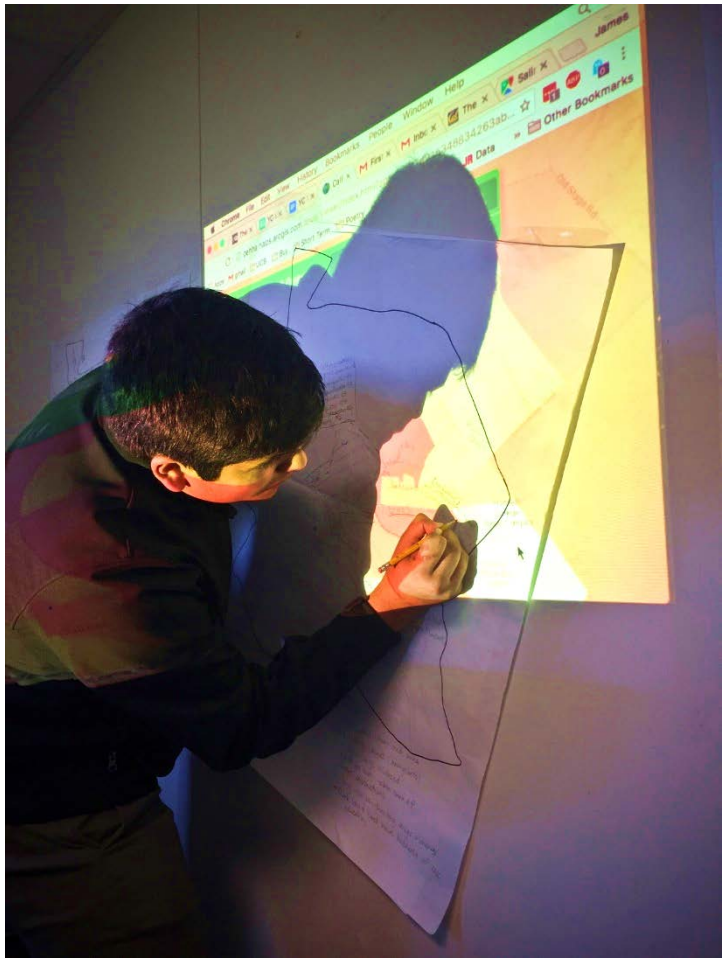
Chamacos Of Salinas Evaluating Chemicals in Homes & Agriculture

Research PI: Dr. Kim Harley, UC Berkeley

Community PI: Ms. Kimberley Parra and Mr. Jose Camacho, Clinica de Salud del Valle de Salinas

cerch
Center for Environmental Research & Children's Health

Study Background



- CHAMACOS has supported YPAR projects like COSECHA for almost 10 years
- COSECHA is a 3 year YPAR project
- Substudy (n= 100) of larger and long term CHAMACOS study (n= 600)

Youth Researcher looking for colocations of pesticide use and social adversity using CalEnviroScreen Data

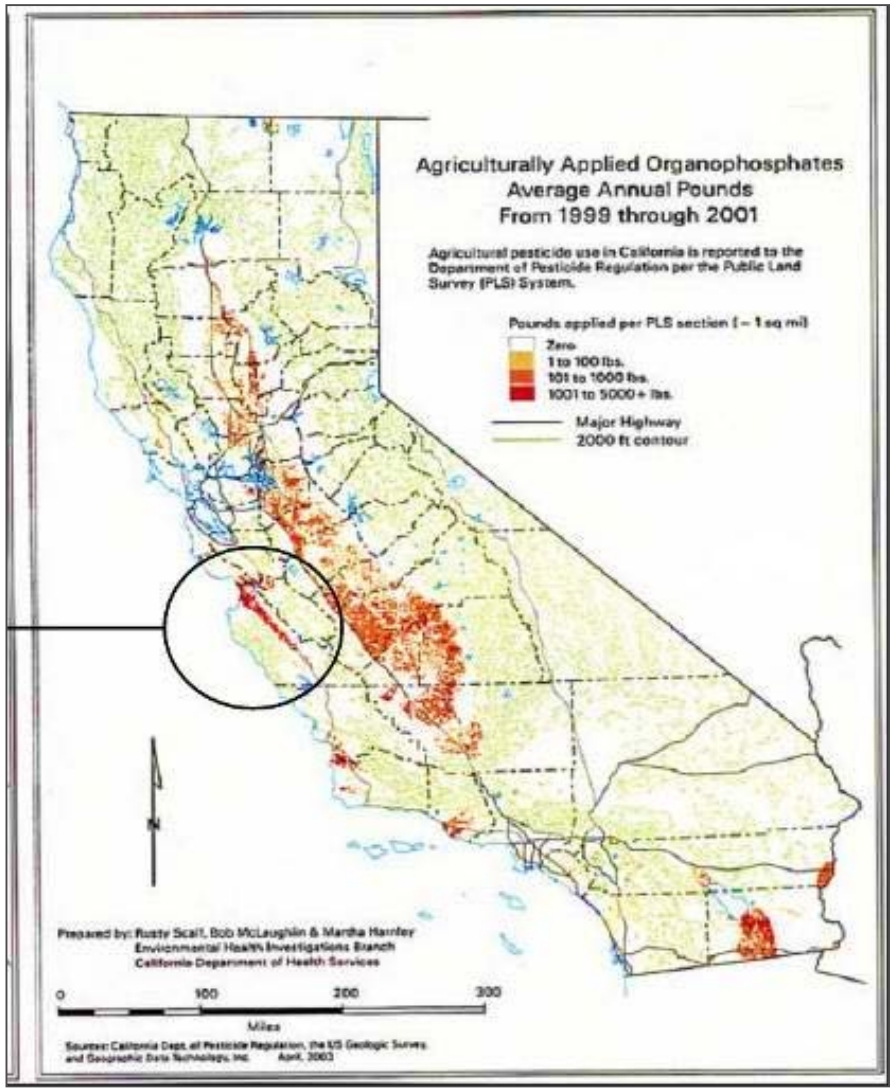
cerch
Center for Environmental Research & Children's Health

Study Goals

1) To characterize levels of pesticide exposure in 100 adolescent Latina girls in an agricultural community
2) To teach community members about agricultural pesticide exposure with pesticide use maps
3) To empower CHAMACOS Youth Council members through environmental health literacy, research, and advocacy skills

cerch
Center for Environmental Research & Children's Health

Pesticide Use in California



- California uses more than 185 million lbs of pesticides a year
- 7 million lbs are probable or possible carcinogens

The Salinas Valley:
“The Salad Bowl of the World”

Pesticides Used in the Salinas Valley

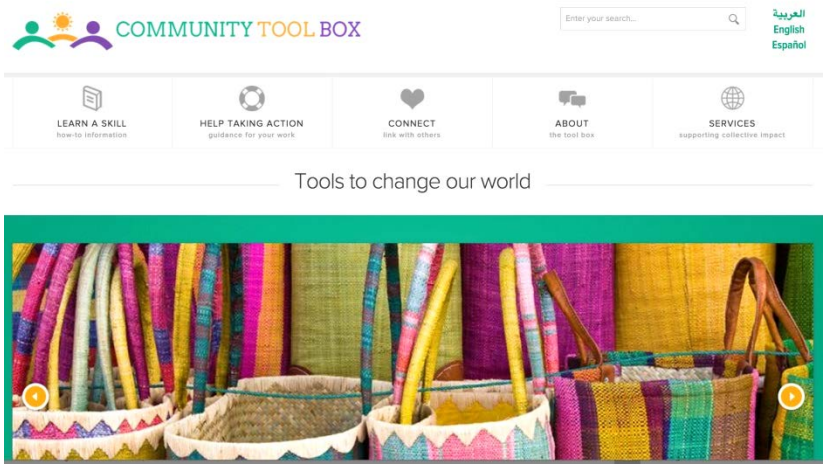
Pesticide	Toxicological Groups	Pounds (2016)
Acephate	Poss	29,723
Bifenthrin	Poss	4,978
Captan	Prob/ED	53,620
Carbaryl	Prob/ED	3,480
Chlorothalonil	Prob/ED	38,824
Dacthal	Poss	65,798
Diazinon	ED	113
Dimethoate	Poss	7,703
Diuron	MC/Prob/ED	3,730
Iprodione	Prob/ED	5,687
Malathion	Poss	43,504
Methomyl	ED	83,885
Metolachlor	Poss	2,125
Oryzalin	MC/Prob/ED	3,171
Oxyfluorfen	Prob	23,353
Permethrin	Prob/ED	32,692
Propyzamide	Prob	45,144
Trifluralin	Poss/ED	503
Total		**448,033**

- More than 9 million pounds of pesticides applied in the region in 2016
- Approximately 450,000 pounds linked to breast cancer

Regulation DoP. 2016 Annual Pesticide Use Report Indexed by Chemical Monterey County.

YC Meetings

- Built on our center's years of previous YPAR
- Curated selection of YPAR Hub Curriculum**
- Youth led presentations on key Community Toolbox* skills
- Life skills tutorials and college planning, guidance & tours



*University of Kansas
** Dr. Emily Ozer, UCB

Details

- Meet 2-3 times/mo, for 2-3 hours, for 3 years
- 10-30 hours paid work/week for each youth over each summer
- Emphasis on Socratic method
- Year 1: Research- foundational knowledge, protocol refinement, data collection
- Year 2: Digital communications and advocacy
- Year 3: Physical media, and intervention materials

Empowerment Measures

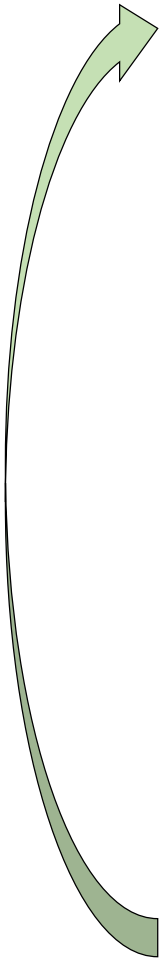
Quantitative Measures (questionnaire adapted from validated scales):

- Research and Action Self Efficacy (16 items)
- Sociopolitical Skills (8 items)
- Motivation to Influence (4 items)
- Participatory Behavior (8 items)
- Leadership Efficacy (3 items)

Qualitative Measures:

- Interviews
- Reflections
- Debriefs

Moving from Empowerment to "Transformative Praxis"



- Foundational Learning
- Relationship Building
- Critical Engagement (synthesis, pattern identification)
- Technical Trainings (ex. HVS3)
- Application of Knowledge (ex. protocol)
- **Empowerment & Critical Consciousness**
- Novel/Autonomous Ideation
- Capacity Building
- Community Action

Year I

Years II & III

cerch
Center for Environmental Research & Children's Health

Mr. Jose Camacho (Co-PI) discusses complexities of pesticide use in California with Youth Researchers

Dr. Kim Harley (PI) explaining health data to Youth Researcher

cerch
Center for Environmental Research & Children's Health

Key Youth Input

- Logo design
- Questionnaire items
- Color and sizes of bracelets
- Protocol vocabulary and methods
- Optimizing GPS and overall adherence

cerch
Center for Environmental Research & Children's Health

Study Methods

- Enroll 100 14-15 year old girls

1St Visit
- Survey, inventory of pesticides
- Bracelet, GPS
- Map nearby fields

- Girls wear bracelets, carry GPS for 1 week

2nd Visit
- Dust and surface wipe sample from home
- Urine sample from girl
- Questionnaire about pesticide use

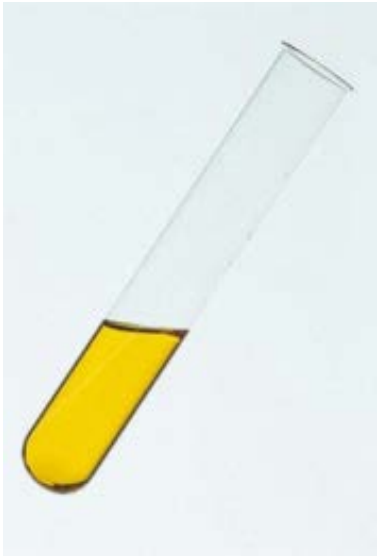
cerch
Center for Environmental Research & Children's Health

Measure Teenage Girls' Pesticide Exposure

Wristband monitors

Surface Wipes

House dust samples



Urine Samples

Correlate Pesticide Levels with:

Fields near the home

GPS

Home characteristics
(farmworkers, work clothes, house cleaning, etc)

Home pesticide use

Youth Trained in All Aspects of Data Collection

cerch
Center for Environmental Research & Children's Health

Paid as Summer Research Assistants

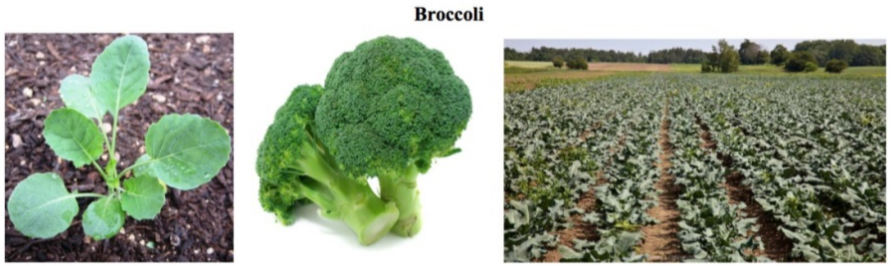
cerch
Center for Environmental Research & Children's Health

Worked as Study Interviewers

And Environmental Sample Technicians

cerch
Center for Environmental Research & Children's Health

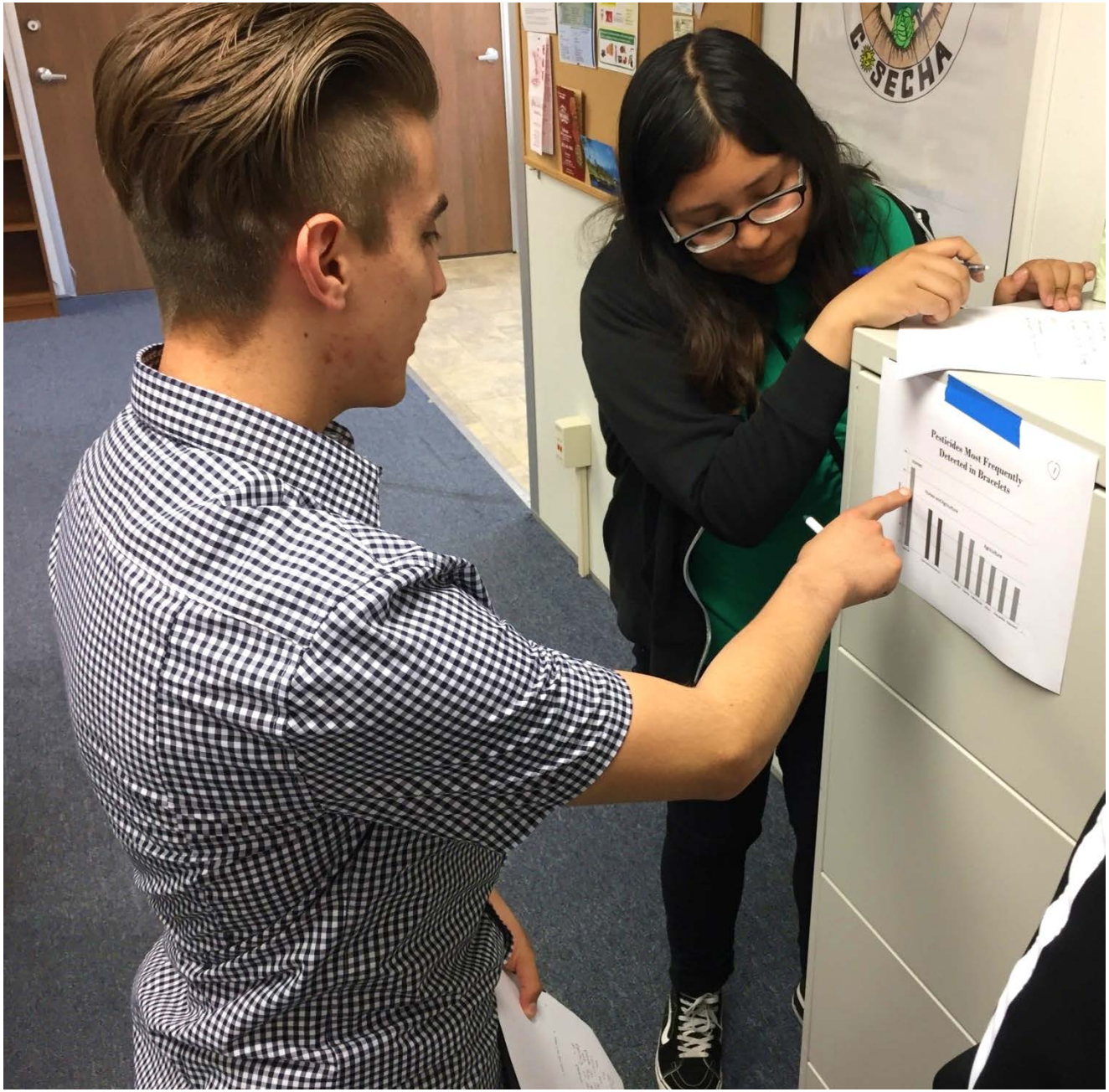
Crop Identification



- Youth use a crop identification booklet to verify crops growing in proximity to participant home

cerch
Center for Environmental Research & Children's Health

Results



Youth Researchers interpreting wristband data

cerch
Center for Environmental
Research & Children's Health

Results Methods

Wristbands:

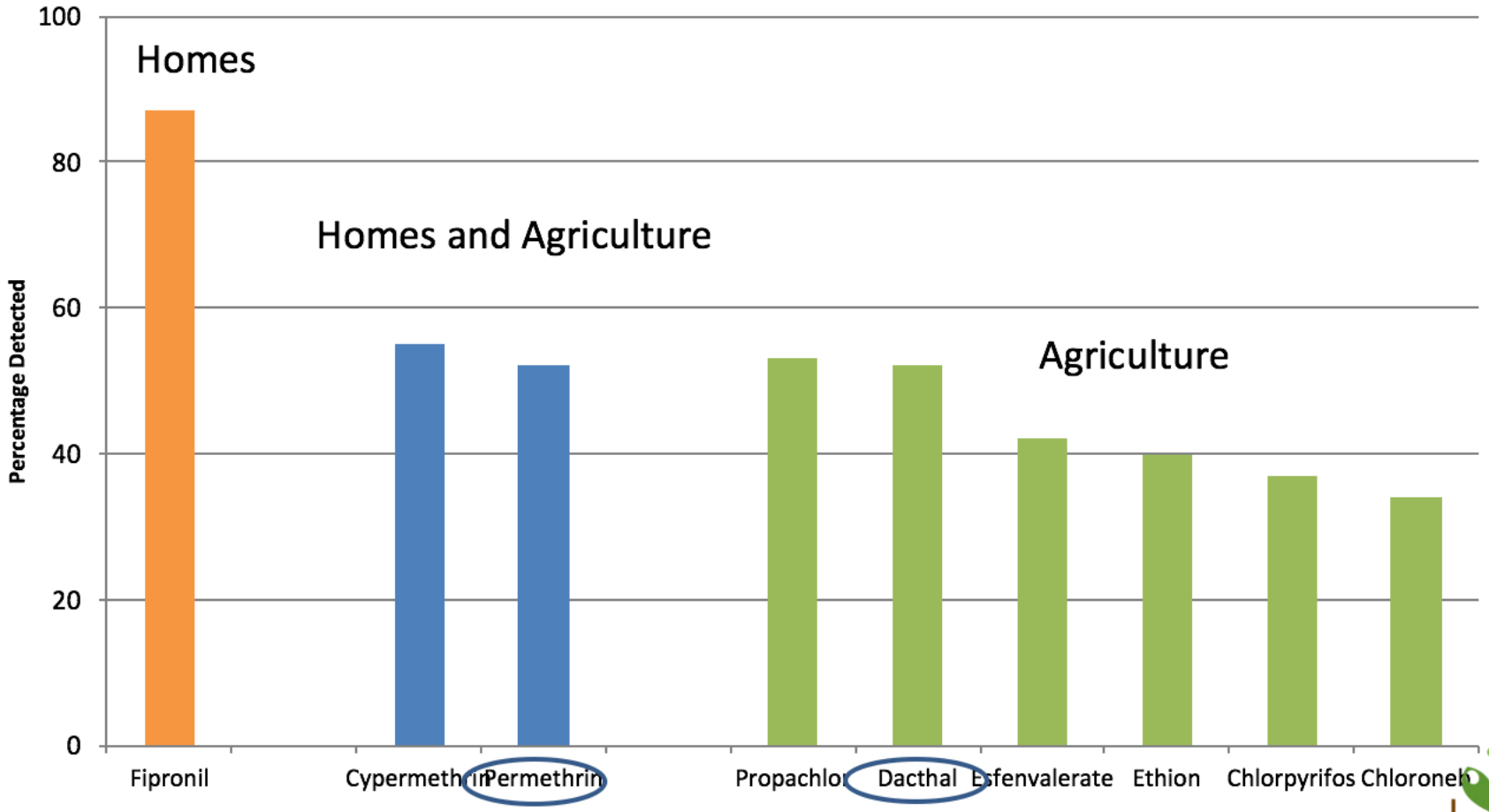
- Analyzed by Dr. Kim Anderson at Oregon State University
- 72 pesticides: Quantified concentrations using gas chromatography with electron capture detection
- 842 pesticides: Screened for presence/absence using gas chromatography with mass selective detector

Dust:

- Analyzed by Dr. Alice Yau at Southwest Research Institute
- 28 pesticides: Quantified concentrations in using LC/MS/MS or GC/MS

cerch
Center for Environmental Research & Children's Health

Wristbands:
Most Frequently Detected Pesticides



Harley et al, under review

cerch
Center for Environmental Research & Children's Health

Dust Samples

Field trip to laboratory

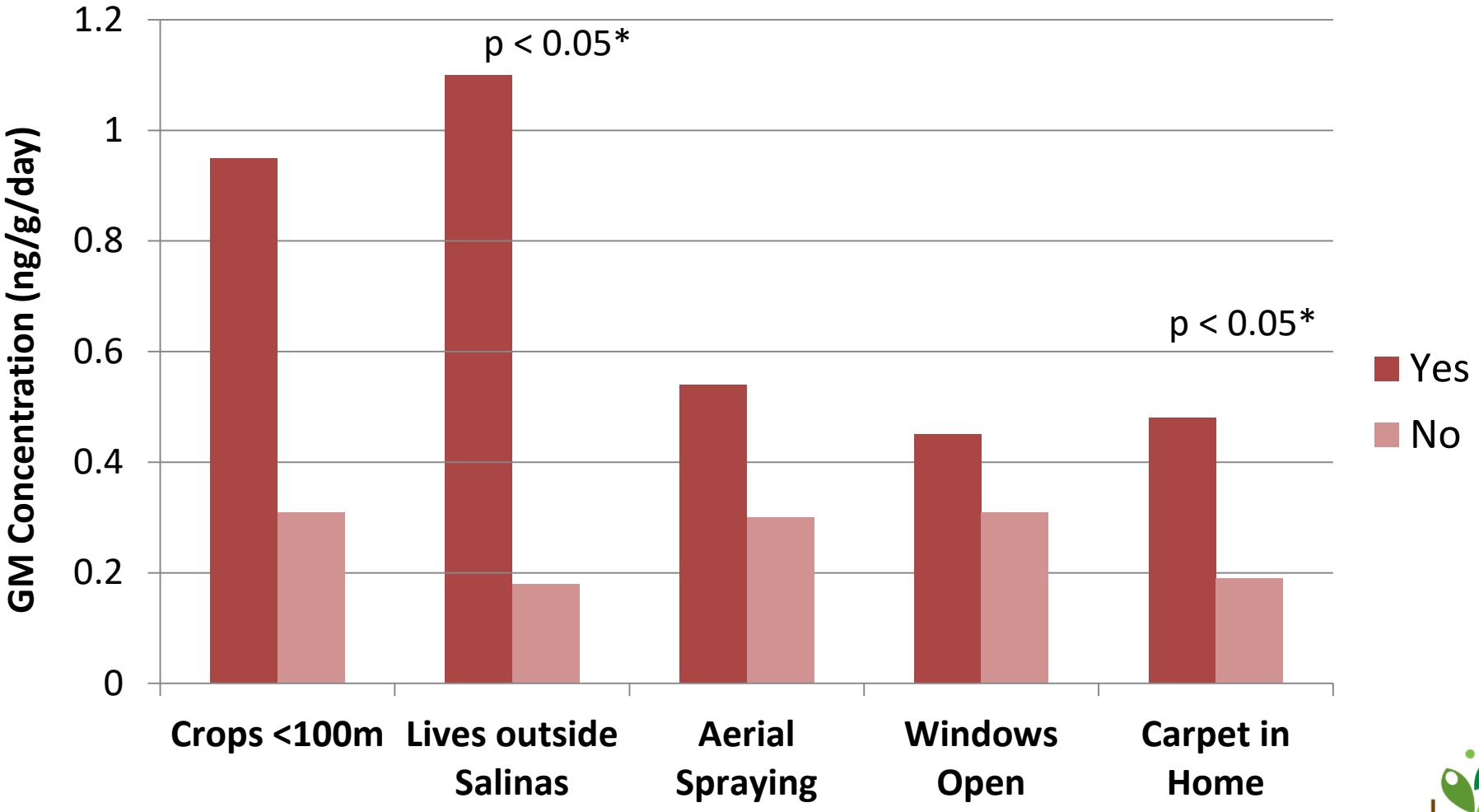
Youth Researcher visually examining dust sample

Youth Researchers double checking paperwork

cerch
Center for Environmental Research & Children's Health

Predictors of Wristband Concentrations

Factors Associated with Dacthal (Ag Pesticide) Levels in Wristbands

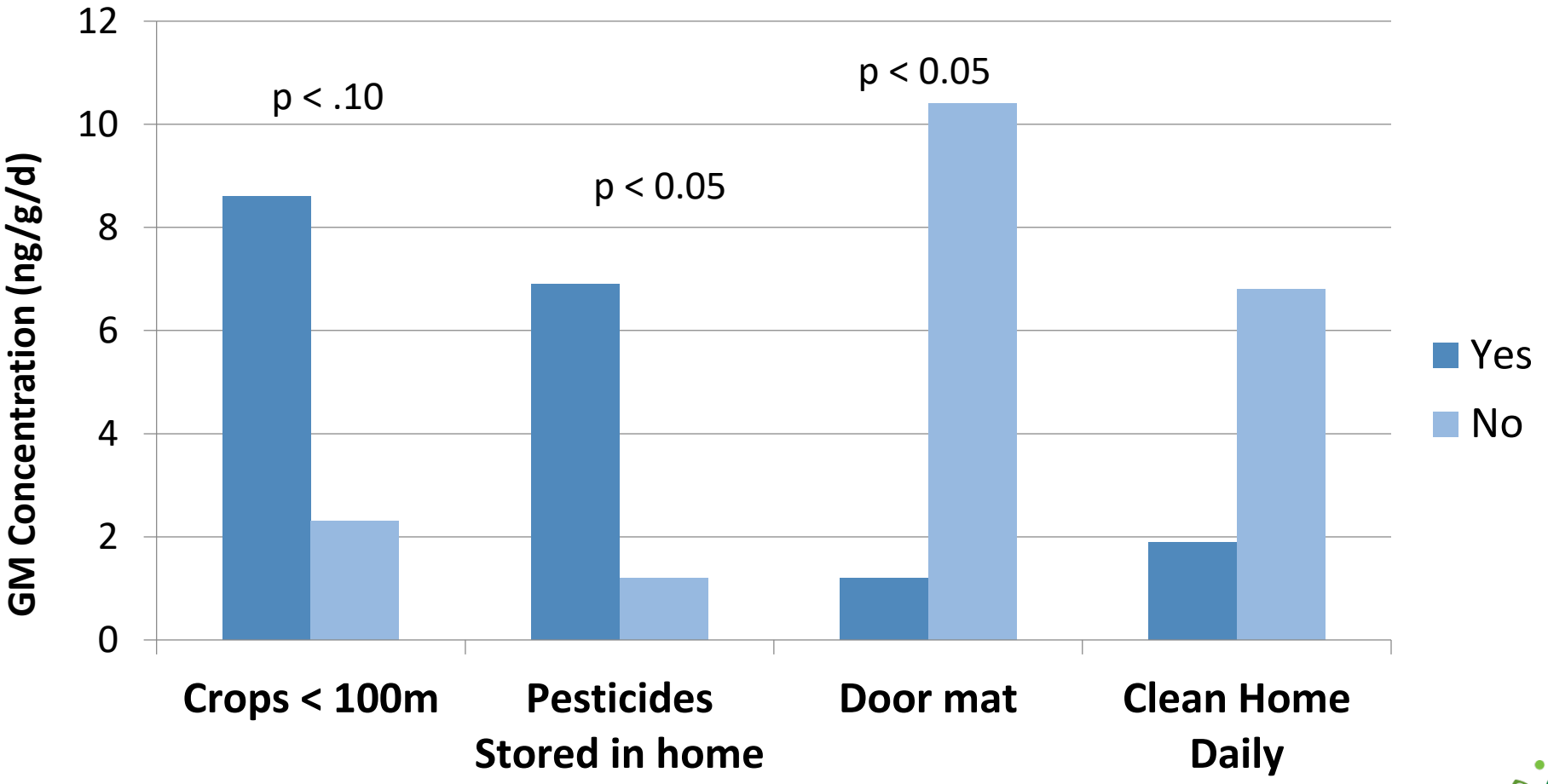


*P-values from multivariable Tobit analysis

Harley et al, under review

cerch
Center for Environmental Research & Children's Health

Factors Associated with Permethrin Levels (Home & Ag Pesticide)

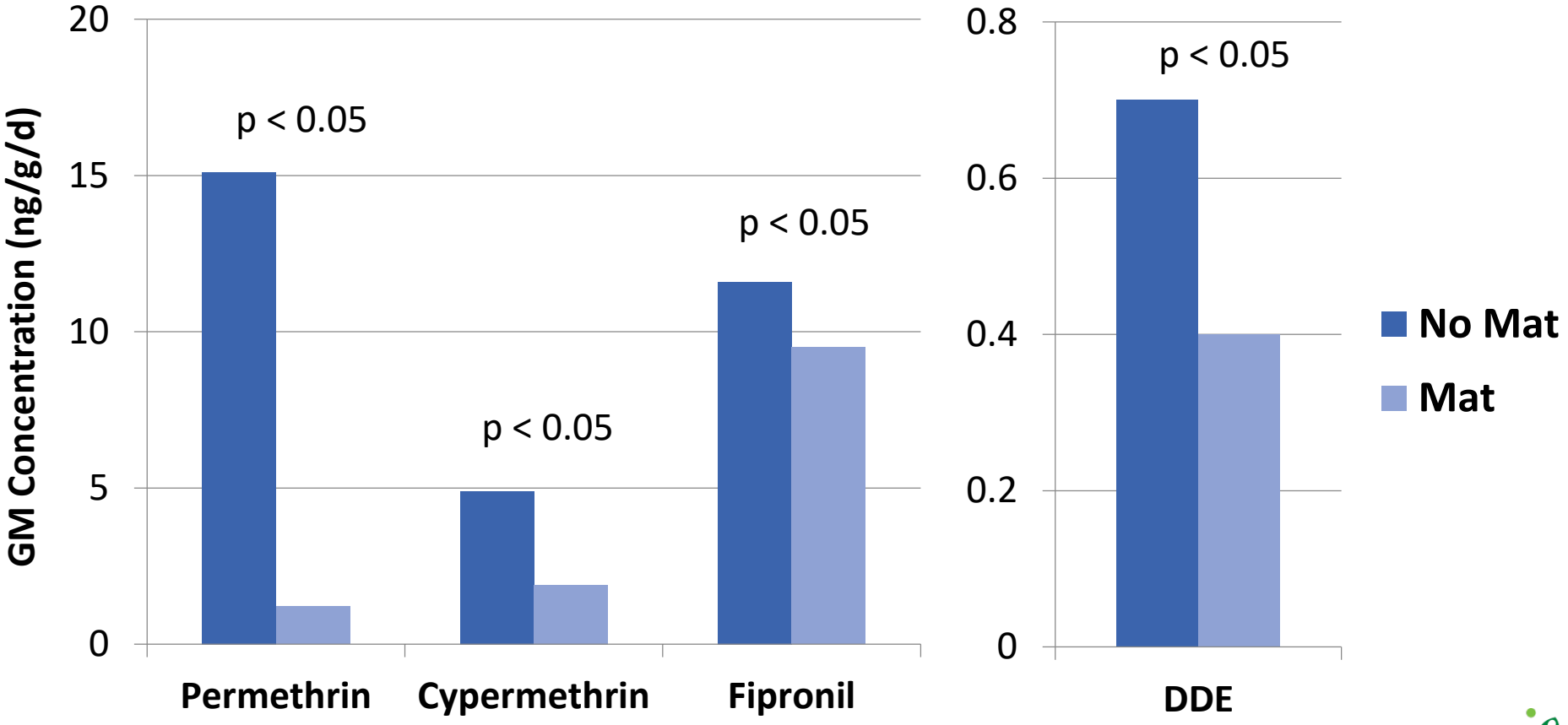


*P-values from multivariable Tobit analysis

Harley et al, under review

cerch
Center for Environmental Research & Children's Health

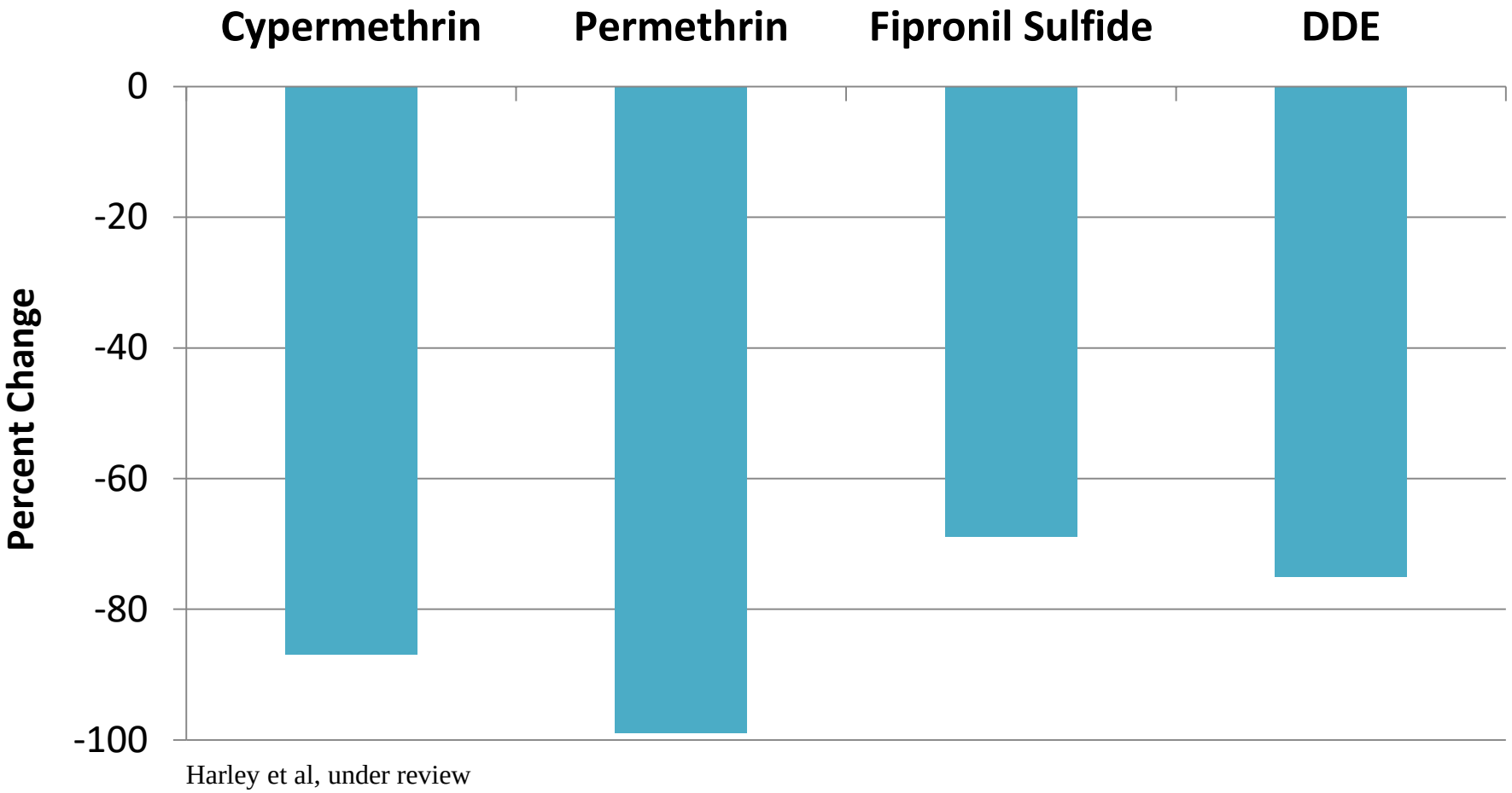
Homes with Doormats: Lower Pesticide Levels



Harley et al, under review

cerch
Center for Environmental Research & Children's Health

Multivariate Analysis: Door Mats Significantly Decrease Pesticide Levels in Bracelets



Harley et al, under review

Controlling for: crops <100m, ag workers in home, aerial spraying, carpet, house cleaning, pesticides in home, exterminator in last 6m

cerch
Center for Environmental Research & Children's Health

Summary

- **Wristbands had more associations overall:**
  - Lower pesticides detected with doormat use
  - Higher with:
    - Living outside of Salinas
    - Carpet in home
    - Used exterminator in last 6mo
    - Had pesticide products in home

cerch
Center for Environmental Research & Children's Health

Year II:

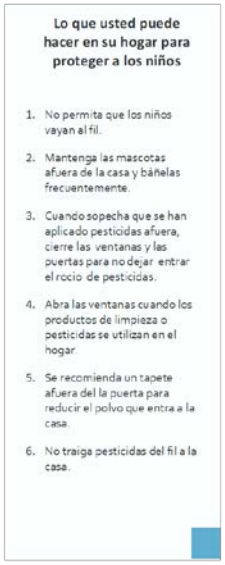
Engaging Youth Perspectives to Communicate Results

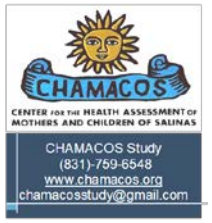
- News videos in English and Spanish (2016 & 2017, 2018 pending)
- Front-page Californian news article (9/5/18)
- Feature article in Ensia (forthcoming)
- Tabling at community outreach events (ex. cultural and STEM fairs)
- Featured in Berkeley Food Institute's Just Foods Podcast
- Peer to Peer remote mentorship (with Silent Spring Institute)
- Presentations to stakeholders: NRDC, Safe Ag Safe Schools, DPR, CRLA, Farm Bureau, Strawberry Commission, CSUMB (2x), CHAMACOS Forum

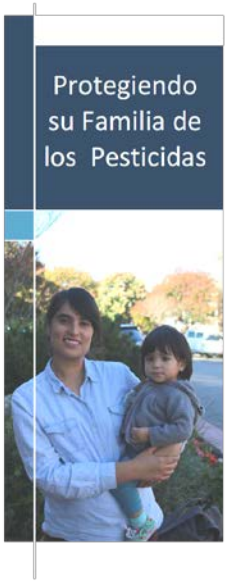
cerch
Center for Environmental Research & Children's Health

Community Education and Outreach

Conventional Educational Materials







Community Events

cerch
Center for Environmental Research & Children's Health

Social Media

cerch
Center for Environmental Research & Children's Health

home | contact us | press | public documents | resources | archives | Vea el sitio en Español

radio bilingüe

National Latino Public Radio Network

SUBMIT

About Us | Programs | Topics | Support Us | Listen

Youth Focused

Radio Bilingüe's Youth Focused Talk Shows include "Alza Tu Voz / Speak Out", a music and talk show designed for youth on self-identified topics that raise their voices and illuminate issues of concern in their community. The programs are created by youth who are part of our KHDC Salinas Youth Radio Training Program. Talk shows focus on issues including school participation, leadership, teen pregnancy prevention, civic activism and many others. "Alza Tu Voz / Speak Out" airs every Monday from 4pm – 6pm PT on Radio Bilingüe KHDC 90.9 FM in Salinas, California. The Youth Trainings are supported by the David and Lucile Packard Foundation. Youth programming is also supported by the Evelyn and Walter Haas Jr. Fund and the Blue Shield of California Foundation.

(Español) Huelguistas de hambre del Centro de Detenciones de ICE en Tacoma, WA, se apunta victoria contra *GEO Group*

21 September, 2017

This entry is only available in Español.

COSECHA, a study on how pesticide impacts on Latina Teens

28 August, 2017

Youth share about the Cosecha, a study on Pesticide Exposure in Latina Teens in the Salinas Valley. This study is part of Chamacos of...

Download

Meet the Hosts

Youth Producers

Radio Bilingüe KHDC Salinas Youth Radio Trainees are the producers of Alza Tu Voz / Speak Out, a music and talk show airing from the KHDC studios, 90.9 FM in Salinas, California.

Showtimes

Monday 4 - 6:00 pm PT

Contact Us

Jesús Ramírez: chuy@radiobilingue.org
831-757-8039

Find Us on Facebook

Like Share 13K people like this. Sign Up to see what your friends like.

Más Noticieros

Democracy Now! 2017-09-29 viernes
Democracy Now Spanish | 2017-09-29
Democracy Now! 2017-09-28 jueves

Youth Researchers, Mr. Jose Camacho and Mr. James Nolan did a live, 1 hour interview on radio

cerch
Center for Environmental Research & Children's Health

YPAR Hub

Learn About YPAR | Get Started | Define Issue | Investigate | Take Action

Salinas: CHAMACOS Youth Council

Home / Salinas: CHAMACOS Youth Council

Salinas: CHAMACOS Youth Council

Latino Youth Investigating Environmental Chemical Exposures in the Salinas Valley

By Juan Ramirez , Angel Heredia, Edgar Cardoso, and James Nolan

Learn more about the CHAMACOS Youth Council's approach to environmental health and justice research below!

Discover Other Illustrative Examples

Categories

- Examples of Change
- Examples of the Process
- Seeing it Coming Together
- Tips and Tricks

Youth Researchers in COSECHA wrote an article about our center's previous YPAR-driven HERMOSA Study, which focused on potential hormone disruptors in cosmetic products

cerch
Center for Environmental Research & Children's Health

YRA doing news interview in 2016

cerch
Center for Environmental Research & Children's Health

Radio Novella Series

Youth Researchers recording sound effects for Radio Novellas

- 7 episodes w/ sound fx, 60-90 seconds each
- Made in Spanish to radio specs, target stations popular with farmworkers
- Feature common potential exposure scenarios and simple solution
- Aired regularly on 10 radio stations to date !

cerch
Center for Environmental Research & Children's Health

Youth Researchers recording Radio Novellas

cerch
Center for Environmental Research & Children's Health

Youth Researchers recording radio novellas with sound engineer

cerch
Center for Environmental Research & Children's Health

Pesticide Use Reporting Map Tutorial

- Incorporates footage of fields and locations important to the community
- Demos prevention activities
- Both Spanish and English versions

cerch
Center for Environmental Research & Children's Health

Youth researchers filming near McKinnon Elementary School

cerch
Center for Environmental Research & Children's Health

Puppet Shows:

- 10 educational puppet shows performed to date
- Redesigned stage: more portable, better looking
- Script rewritten by youth to be more relevant and engaging
- Contract with Migrant Education (CDE) helped host puppets shows across CA in person, via skype and with pre-recorded video

cerch
Center for Environmental Research & Children's Health

Youth researchers conducting educational puppet show at community event

cerch
Center for Environmental
Research & Children's Health

Updated puppet show materials

cerch
Center for Environmental Research & Children's Health

Year III: Doormats and Murals

We ordered 1,000 custom-printed doormats, made by 4th generation mat-making family out of re-purposed coconut husk bi-products. Actual version is in Spanish.

cerch
Center for Environmental Research & Children's Health

Murals

- Several weeks of brainstorming, many weeks to paint
- Youth identified key images and messages
- Worked with Hijos team to turn ideas into compelling and cohesive visuals
- Unveiling ceremony during Art Walk Salinas with reporters in attendance

The Californian HOME NEWS SPORTS LIFE OPINION EL SOL OBITUARIES ARCHIVES USA TODAY SUBSCRIBE

Salinas mural on pesticides' impact on farmworkers opens for viewing Friday

Eduardo Cuevas, Salinas Californian Published 4:38 p.m. PT Sept. 4, 2018

CONNECT TWEET LINKEDIN COMMENT EMAIL MORE

(Photo: PROVIDED/CSUMB Salinas Center)

Art and science will blend as a new Salinas mural depicting a renowned local research group's efforts to understand pesticides' impacts on farmworkers and their families is unveiled this Friday.

The ideas stem from University of California, Berkeley's Center for Health Assessment of Mothers and Children of Salinas, or CHAMACOS, the longest-running study of pesticides and other environmental exposures in a farmworker community.

The CHAMACOS study began studying pregnant women in the Salinas Valley in 1999. They have since added another cohort, 9-year-olds, to the study, totaling more than 600 participants. "Chamacos" is also Mexican slang for "little children."

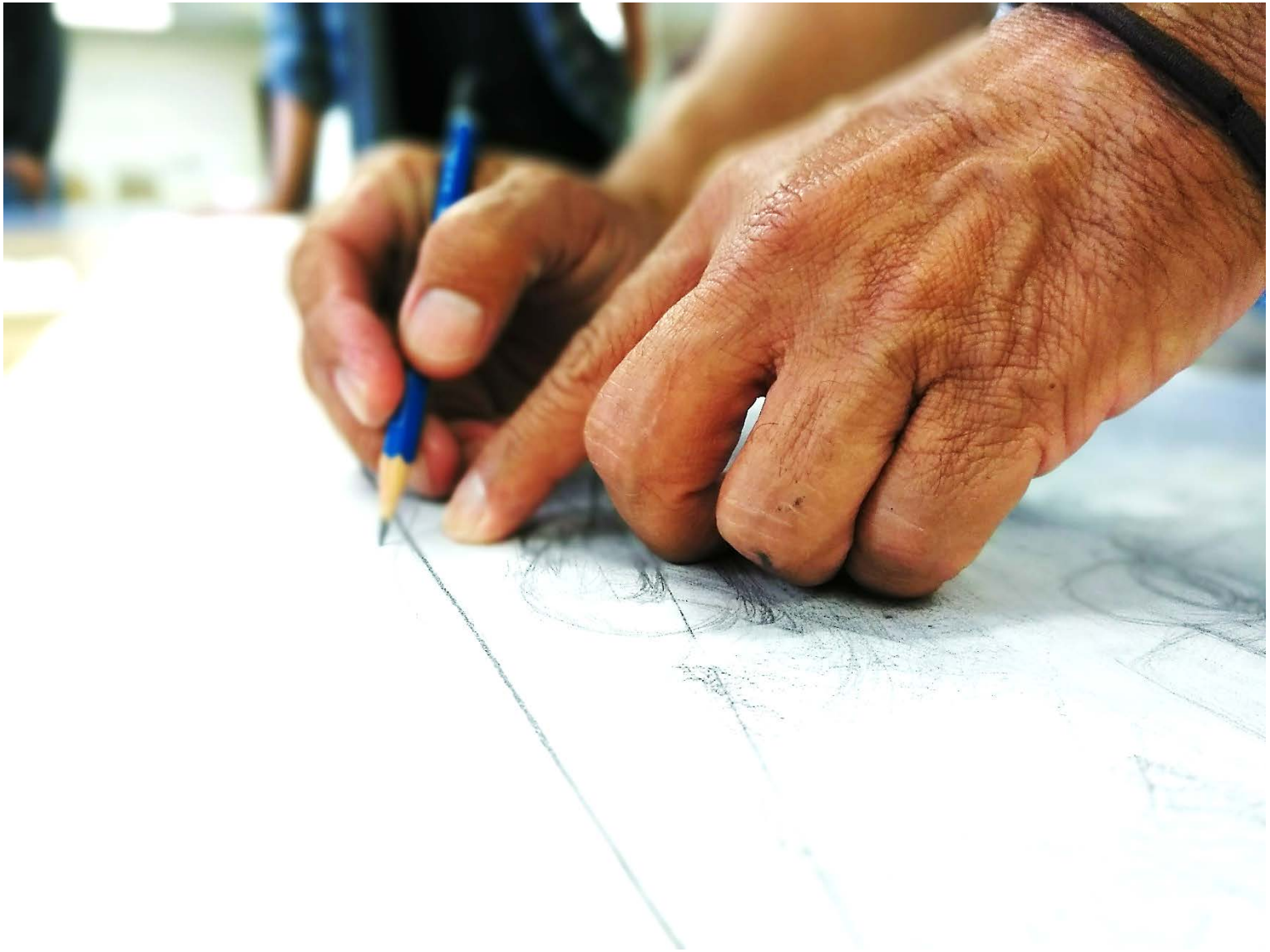
The study's youth council came up with the idea of using mural as a medium for communicating scientific research. The council is comprised of eight high school youth who were part of the study and are now all going to college, except for one entering the military, said James Nolan, community outreach coordinator for CHAMACOS.

COSECHA Youth Researcher's mural spotlighted on front page in print version of the Californian, 9/4/18

cerch
Center for Environmental Research & Children's Health

Youth Researchers brainstormed ideas and then practiced key painting techniques before beginning the mural itself

cerch
Center for Environmental Research & Children's Health



Community partner Jose Ortiz (Hijos del Sol) combining the youth's ideas into a cohesive whole

cerch
Center for Environmental Research & Children's Health

Hijos del Sol apprentices helped complete more technical aspects of mural and Jose Ortiz completed the final details

cerch
Center for Environmental
Research & Children's Health

A snapshot of the mural several weeks before completion

cerch
Center for Environmental
Research & Children's Health

Youth Reflections

Critical Consciousness:

- "I (now) feel like I fit into a whole other clique…a spark of hope for future generations… its given me the power to believe I can change things..."

- "I now wont be afraid to speak out (loud) to my classmates or future bosses."

Teamwork:

- "I learned to collaborate with my team (on) amazing adventures, ones that I'll never forget."

Capacity Building:

- "My skills… were enhanced: team building, data collection, kit cleaning, data entry, team communication, public speaking, respect towards adults, (and) interviewing…"

cerch
Center for Environmental Research & Children's Health

Youth’s Personal Reflections

cerch
Center for Environmental
Research & Children’s Health

Discussion

YPAR Benefits the Research

- Innovation and creativity
- Access to pop culture
- Connected with new tech (ex. new phones, apps, game consoles)
- Disarming and approachable nature of youth helps reach otherwise contentious groups

cerch
Center for Environmental Research & Children's Health

And Benefits for Youth

- Educational and mentorship opportunities
- Resume building
- Life skills building (ex. public speaking)
- Job opportunities
- Community service hours
- College Prep
- Letters of recommendation

Educational Attainment

All youth researchers who were old enough are going on to pursue higher education, many at top universities

YPAR Challenges

- Liability
- Paperwork
- Adaptability & centering youth's needs
- Time (and patience) needed
- Dividing work into smaller achievable steps
- Responsibility & follow-through
- Scheduling challenges (ex. school or clubs)
- Access to resources (ex. computer, internet, transit)

cerch
Center for Environmental Research & Children's Health

Long Term Goals

- Demystify “science ”, reframe for pop relevance
- Democratize scientific processes
- Diversify scientific workforce
- Project-based learning opportunities for communities affected by EH challenges
- Jobs with room for growth
- Boss < Supervisor < Facilitator < Consultant

cerch
Center for Environmental Research & Children's Health

Major Challenges:
New CBPR/YPAR work

- Need community ties to build community ties
- Time is cultural, yet researcher time finite & expensive
- Impossible to anticipate all community input when writing grant proposals, need to leave space for flexibility
- Hard to anticipate discretionary costs in grant budgets (ex. for action or education) to be determined by the community
- Many goals require more than 3-5 years
- Step up and step back: hold space for, and amplify, community voices, include your own as needed

Tips for Groups Just Starting Out

- Do you need to start a new center, a sub-study or a subcontract?
- Plan to do the work **at least** 3-5 years
- Hospitals and clinics make great partners
  - Core health goals align
  - Help advise on research rigor
  - Better chances of accessing relevant resources (ex. scientific equipment, conference rooms, bulk discounts)
  - Often stabile and predictable
  - Strong fiduciary and administrative infrastructure
  - Often have strong communications networks that can be tapped and hospital systems are a key group interested in research findings

cerch
Center for Environmental Research & Children's Health

Thanks to our Funder

Community Research Collaboration
Awards 18BB-1800 and 21BB-1900

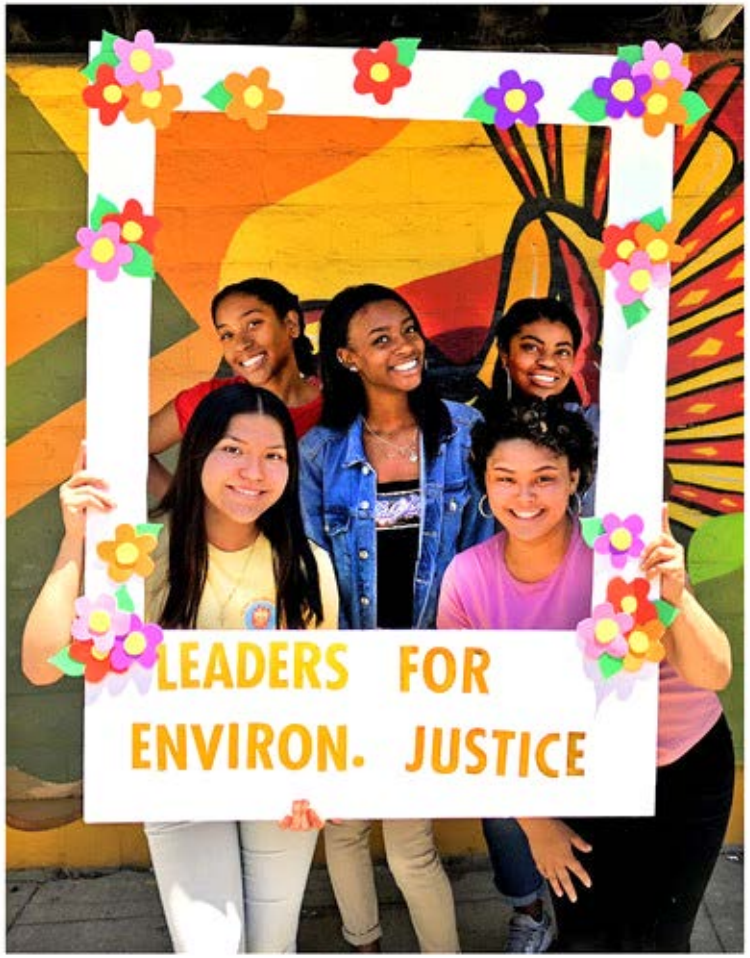
cerch
Center for Environmental
Research & Children's Health

New 3 Year YPAR Project:

Household Cleaning Chemical Investigation and Intervention (Salinas)

cerch
Center for Environmental Research & Children's Health

Follow-up on other CERCH YPAR Projects:
Richmond Youth Air Quality Initiative



Research PI: Dr. Kim Harley, UC Berkeley Lead Analyst: Dr. Eric Coker
Community Partner: Mr. Dan Reilly, RYSE Community Center

cerch
Center for Environmental Research & Children's Health

Thank You!

cerch
Center for Environmental Research & Children's Health

Stay up to date:

CERCH Website:
https://cerch.berkeley.edu/

Sign up for our newsletter !

CHAMACOS Facebook:
@CHAMACOS.CERCH

CLINICA de SALUD del VALLE de SALINAS
SVS

School of Public Health

cerch
Center for Environmental Research & Children's Health

Photo: James Nolan