Environmental influences on Child Health Outcomes (ECHO) Program

Funding Opportunity Announcements Webinar

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ECHO Program: Overview

- **Overarching Goal**
  - Investigate the longitudinal impact of pre-, peri-, and postnatal environmental exposures on pediatric development and health outcomes with high public health impact through leverage of extant cohorts and other available resources

- **Core Elements to be Collected From all Participants**
  - Demographics
  - Typical early health and development descriptors
    - Optional Sub-Element: Microbiome
  - Genetic influences on early childhood health and development
    - Optional Sub-Element: Epigenetics
  - Environmental exposures (e.g., behavioral, biological, chemical, social)
  - Patient/Person (parent and child) Reported Outcomes (PROs)
ECHO Plan: Overview (cont’d)

- Pediatric Health Outcome Focus Areas
  - Upper and lower airway
  - Obesity
  - Pre-, peri-, and postnatal outcomes
  - Neurodevelopment

- Additional Opportunity
  - Create an IDeA States Pediatric Clinical Trials Network
    - Address access gaps for rural and medically underserved children through a national network for pediatric research embedded at IDeA locations
    - Link institutions in IDeA states with experts in clinical trials
ECHO Plan: Potential Research Questions that Could be Addressed

- What are the specific relative contributions of genetic and environmental (behavioral, biological, chemical, social, etc.) influences on child health?
- What factors render individuals or populations subjected to the same exposures as resilient or susceptible to disease? Do these differ over time, and by sex/gender, race/ethnicity, and/or SES?
- What are the inflection points at which the body’s normal physiologic homeostasis becomes dysregulated, leading to chronic disease(s)?
- What are the molecular and behavioral mechanisms involved in maintaining a healthy weight across the lifespan?
- What are the genetic, biomarker, and environmental predictors of risk for the key focus areas of childhood outcomes?
ECHO Program Elements

- Pediatric Cohorts
- Coordinating Center (CC)
- Data Analysis Center (DAC)
- PRO Core – leveraging PEPR (started in FY15 with NCS funds)
- CHEAR Core – leveraging CHEAR (started in FY15 with NCS funds)
- Genetics Core (FY17)
- IDeA States Pediatric Clinical Trials Network
  - IDeA Clinical Sites
  - IDeA Data Coordinating and Operations Center (DCOC)
ECHO Program Element: Pediatric Cohorts [RFA-OD-16-004]

- Characteristics of cohorts (not limited to):
  - Cohorts initiated in pregnancy or post-partum that continue to follow offspring outcomes
  - Cohorts that ended data collection on pregnant women and offspring, but can demonstrate the capability to recontact
  - Cohorts that are currently recruiting and/or assessing pregnant or post-partum women and their offspring

- Additional items that may be considered by applicants:
  - Electronic Health Records are encouraged, but not required
  - Basic mechanistic studies that can only be done using extant pediatric cohorts are encouraged

- Two phases: UG3/UH3

- Anticipated Combined Cohort Size: ~50,000
ECHO Program Element: Coordinating Center [RFA-OD-16-006]

- Responsible for:
  - Administrative coordination, training, and communication
  - Developing standard Core Elements
  - Coordinating statistical analysis with DAC/CHEAR/PRO Cores
  - Assisting DAC administratively
  - Developing and implementing policies (e.g., data sharing)
  - Coordinating with existing bio-repositories
  - Administering the Opportunities and Infrastructure Fund
  - Coordinating the functions of the Steering Committee and the External Scientific Board

- 4 Components

- Applicants are encouraged to apply for the CC and DAC
ECHO Program Element: Data Analysis Center [RFA-OD-16-005]

- Responsible for:
  - Developing and applying novel analytic methods for combining and analyzing existing and new longitudinal data from disparate extant cohorts
  - Data quality control and assurance, and validation
  - Conducting multi-level analyses on pooled consortium data
  - Bioinformatics and statistical analysis with the help of the CC to coordinate with the CHEAR, PRO, and Genetics Cores
  - Building and maintaining data dictionaries and databases
  - Developing a data sharing, security, and dissemination plan
  - Applicants are encouraged to apply for the CC and DAC
ECHO Program Element: PRO Core
[RFA-OD-16-003]

- Responsible for:
  - Providing expertise in selecting, developing, and validating child PROs (cPROs)
  - Updating existing and validating emerging cPROs
  - Assisting with the incorporation of cPROs into study design (i.e., Core Elements)
  - Coordinating the mode of administration
  - Performing initial quality control and assessment of cPRO data
  - Assisting the DAC with cPRO data analysis, where applicable
  - Integrating Validation of Pediatric Patient Reported Outcomes in Chronic Diseases (PEPR) derived knowledge and resources with the ECHO PRO Core
ECHO Program Element: CHEAR Core [PA-16-046]

- Expand upon an existing resource – Children’s Health Exposure Analysis Resource (CHEAR)
  - Network of laboratory hubs supporting comprehensive exposure analysis of biological samples

- Responsible for:
  - Conducting targeted and untargeted analysis of stored and prospectively collected biological samples
  - Providing statistical and data flow support and coordination with the DAC
  - Assisting with the incorporation of exposure assessment into study design (i.e., Core Elements)
  - Coordinating workflow with the CC and DAC

- Use strongly encouraged, but standardized methods will be required

- Very low cost or free to ECHO investigators
ECHO Program Element: Genetics Core

- Responsible for:
  - Coordinating the standardized collection and measurement of genetic samples for SNP-chip analysis through state-of-the-art techniques
  - Collaborating with the CC and DAC on data workflow
  - To be released in FY17
ECHO Program Element: IDeA Clinical Sites and DCOC [RFA-OD-16-001/002]

IDeA Clinical Sites
- Expand pediatric clinical trials initiated by other entities
- Studies initiated within the Network are encouraged
- Local teams will receive training on conducting trials
- Open to organizations in IDeA states

IDeA DCOC
- Point of contact, and oversight and training responsibilities
- Function as an informatics, data coordinating, and operations center for clinical trial implementation
- Funding for capitation fees and expenses
- Steering Committee
- Open to organizations with a partner in an IDeA state
ECHO Program Elements: IDeA States Pediatric Clinical Trials Network

- Linkage to ECHO
  - Prioritize research investigating the four ECHO Focus Areas
  - Prospective data collection encouraged to address the ECHO Core Elements
  - Representatives on ECHO Steering Committee and subcommittees
Structure and Governance

NIH Director

Steering Committee Leadership

NIH ECHO Program Director

Coordinating Center PD/PI

Data Analysis Center PD/PI

ECHO Program Team

SC Executive Committee

Steering Committee (SC)

Data Analysis Center

CHEAR

Genetics Core

PRO Core

Coordinating Center

Cohort Sites

IDEA States Network

External Scientific Board
## ECHO Program Timeline

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<tr>
<th>Action</th>
<th>Timeframe</th>
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<td>Call with HHS</td>
<td>July 10th</td>
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<tr>
<td>Meet with stakeholder groups to solicit input</td>
<td>July</td>
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<td>Stakeholder Roundtables</td>
<td>July 14-15</td>
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<td>Conduct webinars</td>
<td>July 22, 27, 29</td>
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<td>Craft and analyze RFI</td>
<td>July</td>
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<td>Release/Publish RFI</td>
<td>July 13</td>
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<td>Analyze RFI</td>
<td>Early August</td>
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<tr>
<td>Craft RFA concept/plan</td>
<td>By 9/1/15</td>
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<td>Present concept for clearance by Council of Councils</td>
<td>9/1/2015</td>
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<tr>
<td>Craft FOAs</td>
<td>September - October 2015</td>
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<tr>
<td>All FOAs with OER for review</td>
<td>11/1/2015</td>
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<tr>
<td>Publish notices, if necessary</td>
<td>December-15</td>
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<td>RFAs published in the Guide</td>
<td>December 2015</td>
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<td>Letters of Intent due</td>
<td>3/15/2016</td>
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<td>Applications due</td>
<td>4/15/2016</td>
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<td>Peer review of applications</td>
<td>Summer 2016</td>
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<td>Council review of applications completed</td>
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NIH...

Turning Discovery Into Health

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Janine.Clayton@nih.gov
Development Process

ICO Working Group

- 16 ICOs with at least one representative
  - NCI, NHLBI, NIAAA, NIAID, NIAMS, NIBIB, NICHD, NIDA, NIDCR, NIDDK, NIEHS, NIGMS, NIMH, NINDS, OBSSR, ORWH

- Co-led by Dr. Lawrence Tabak, NIH Principal Deputy Director and Dr. Janine Clayton, Director, ORWH

- Helped develop the details of the plan, coordinate outreach activities, craft the FOAs, address questions from applicants
Feedback from the Community

- **Stakeholder Roundtables** – July 2015
  - Over 20 pediatric, environmental health, epidemiology, and other advocacy groups

- **Webinars (3)** – July 2015
  - ~400 participants total

- **RFI** – Closed August 2015
  - ~190 responses

- **Summary of Comments**
  - Pregnancy/prenatal time period should be a key feature
  - Include basic research and training
  - Importance of standardizing and harmonizing data
  - Generally positive about IDeA States network
  - Many questions on eligibility of specific cohorts
ECHO Program: Structure and Governance

- **Steering Committee Subcommittees**
  - **Data Measurement and Sharing** – cohort sites, CC, DAC, PRO Core
  - **Biostatistics and Design** – cohort sites, CC, DAC, PRO Core
  - **Publications** – cohort sites, CC, DAC, PRO Core
  - **Focus Areas** – cohort sites, CC
  - **Project Coordinators** – cohort site coordinators, CC
  - **IDeA States Network** – IDeA states sites, IDeA states DCOC, CC
ECHO Program Projected Timeline

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ECHO Program Office

- **Program Director/Office**
  - Interim Program Director – Larry Tabak, DDS, PhD
  - Interim Associate Program Director – Tara Schwetz, PhD
  - Recruiting a permanent Program Director
  - Additional program staff (analysts)