



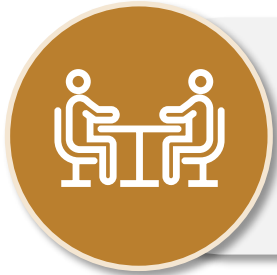
National Advisory Environmental Health Sciences Council September 2024

David Balshaw, Ph.D.
Director, Division of Extramural Research and Training
National Institute of Environmental Health Sciences

Presentation Overview



Staffing Updates



DERT Activities



**NIEHS 2018-2023 Strategic Plan:
DERT Accomplishments**

DETR Staffing Updates



Sadichha Sitaula, Ph.D.

Program Officer, Exposure, Response, and Technology Branch



Role in DERT

- Program development for environmental cardiopulmonary and inflammation resolution biology.

Work in the Pharmaceutical Sector

- Focused on cardiovascular disease at AstraZeneca and later at the biotech startup Asteroid Therapeutics.

Research

- Earned her Ph.D. from Scripps Research Institute.
- Studied the role of REV-ERB nuclear receptors in atherosclerosis.
- Developed small molecule compounds to suppress cholesterol biosynthesis and inflammasome activation.

Tracie McGraw

Grants Management Specialist, Grants Management Branch



Role in DERT

- Manages a portfolio that encompasses most NIEHS funding mechanisms.

NIH Experience

- Served as an NIH grants management specialist since 2011 at NCI, NIDDK, and NIA.
- Budget analyst at the NIH Office of the Director.



DERT Activities



DERT Activities: Summer and Fall 2024



**GEOHealth
Grantee Meeting**
June 6-7



**Workshop:
Web-Based Tool for
Autism Research &
the Environment
(aWARE)**
Sept 5-6



**Children's Research
and Translation
Centers Meeting**
Sept 16-17



**WTP Fall Awardee
Meeting and
Workshop**
Oct 22-24

June

August

September

October

November



**NASEM
RNA & the
Bioeconomy
Roundtable**
Aug 20



**WTP Disaster
Supplement
Awardee Meeting**
Sept 4-5



**EHS Core
Centers
Meeting**
Sept 23-25



**SRP Lead
Technology
Fair**
Oct 28 (virtual)



**SRP Risk
e-Learning
Webinars**
Fall 2024 (TBD)



The NIEHS 2018-2023 Strategic Plan: DERT Accomplishments



The NIEHS Strategic Plan Guides All DERT Activities



NIEHS Strategic Plan 2018-2023 Themes



Theme 1: Advancing Environmental Health Sciences



Theme 2: Promoting Translation – Data to Knowledge to Action



Theme 3: Enhancing EHS Through Stewardship and Support



DETR NOFOs: An Overview by Strategic Plan Theme and Goal



The Strategic Plan: Select Accomplishments by Theme

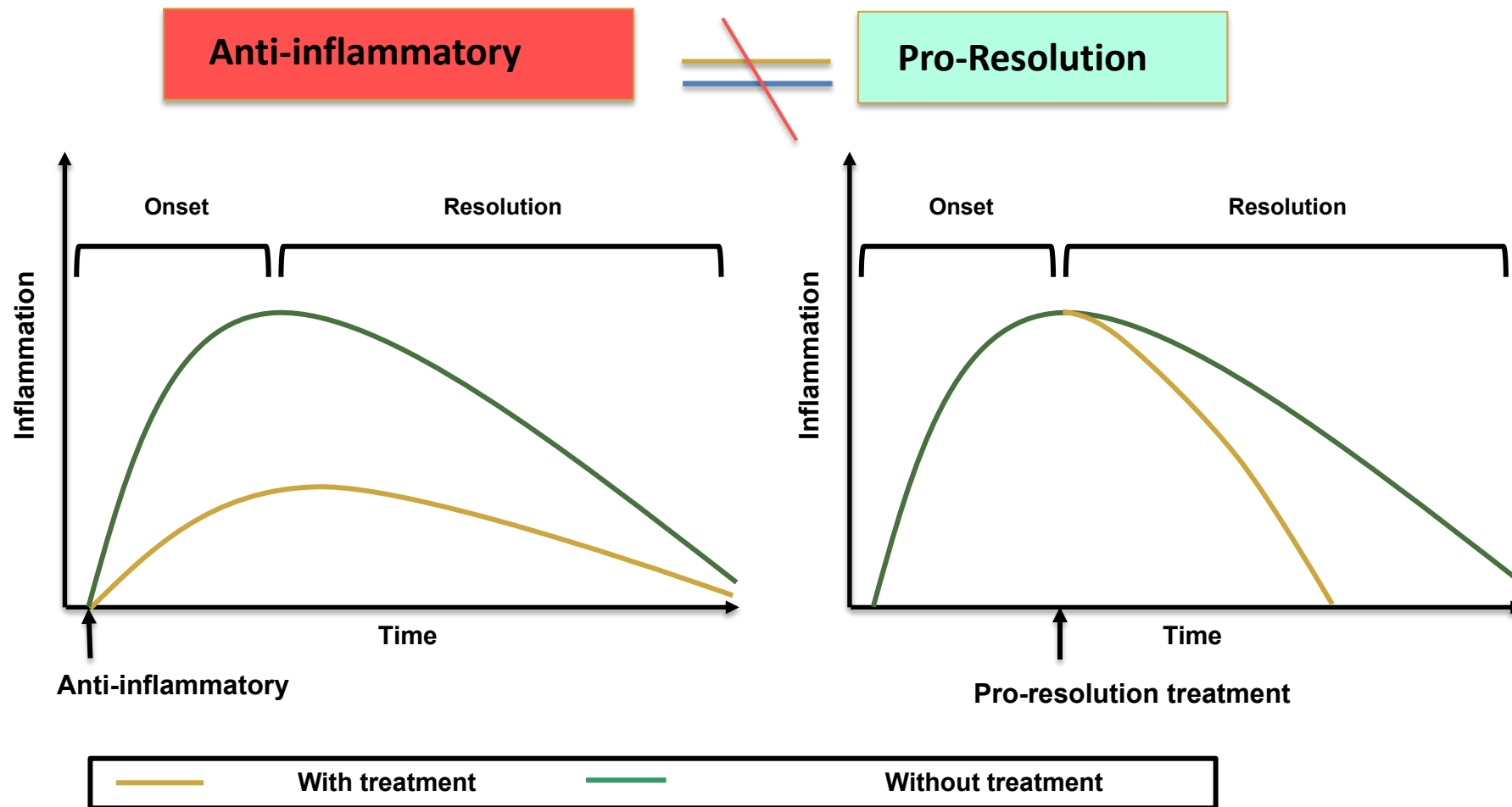








Theme 1: Advancing EHS

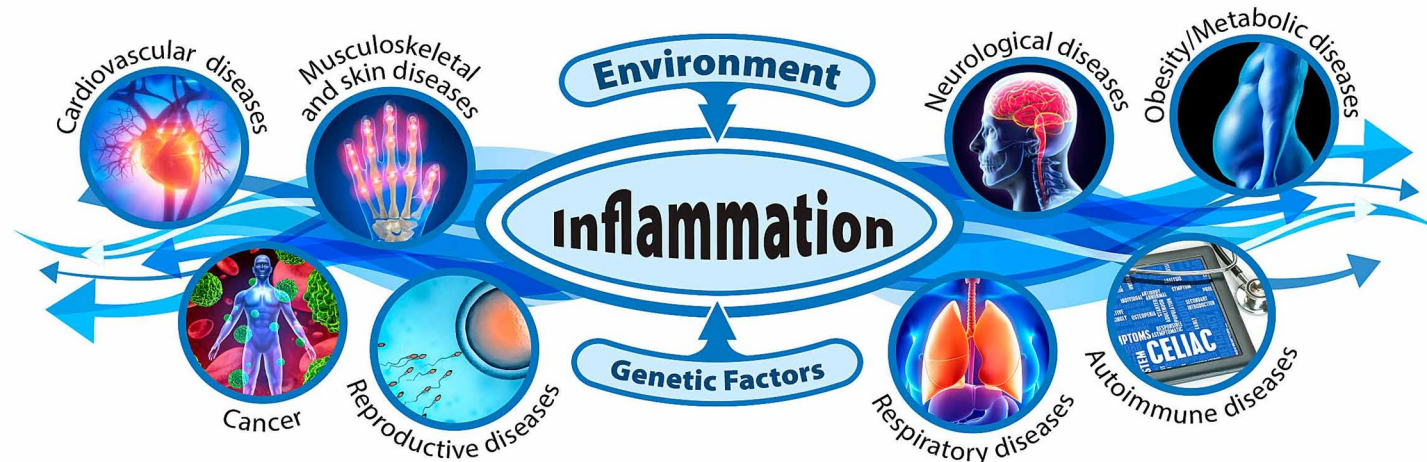


Paradigm Shifts to New Pro-Resolution Targets






Exploring the Impact of Environment on Inflammation Resolution



-   **Inflammation Resolution Biology Workshop and NOSI** (2019, NIH-wide)
-  **2020 RFA: RESolution of Inflammation in EnvirOnmentally Related disease (RESTORE)**
-  **DERT publication: Inflammation resolution and chronic environmental lung diseases** (*Marzec and Nadadur, Toxicol Appl Pharmacol, 2022*)

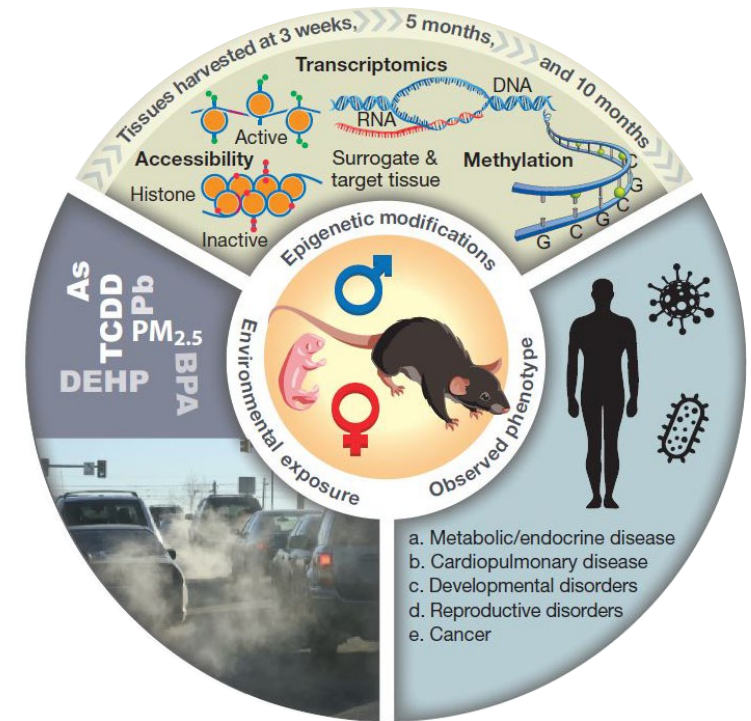


Expanding Epigenetics and Epitranscriptomics Research

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Funding TaRGET II to advance environmental epigenetics and develop a data resource for the scientific community

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Funding epitranscriptomics research – since 2017, the DERT epitranscriptomics portfolio has grown from 0 to 38 active grants

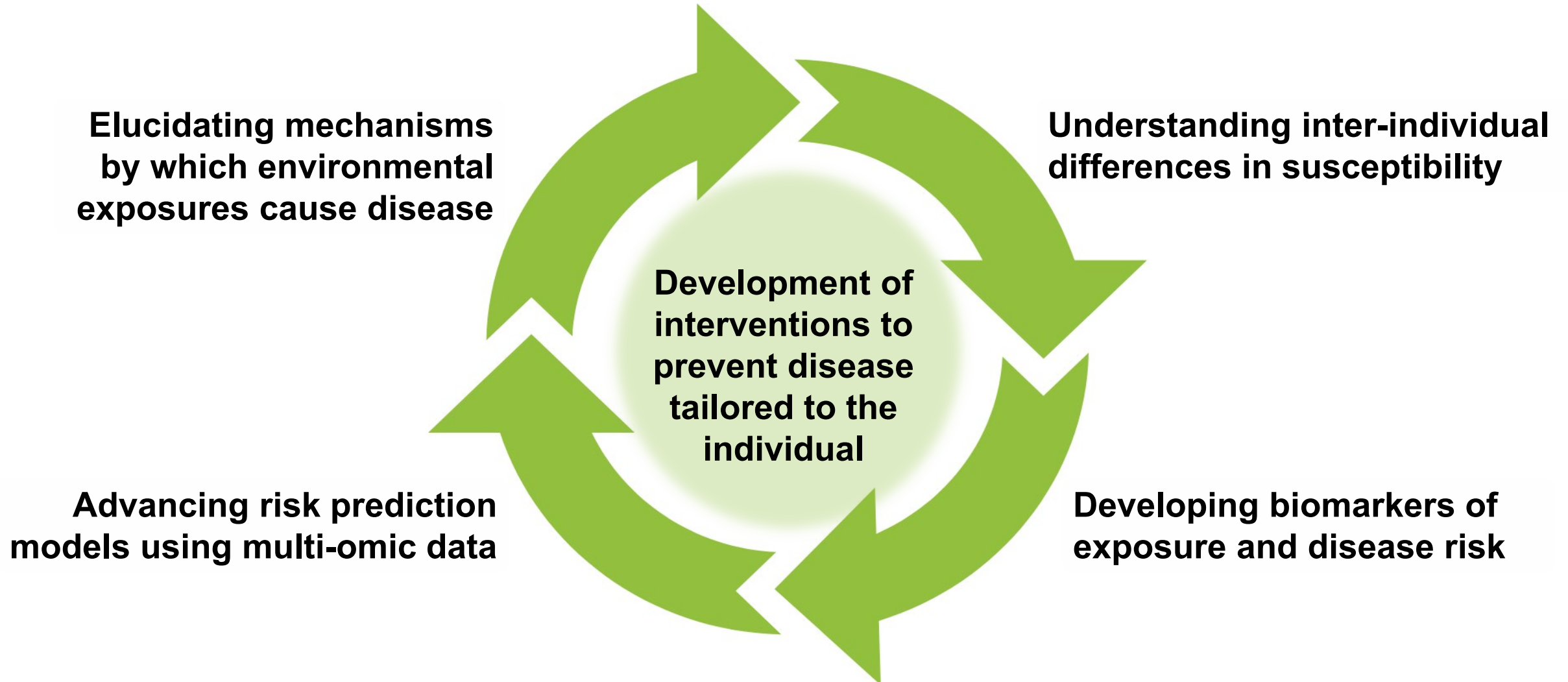
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Partnering with NHGRI to accelerate epitranscriptomics innovation and discoveries



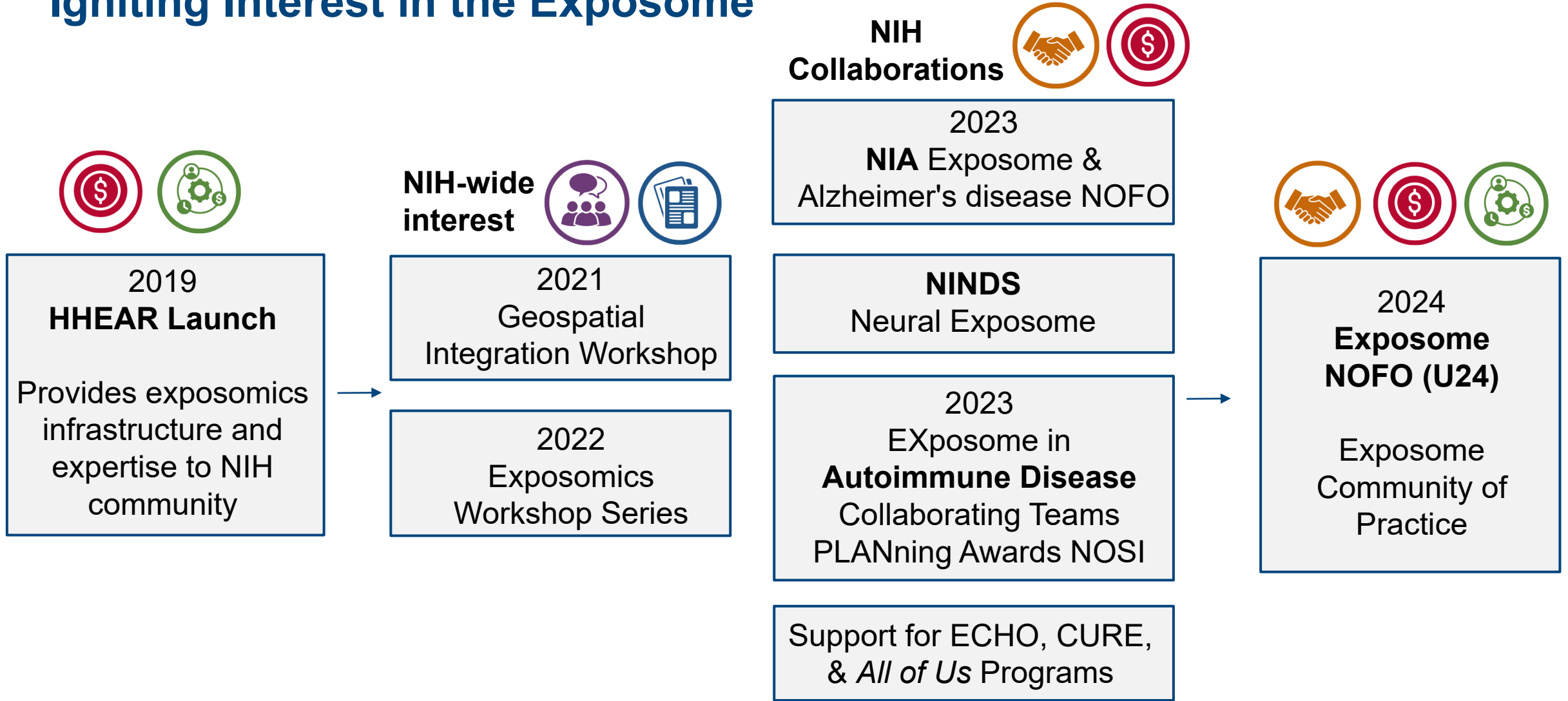
TaRGET II summary diagram
Wang et al., Nat Biotech, 2018

DNA and RNA modification data provide a springboard for developing personalized disease prevention strategies.

Precision Environmental Health



Igniting Interest in the Exposome



Making Environmental Health Data FAIR



SRP funded 19 collaborative projects to enhance data integration, interoperability, and reuse (2019)



Workshop and commentary examined integrating multiscale **geospatial data** into large population health studies (Cui et al., Toxics, 2022)



Workshop explored integrating the environment into *All of Us* (2022)



New funding opportunity to accelerate EHS data and metadata standards and create data resources for the research community (2023)



Cohort Maintenance Programs (U24) require interoperability of epidemiological data





Theme 2: Promoting Translation – Data to Knowledge to Action



Promoting Translational Research

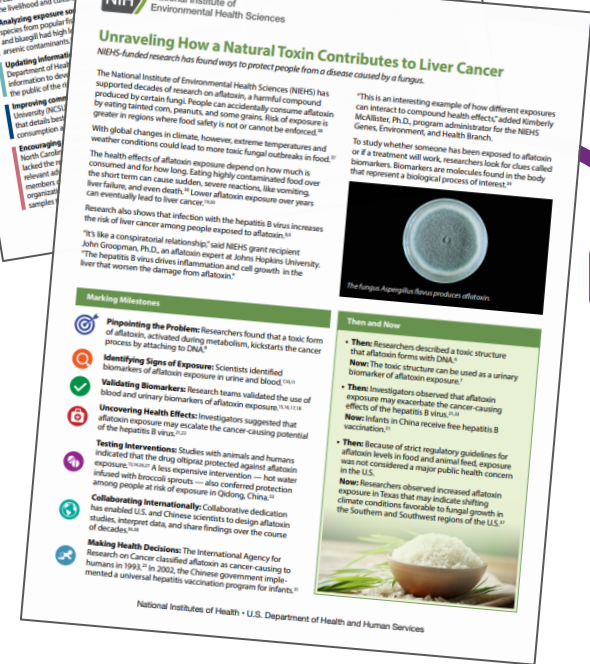
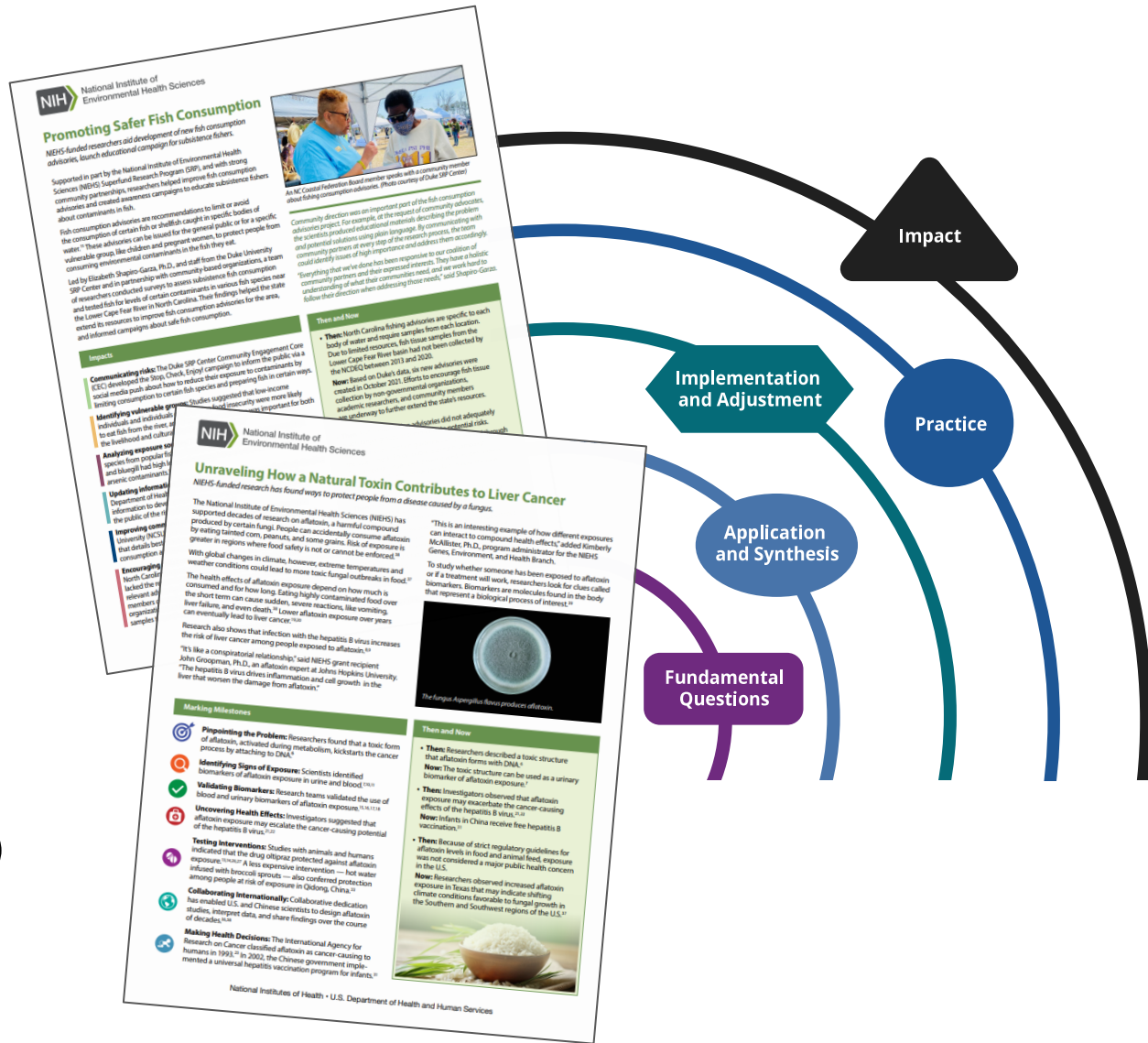


Developed the NIEHS Translational Research Framework and case studies



Center programs emphasize translational research

- Collaborative Centers in Children’s Environmental Health Research and Translation (2020 RFA)
- EHS Core Centers Translational Research Cores (new 2022 requirement)
- SRP Community Engagement and Research Translation Cores



Informing PFAS Drinking Water Advisories, Clinical Guidelines



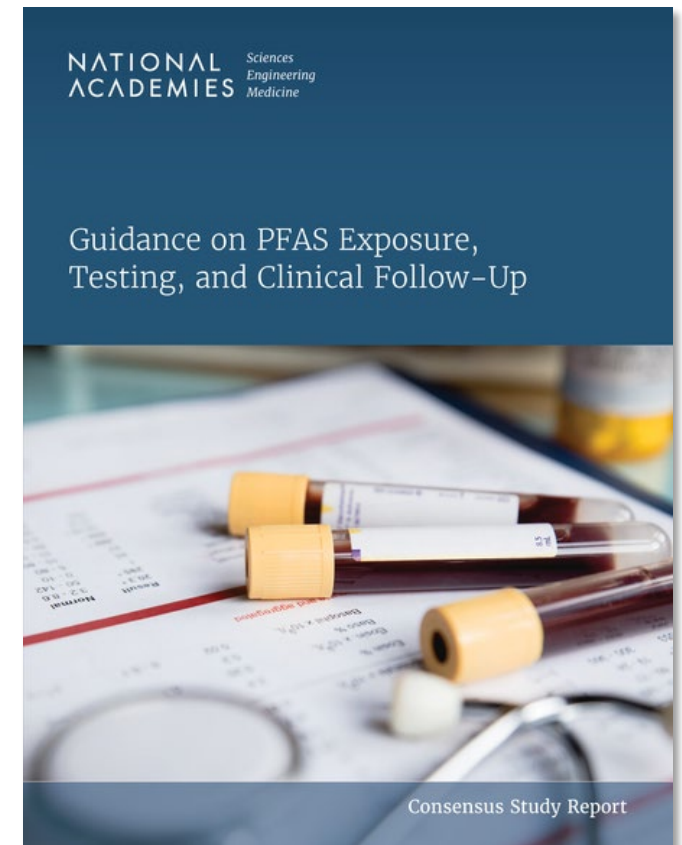
Informing Drinking Water Advisories

- Immunotoxicity research informed EPA's 2022 drinking water advisories for PFOA and PFOS
- NIEHS supported researchers served on EPA's review panel



Addressing Clinical Gaps

- NIEHS supported researchers served on the NASEM expert committee, review panel, and as community liaisons
- Leaned heavily on NIEHS-funded studies



Supporting Community-Engaged Research



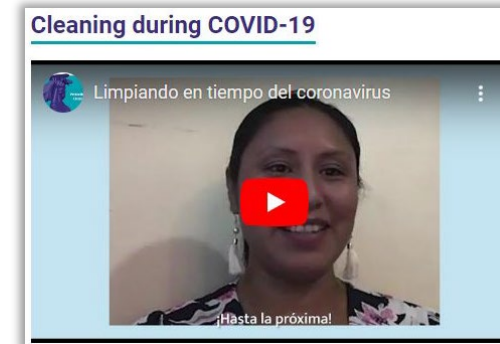
Research to Action Program

- Community-university partnership
- Research is informed by community concerns
- Teams create a public health action plan based on research findings



Safe and Just Cleaners | Limpieza Sana y Justa

- **Surveyed 402 Latinx household cleaners** about their use, knowledge, and attitudes of chemicals in cleaning products
- Examined the **impact of COVID-19**, finding that cleaners used more disinfectants during the pandemic
- Developed **culturally appropriate public health campaign** about safer alternatives to toxic cleaning products



Commitment to Returning Research Results



PEPH Meeting: Reporting Back Research Results (2019)



NIEHS Council Discussion (2022)



NIEHS/NHGRI Workshop: Gene-Environment Interactions Ethical, Legal, Social Implications (2022)



New funding opportunity: Strategies for Responsibly Reporting Back Environmental Health and Non-Genomic Research Results (2023; NIEHS/NHGRI/OSP)

“People do use our results – they use them to make personal choices about their lifestyles.”
— Julia Brody, Ph.D.



Research Report Back Portfolio: An Overview

Exposures: Wastewater treatment, personal care products, household exposures, pesticides

Audiences: Tribal populations, Black and Hispanic women, rural and urban communities, family childcare facility owners

Outputs:

- Guidelines, toolkits, educational resources
- Capacity building for environmental counselors
- Evidence-based recommendations and best practices for dissemination



Engaging in NIH-Wide Climate Change and Health Initiative (CCHI)

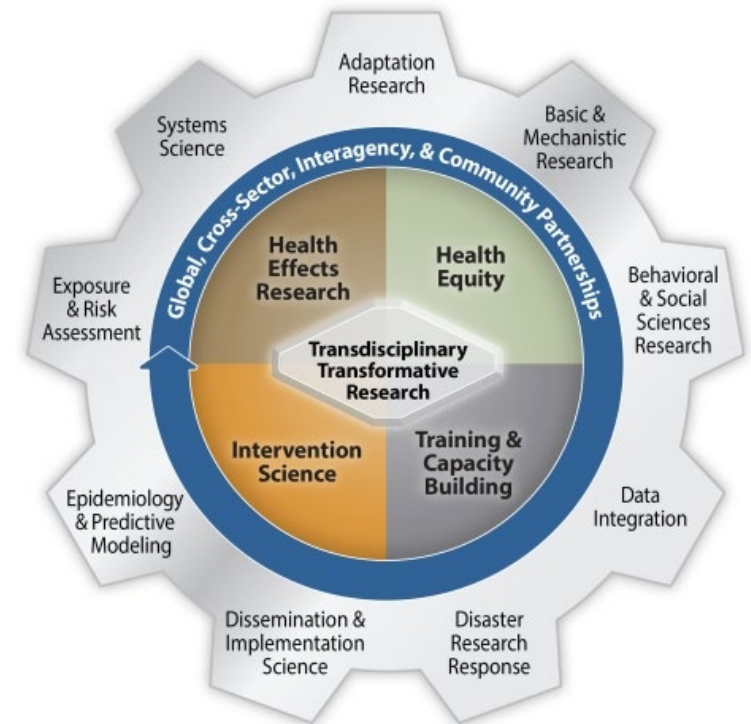


Serving on the **CCHI Steering Committee** and **Working Group**



Helping develop and fund **CCHI NOFOs**:

- Exploratory Centers for Climate Change (P20)
- CCHI Research Coordinating Center (U24)
- NOSI for Innovative Technologies for Research on Climate Change and Human Health (R43/44)
- NOSI for Climate Change and Health



Of the 546 grants in the CCHI portfolio through FY23, more than half (228) are funded by NIEHS.

NIEHS Events and Tools on Climate Change and Health



Hosting a PEPH network meeting focused on climate change and environmental justice (2024)

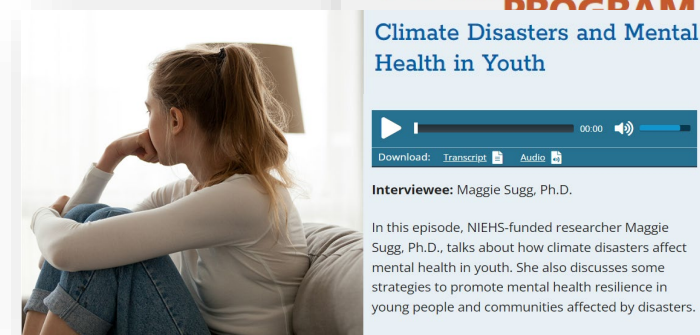
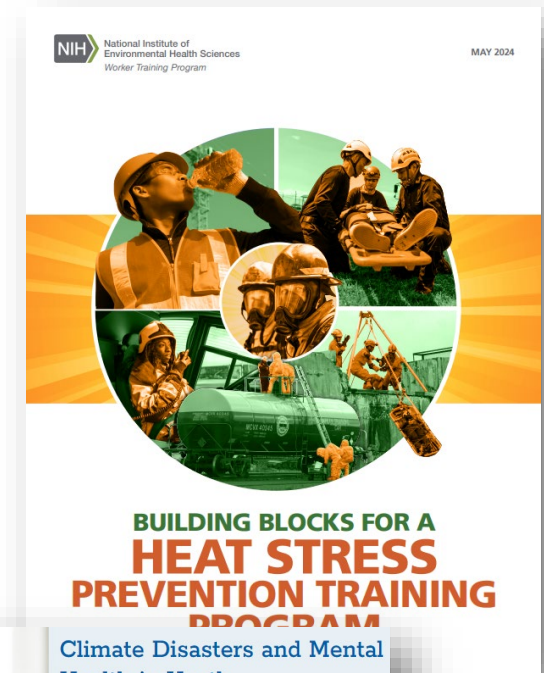


Developing a Heat Stress Prevention Training Program for WTP awardees, partners



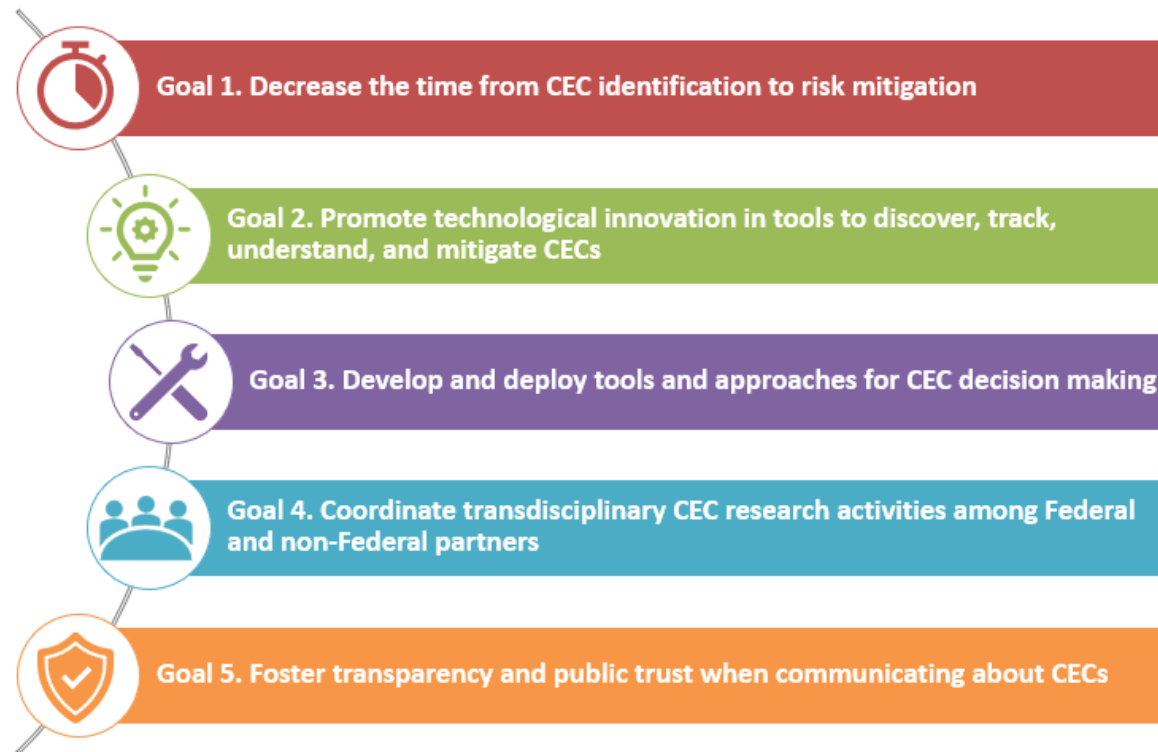
Creating podcasts as communication tools

- Global Climate Change and Cancer Care
- Climate Disasters and Mental Health in Youth
- Heat Stress and Worker Health
- Disaster Research Response Program Marks 10 Years



Contaminants of Emerging Concern (CECs) National Emerging Contaminants Research Initiative (NECRI)

Vision: Access to clean and plentiful drinking water for every person in our Nation



Responding to Emerging EH Issues: East Palestine Train Derailment



Participated in NASEM virtual workshop



Awarded six time-sensitive R21 awards

- Measuring air pollutants (VOCs, dioxins)
- Analyzing chemicals in water, sediment, and soil (dioxins, furans, PCBs, PAHs)
- Collecting biological samples, interviews, and surveys
- Engaging with community members and local agencies to learn about concerns and report results



Responding to Emerging EH Issues: Micro- and Nanoplastics



NIEHS and NSF Oceans and Human Health Center focused on plastic pollution, microplastics, and climate change



Supporting SBIR technologies. Researchers developed and are commercializing “microslit filters” to capture and analyze microplastics



Released a NOSI to promote research exploring the health effects of micro- and nanoplastics



NIEHS podcast on microplastic pollution and human health



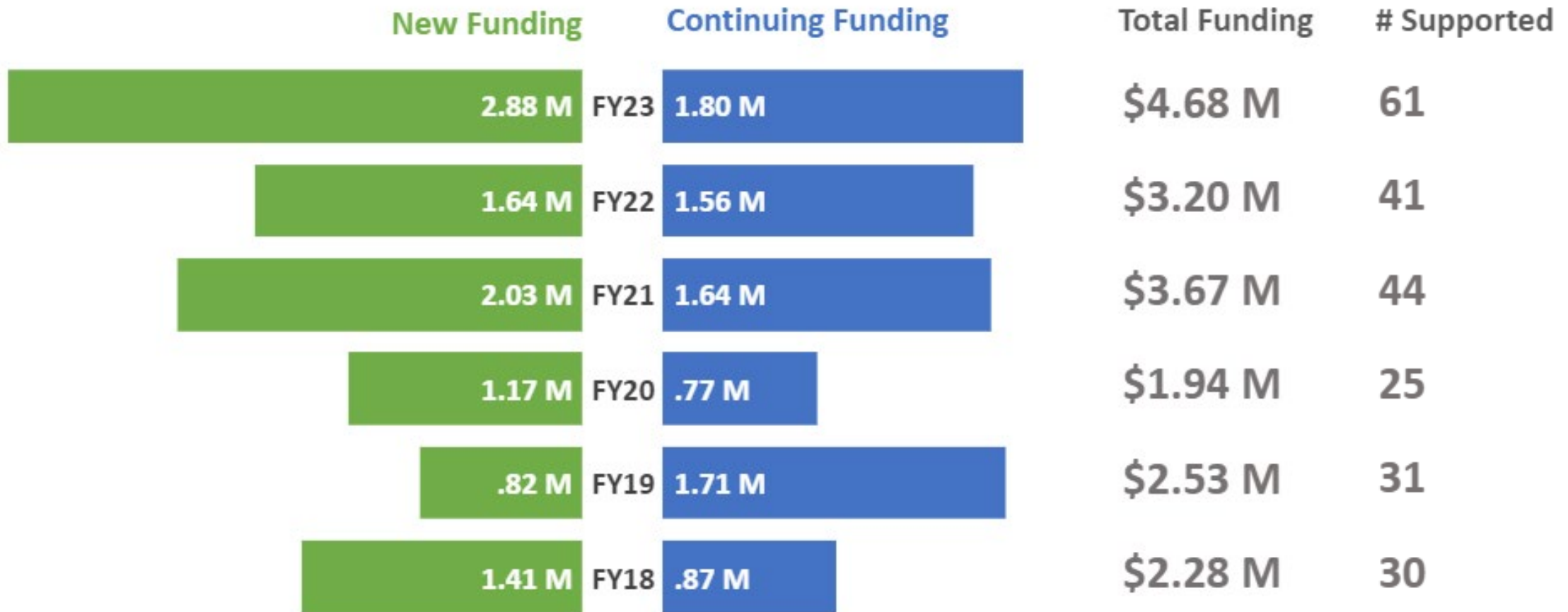


Theme 3: Enhancing EHS Through Stewardship and Support



Creating a Diverse Research Workforce

Funding for Diversity Supplement Scholars more than doubled from 2018-2024



Supporting a Diverse Research Workforce



Creating the **Diverse Researcher's Integrated Virtual Engagement Network (DRIVEN!)** (2021)



Hosting **listening sessions** and developing a newsletter for students and scientists from **HBCUs and MSIs** (2021)



Incorporating workforce and scientific diversity into the **U24 cohort maintenance program** (2022)



Continued support for the **R25 UP program**, which encourages undergraduates from underrepresented backgrounds to pursue EHS



Building a Diverse and Skilled Workforce

WTP awardees are delivering training to:

- **Empower women** in construction trades
- **Build capacity with American Indian and Alaska Native Tribes** to handle hazardous materials and respond to emergencies
- **Build capacity** for workers to handle issues related to new hazards, technologies (e.g., lithium-ion batteries)
- **Create jobs** for communities facing disadvantage due to health, socioeconomic, and environmental burdens



Evaluating Program Impacts



Evaluation of the **Environmental Career Worker Training Program** explored the impact of workforce development in disadvantaged communities, finding that technical and life skills training leads to:

- Improved employment, earnings, and quality of life for graduates
- Costs savings related to safety, hiring, and crime



The ECWTP was selected for the **White House Justice40 Initiative** in 2022, making it **1 of 13 HHS programs** selected for the initiative.

Stepping Stones Towards the Future





Thank you for your attention!

Questions?





Extra slides



Diana Rohlman
Translating Research to Action and Knowledge Portal: Web-based platform for RBRR (OR & NY)

Darrah Sleeth
Evaluation of Report-back Strategies for Exposure Information in Rural Tribal Populations (UT & WY)

Katrina Korfmacher
Collaborative Development of Ethical Report-back Guidelines for Household Exposure Research (Rochester, NY)



Ami Zota
Reframing Personal and Community Report-Back of Consumer Products by Centering Intersectionality (CA & NY)

Julia Brody
From the Cell to the Street: Personalized Report-Back in Large Cohort Studies with Multi-Level Measurements (CA & IL)



Monica Ramirez-Andreotta
Disentangling the Role of Culture, Life Stage, and Information Design to Facilitate Equity in Data Report-Back (AZ & OH)

Abbey Alkon
Best Practices to Return Results about Pesticide Exposures in Family Child Care Homes (Central Valley, CA)

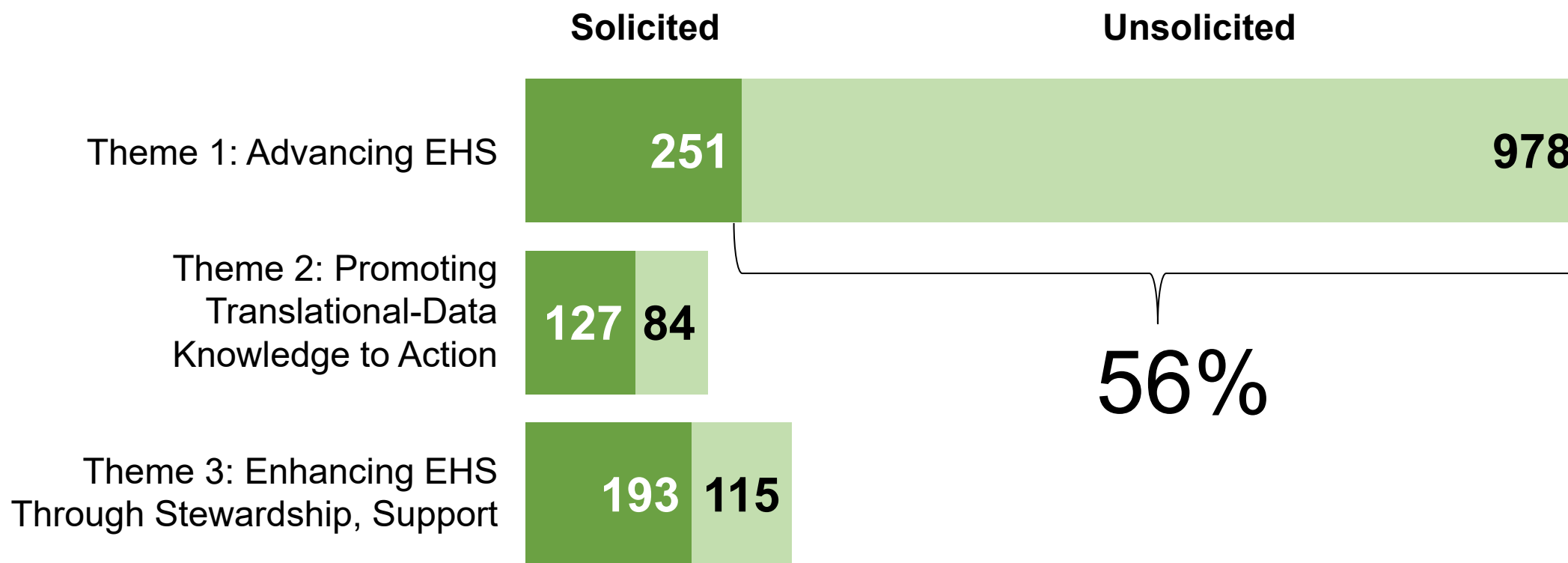


Amy McGuire
Engaging Community Members to Plan for Dissemination of Wastewater Epidemiology Results (TX)



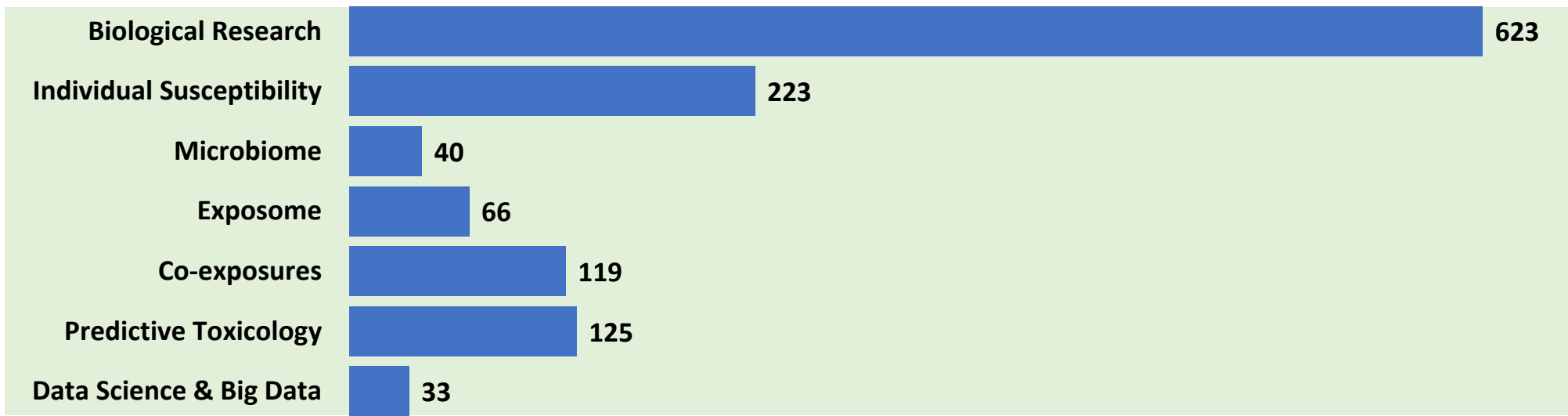
More than half of NIEHS grants funded addressed goals in Theme 1

- NIEHS funded **1,748** competing parent grants from 2018-2023.
- Grants were assigned to one Strategic Plan goal using a hierarchal approach.

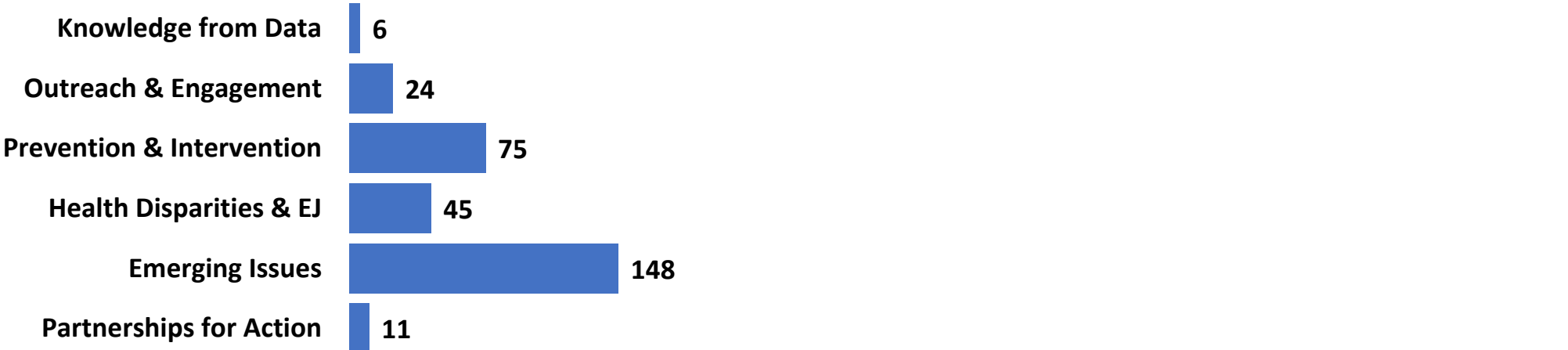


Strategic Plan Goals Funded Grants 2018-2023

Theme 1: Research



Theme 2: Translation



Theme 3: Stewardship

