

# Putting Theory Into Practice: Interventions to Promote Collaboration and Inclusion

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National Academies of Sciences, Engineering and Medicine

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Beth Israel Lahey Health 

Beth Israel Deaconess  
Medical Center



HARVARD MEDICAL SCHOOL  
TEACHING HOSPITAL

# Context



NICHD R01HD062478 Epidemiology of Preventable Safety Events in Prehospital EMS for Children  
NHLBI R01HL141429 Understanding and preventing adverse safety events in pediatric out-of-hospital cardiac arrests  
NHLBI R01 HL161385 Using Machine Learning to find a lifesaving needle in a haystack of children's emergencies 2022

# Best Practices from 24 Years of the BIRCWH

Beth Israel Deaconess Medical Center



## Team Mentoring for Interdisciplinary Team Science: Lessons From K12 Scholars and Directors

Jeanne-Marie Guise<sup>1</sup>, Stacie Geller, Judith G. Regensteiner, Nancy Raymond, Joan Nagel;  
Building Interdisciplinary Research Careers in Women's Health Program Leadership

Interdisciplinary Research Career Development:  
Building Interdisciplinary Research Careers in Women's Health Program Best Practices

Steven E. Domino, M.D., Ph.D.<sup>1</sup>, Joann Bodurtha, M.D., M.P.H.<sup>2</sup>, Joan D. Nagel, M.D., M.P.H.<sup>3</sup>,  
and the BIRCWH Program Leadership<sup>4</sup>

## Journal of Clinical and Translational Science

EDUCATION  
RESEARCH ARTICLE

Organizational and training factors that promote team science: A qualitative analysis and application of theory to the National Institutes of Health's BIRCWH career development program

Jeanne-Marie Guise<sup>1,2,3,4\*</sup>, Susan Winter<sup>5</sup>, Stephen M. Fiore<sup>6</sup>,  
Judith G. Regensteiner<sup>7</sup> and Joan Nagel<sup>8</sup>

## ORIGINAL RESEARCH

### Building the Women's Health Research Workforce: Fostering Interdisciplinary Research Approaches in Women's Health

组建女性健康研究力量：促进女性健康的跨学科研究方法

Creación del personal de investigación sobre la salud de las mujeres: el fomento de los enfoques de investigación interdisciplinaria sobre la salud de las mujeres

Joan D. Nagel, MD, MPH, *United States*; Abby Koch, MA, *United States*; Jennifer M. Guimond, PhD, *United States*;  
Sarah Glavin, PhD, *United States*; Stacie Geller, PhD, *United States*

GLOBAL ADVANCES IN HEALTH AND MEDICINE

## the AMERICAN JOURNAL of the MEDICAL SCIENCES

### Contributors to Independent Research Funding Success from the Perspective of K12 BIRCWH Program Directors

Esther Choo MD, MPH<sup>1</sup>, Shammarie Mathis<sup>2</sup>, Tabria Harrod MPH<sup>2</sup>,  
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Marie Krousel-Wood MD, MSPH<sup>6,7</sup>, Thomas E. Curry Jr. PhD<sup>8</sup>, Jeanne-Marie Guise MD, MPH<sup>1,2,9,10</sup>



## Best practices and pearls in interdisciplinary mentoring from Building Interdisciplinary Research Careers in Women's Health Directors

Jeanne-Marie Guise<sup>1</sup>, Joan D Nagel, Judith G Regensteiner;

Building Interdisciplinary Research Careers in Women's Health Directors



Educating the Scientific Workforce on Sex and Gender Considerations in Research: A National Scan of the Literature and Building Interdisciplinary Research Careers in Women's Health Programs

Anne M. Libby, PhD,<sup>1</sup> Hannah G. McGinnes, MPH,<sup>1,2</sup> and Judith G. Regensteiner, PhD<sup>3</sup>  
Research Article | NO ACCESS | Published Online: 26 October 2022

### Bibliometric Approach to Evaluating the Impact of a Building Interdisciplinary Research Careers in Women's Health K12 Research Career Development Program

Authors: Jerica M. Berge, PhD, MPH, LMFT, CFLE Kait Macheledt, BA Caitlin Bakker, MLIS, AHIP, Sharon Allen, MD, PhD, Bharat Thyagarajan, MD, PhD, and Jean F. Wyman, PhD, RN | [AUTHORS INFO & AFFILIATIONS](#)

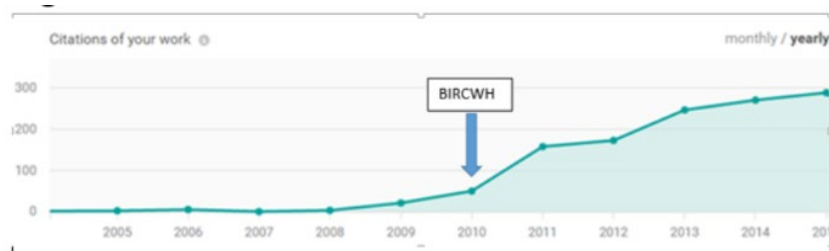
# Building Interdisciplinary Research Careers in Women's Health (BIRCWH) K12 Program

- Started in 2000
- Trans-NIH Institutional Mentored Research Career K12 Program
- Research on women's health and/or sex/gender differences
- All types of research: basic, clinical, translational, clinical, behavioral, population, health services research
- Built around 3 pillars: interdisciplinary research, career development, mentoring
- >750 faculty

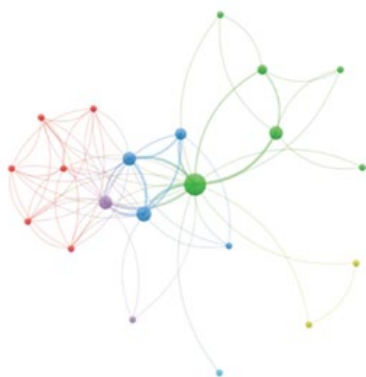




# Interdisciplinary Team Science Has A Positive Impact on Careers



**A**  
Pre-BIRCWH Scholar Collaboration Nodes



**B**  
Post-BIRCWH Scholar Collaboration Nodes



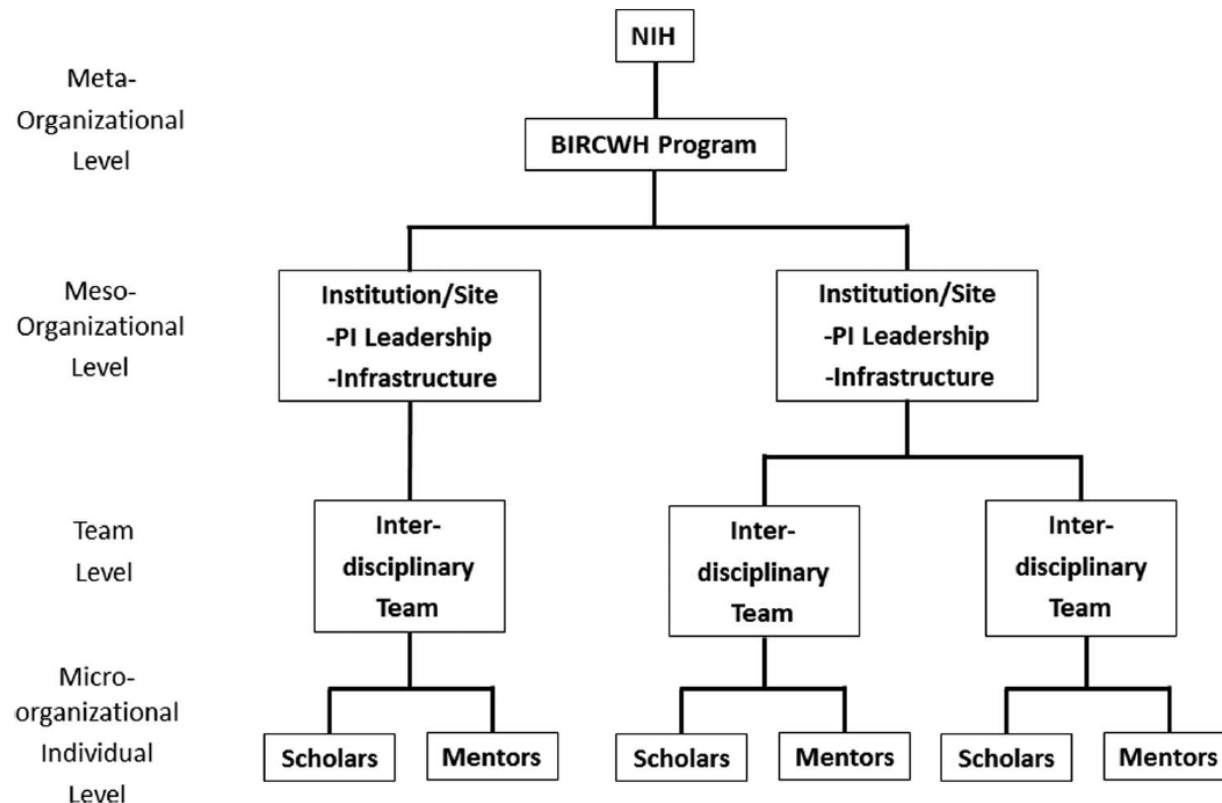
- “Nearly 80% submitted at least one competitive application for an NIH grant.”
- “Of those who applied, almost two-thirds received at least one funded grant.”
- “Bibliometric findings show exponential network growth, interdisciplinary collaborations,”
- “88% graduates stay in research careers”

Nagel, JD. et al. Building the Women's Health Research Workforce: Fostering Interdisciplinary Research Approaches in Women's Health. *Glob Adv Health Med.* 2013 Sep;2(5):24-9

Berge, Jerica M., et al. "Bibliometric Approach to Evaluating the Impact of a Building Interdisciplinary Research Careers in Women's Health K12 Research Career Development Program." *Journal of Women's Health* 31.10 (2022): 1422-1431.

Janine Clayton 2023 Annual BIRCWH Conference. Washington DC. December 2023

# BIRCWH Cross-organizational Infrastructure



Guise JM, Winter S, Fiore S, Regensteiner JG, Nagel J. Organizational and training factors that promote team science; A qualitative analysis and application of theory to the National Institutes of Health's BIRCWH career development program. J Clin Transl Sci. 2017

# BIRCWH Best Practices – Meta Level

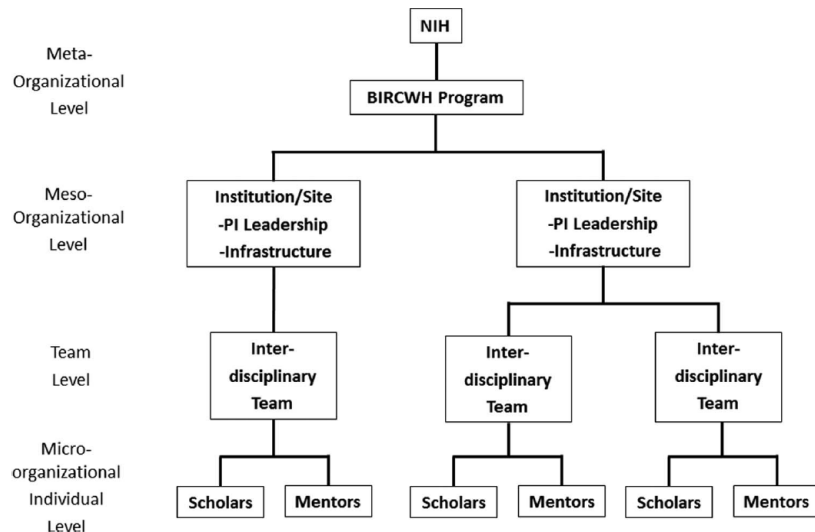
## Annual BIRCWH Conference

- “Engineering knowledge sharing in a systematic way” – Steve Fiore

- Across programs
- Across disciplines
- Senior and early career scientists

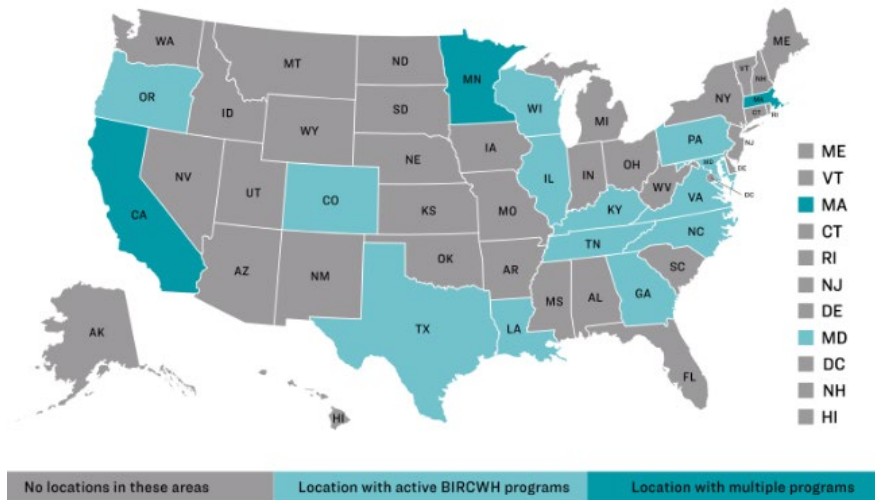
- Lowering barriers and teaching skills – round tables with NIH officers

- Networking & collaboration



Guise JM, Winter S, Fiore S, Regensteiner JG, Nagel J. Organizational and training factors that promote team science; A qualitative analysis and application of theory to the National Institutes of Health's BIRCWH career development program. J Clin Transl Sci. 2017

# BIRCWH Best Practices – Meso Level (Program/Institution)



- Internal advisory committees
- External evaluation & reporting
- Peer to peer mentoring

Guise JM, Winter S, Fiore S, Regensteiner JG, Nagel J. Organizational and training factors that promote team science; A qualitative analysis and application of theory to the National Institutes of Health's BIRCWH career development program. J Clin Transl Sci. 2017



# Virtual Technologies Expanding DEIA Partnerships in the BIRCWH

BIRCWH Program Institution(s)	Collaborating HBCU/MSI*
Duke University	North Carolina Central University
Vanderbilt University	Meharry Medical College
Emory University and University of Colorado	Morehouse School of Medicine
Johns Hopkins University	Morgan State University
Tulane University	Xavier University of Louisiana
Magee Women's Research Institute	Ponce Health Science University, PR
Oregon Health & Science University	University of Hawai'i and University of Alaska Northwest Native American Center of Excellence with support of 43 Pacific Northwest tribes

# Engaging Patients and Communities in Team Science

## Lessons from AHRQ PCORI Training Programs

K12HS019456 Oregon Comparative Effectiveness Research K12 Program 2010-2013

K12HS022981 Oregon Patient Centered Outcomes Research K12 Program 2013-2018

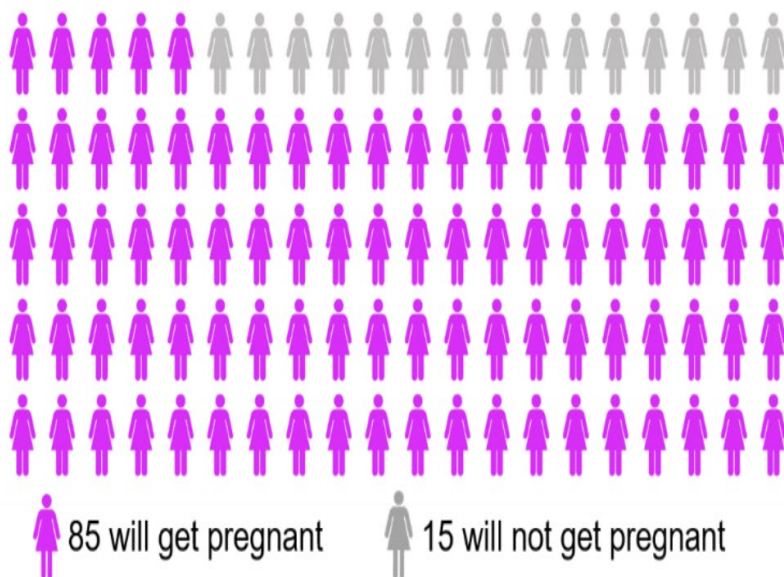
K12HS026370 NW Center of Excellence & K12 in Patient Centered Learning Health Systems 2018-2023

P30HS029762 Massachusetts Institute for Equity-focused Learning Health System Science 2023-2028

# Impact of Engaging Community

## Pre-Partnering



Number of sexually active women who will get pregnant in 1 year using no birth control<sup>127</sup>

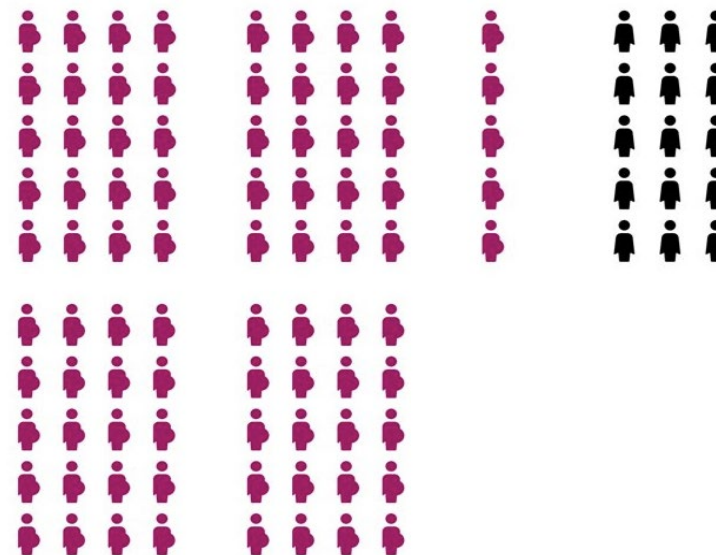


## Post-Partnering

Over the next year, if 100 women

- are sexually active and
- do not use birth control

85 will get pregnant   
15 will not get pregnant 



NICHD R01 HD105655 (Horner-Johnson) Understanding and Supporting Reproductive Decision-Making Among Women with Developmental Disabilities that Affect Cognition

## Advantages of virtual environments

- Allowed geographically diversity
- Allows people to participate without having to take time to travel, find parking, childcare, worries about accessibility of the area
- Helpful for community partners to be able to use chat instead or in addition to speaking
- Live transcription/captioning for people who don't process spoken information as easily

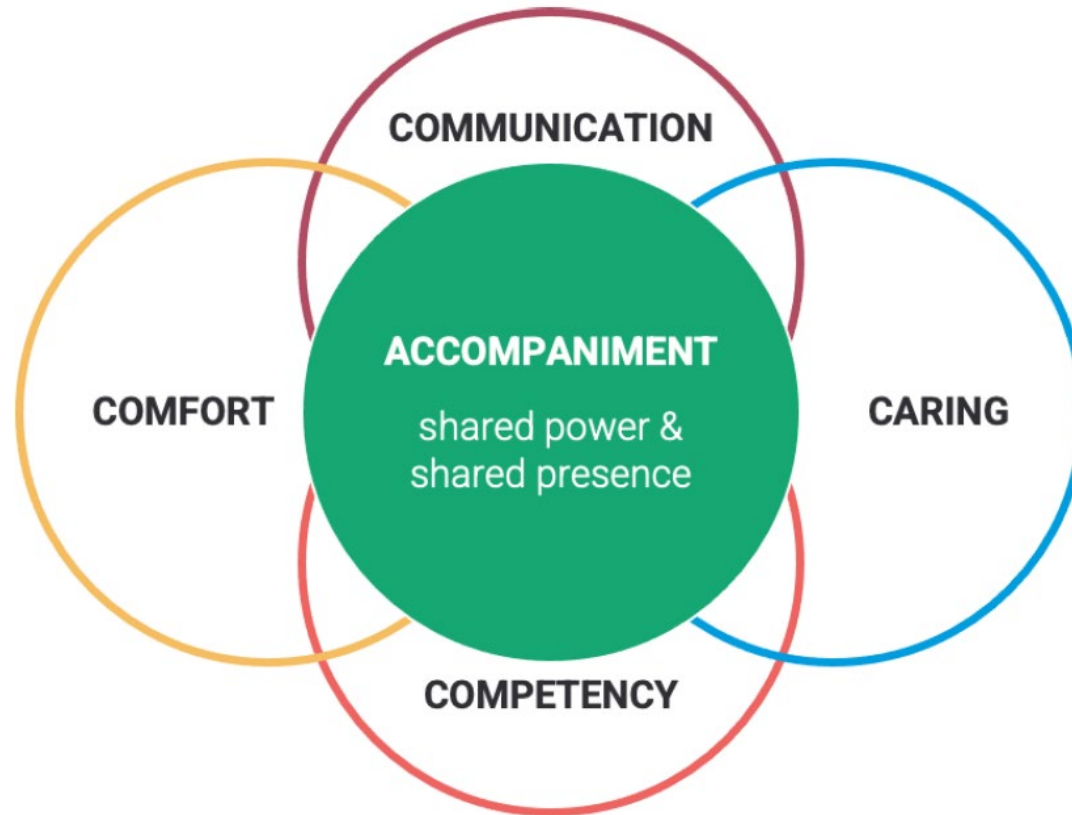
## Best Practices

- Establish group practices– cameras on/off, voting/consensus approach
- Mindful of visibility – Use of large font
- Community chair
- Materials in advance

NICHD R01 HD105655 (Horner-Johnson) Understanding and Supporting Reproductive Decision-Making Among Women with Developmental Disabilities that Affect Cognition

# Expanding Teams Around Language Expands Thought & Innovation

## Figure 1. Trust Dimensions during Pregnancy Care



Molina R et al. Exploring Patient-Clinician Trust during Pregnancy Care: A Qualitative Study with Latine Patients. *Obstetrics & Gynecology Open* (in press)

# Looking to the Future: Rethinking Publications and Products

Accompaniment	
<i>Entonces como el ir un poco más allá de lo que en realidad solo necesitas como mujer embarazada. Porque hay muchas cosas que te pueden ayudar en ese proceso y sí, te dan mucha información y te dicen 'Mira esto es' y te entregan un folleto y te dicen 'Aquí está todo' y ya. Pero en realidad se trata de ese acompañamiento que tu sientas.</i>	So, it's about going a little beyond what you actually just need as a pregnant woman. Because there are many things that can help you in that process, and yes, they give you a lot of information like 'look, this is it,' and they hand you a brochure, and okay, here's everything. But actually, it's about that support that you feel.
<i>No es crear una relación y que va a ser tu mejor amigo, pero sí, que tú puedas tener esa relación, porque al final es la persona que te va a estar acompañando durante nueve meses, entonces tú necesitas como crear esa cercanía. Es importante poder llamarlo inmediatamente, sea por WhatsApp, o por tal vez un correo electrónico o que te responda inmediato la llamada.</i>	It's not about creating a relationship as if they're going to be your best friend, but yes, you should be able to have that relationship because, in the end, that is the person who will be accompanying you for nine months. So, you need to establish that closeness. It's important to be able to call them immediately, whether it is through WhatsApp, email, or getting an immediate response to a phone call.
Competency	

Molina R et al. Exploring Patient-Clinician Trust during Pregnancy Care: A Qualitative Study with Latine Patients. Obstetrics & Gynecology Open (in press)

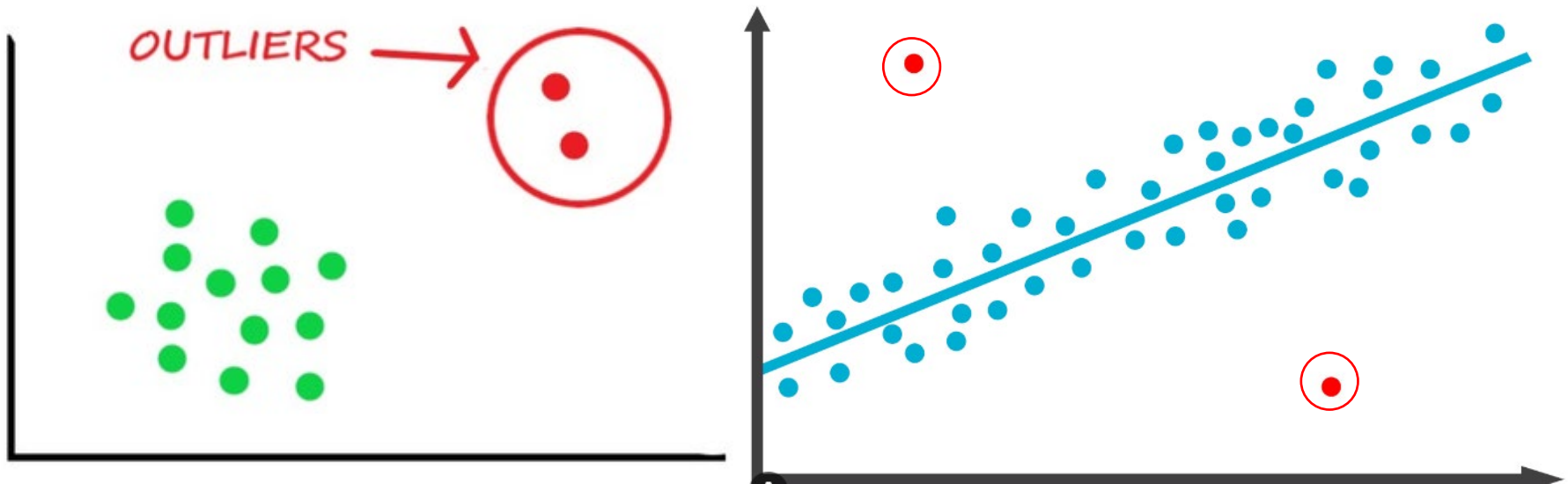


# Mass EQLHS Activities & Trainings to Enhance Future Team Science



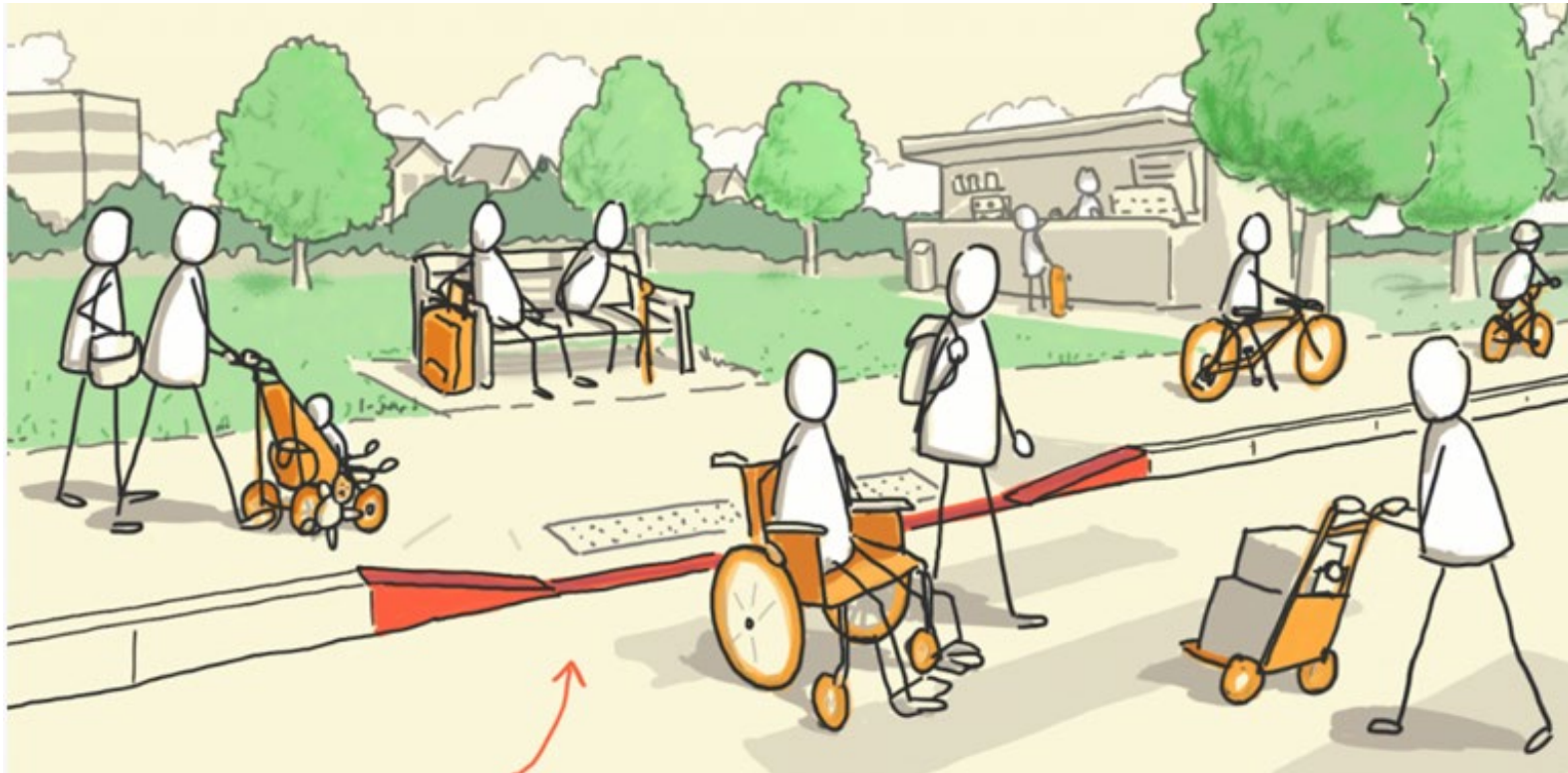
AHRQ P30HS029762 Massachusetts Institute for  
Equity-focused Learning Health System Science

# Human Centered Design: Going Beyond the “Average”



<https://ouzhang.me/blog/outlier-series/outliers-part1/>

# Human Centered Design: An Approach that Promotes Integration of DEIA



<https://designmattersplus.io/designing-for-the-outliers-means-designing-for-all/>

# Mass EQLHS New Trainings to Enhance Future Team Science




## Human Centered Design

- Expanding the scope
- Empathy mapping
- Personas
- Co-develop
- Prototype
- Test

# Increasing the Diversity of the Next Generation of Researchers

- Inspiring next generations
- Expanding the pipeline
- New types of competencies & skills



Mentored scholarly project  
Accepted into MPH program 2024

PAS Health Equity Research Award

Contract for transcription & translation, manuscript co-author; applying to medical school 2025

MA applying to medical school 2024; manuscript co-author

Returning as RA 2024

Stayed on as paid RA (Project MATH)

2021 team

2022 summer intern

2023 summer intern