• Why and Why Now?
• Purpose of Strategic Planning
• Strategic Planning Process
• Analysis of Funding Portfolio
• Stakeholder Participation
Why have a strategic plan?
Why Have a Strategic Plan?

• Need to answer the following questions:
  • What is the identity of the Institute?
  • Do we want to continue our focus on health and development or shift our priorities to specific diseases or conditions?
  • Do we focus more on clinical, basic or translational research?
  • How do we integrate and align our broad areas of science and our many stakeholders?
## Why Now? NICHD Strategic Planning and Visioning History

<table>
<thead>
<tr>
<th>Year Published</th>
<th>2000</th>
<th>2012</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Strategic Plan for NICHD</td>
<td>Vision for the field</td>
<td>Strategic Plan for NICHD</td>
</tr>
<tr>
<td><strong>Document organization</strong></td>
<td>Summary document and individual documents for topical themes</td>
<td>Summary document White papers</td>
<td>Summary document</td>
</tr>
<tr>
<td><strong>Level of specificity</strong></td>
<td>Specific NICHD-focused objectives and implementation steps (via thematic plans)</td>
<td>Defined gaps &amp; priorities for the fields NICHD represents</td>
<td>Specific NICHD-focused objectives</td>
</tr>
<tr>
<td><strong>Internal/external participation</strong></td>
<td>Mostly internal, some external</td>
<td>Mostly external</td>
<td>Mix of internal and external</td>
</tr>
</tbody>
</table>

Advances in technology, genetics, and techniques are changing science rapidly.

The Institute needs to determine what types of funding, training, and infrastructure are needed in response to change.
Why Now? Increases in Budget

Note: Figures do not include ARRA funding.
Why Now? Alignment Across NICHD and NIH
Why Now? Legislative Mandates

21st Century Cures Act

SEC. 2031. NATIONAL INSTITUTES OF HEALTH STRATEGIC PLAN

• Section 402(m) of the PHS Act: Strategic plans developed and updated by the national research institutes and national centers of the National Institutes of Health shall be prepared regularly and in such a manner that such plans will be informed by the strategic plans developed and updated under this subsection. Such plans developed by and updated by the national research institutes and national centers shall have a common template.
Select Congressional Mandates and NICHD Research

- Autism
- Birth defects/congenital anomalies
- Contraception and infertility
- Down syndrome
- Fragile X
- Intellectual and developmental disabilities
- Intramural obstetrics-gynecology research
- Medical rehabilitation
- Muscular dystrophy
- Newborn screening
- Pediatric pharmacology
- Pediatric research training
- Population health
- Prevention research
- Sudden Infant Death Syndrome (SIDS)

https://www.nichd.nih.gov/about/org/od/olpp/UScode
NICHD Strategic Planning: Purpose

• Enable internal and external stakeholders to look at NICHD’s portfolio with a fresh perspective
• Review and refocus NICHD’s science
• Align resources with scientific priorities
• Improve the health of the populations we serve
The Strategic Planning Process
Core Principles

Transparency

Stakeholder Participation

Decisions Informed by Evidence
NICHD Strategic Planning Process

Guiding Principles: Focus on the science, guided by evidence, informed by our communities, emphasis on transparency and accountability for all aspects of strategic planning process – no \textit{a priori} decisions have been made.
Identified members of the working group:

- Inclusion of NICHD staff (n=27)
  - DER Branch Chiefs, DIR and DIPHR Leaders, OD staff

- Outside expertise (n=53)
  - Staff were asked to nominate experts in the many areas of science represented in the NICHD portfolio
  - Preference for people with multi-disciplinary expertise, broad thinkers
  - Also included ~1/3 young investigators, who represent the future of NICHD

Collected and analyzed key data:

• Process was informed by evidence

• NICHD Strategic Data Review
  • Analyzed portfolio by public health and scientific domains
  • Reviewed NICHD/NIH strategic plans and internal scientific research plans
  • Reviewed areas of emphasis in NICHD Vision, 2000 Strategic Plan
  • Performed bibliometric analyses of the portfolio (ongoing)
NICHD Intramural and Extramural Research

**Intramural research**
- 1,030 Staff
- 74 PIs
- 335 trainees
- 77 clinical protocols
  - 10% in Detroit

**Extramural research**
- 4,874 new competing applications, 898 new competing grants
- 2,578 funded grants (new and continuing combined)
- 2,783 PIs (321 ESIs)
- 442 funded institutions
Analysis of Funded Portfolio
NICHD FY 17 Actual Expenditures by Budget Mechanism
($1.37B total)

- RPG: 53%
- Intramural Research: 14%
- Contracts: 10%
- Training: 2%
- Other Research: 2%
- Cooperative Clinical: 3%
- Careers: 3%
- Centers: 5%
- SBIR/STTR: 3%
- RMS: 5%
NICHD Spending by Broad Public Health Category, FY 2017

Source: NIH Research, Condition, and Disease Categories (RCDC) system.
Data for Intellectual, Developmental, Learning and Physical Disabilities are unofficial and have not been fully validated through the RCDC process.
NICHD’s Pediatric and Child Development Research Portfolio by Condition, FY 2017

Sources: NIH Research, Condition, and Disease Categories (RCDC) system and (*) NICHD Child Health Information Retrieval Program (CHIRP). Categories are overlapping and should not be added.
NICHD’s Gynecology and Reproductive Health Research Portfolio by Condition, FY 2017

Sources: NIH Research, Condition, and Disease Categories (RCDC) system and (*) NICHD Child Health Information Retrieval Program (CHIRP). Categories are overlapping and should not be added.
NICHD’s Pregnancy and Maternal Health Research Portfolio by Condition, FY 2017

- Depression: $8.5
- Gestational diabetes: $23.7
- Obesity: $28.8
- Preeclampsia: $35.6
- Violence: $0.3

Sources: NIH Research, Condition, and Disease Categories (RCDC) system and (*) NICHD Child Health Information Retrieval Program (CHIRP). Categories are overlapping and should not be added.
NICHD’s Intellectual, Developmental, Learning, and Physical Disabilities Research Portfolio by Condition, FY 2017

Sources: NIH Research, Condition, and Disease Categories (RCDC) system and (*) NICHD Child Health Information Retrieval Program (CHIRP). Categories are overlapping and should not be added.

Categories are derived from Web of Science designations based on journal of publication. (Source: NIH Library)
## NICHD Large Extramural Programs: Impact on Practice Guidelines

<table>
<thead>
<tr>
<th>Program</th>
<th>Number of Publications Cited in Guidelines</th>
<th>Percent (%) of Publications Cited in Guidelines</th>
<th>Percent (%) of Publications Cited in &gt;1 Guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal Fetal Medicine Units Network</td>
<td>90</td>
<td>25.6</td>
<td>13.4</td>
</tr>
<tr>
<td>Pediatric HIV/AIDS Cohort Study</td>
<td>9</td>
<td>6.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Collaborative Pediatric Critical Care Research Network</td>
<td>14</td>
<td>11.6</td>
<td>4.1</td>
</tr>
<tr>
<td>Neonatal Research Network</td>
<td>77</td>
<td>16.1</td>
<td>7.9</td>
</tr>
<tr>
<td>Pelvic Floor Disorders Network</td>
<td>33</td>
<td>25.8</td>
<td>14.8</td>
</tr>
<tr>
<td>Reproductive Medicine Network</td>
<td>15</td>
<td>18.1</td>
<td>12.0</td>
</tr>
</tbody>
</table>
Impact on Technology Development: Patents

Number of patents that cited publications supported by NICHD R01 grants, by extramural branch, 2006-2015
(Source: NIH Library)
Training and Career Development: FY 2017

• Extramural:
  • ~ 6% of budget
  • ~ 1,026 trainees and career awardees

• Intramural:
  • 335 trainees

• All levels from high school to early career researchers supported, but predoc, postdoc, and early career levels are most common

• Individual and institutional training programs

• Institutional training programs defined broadly by topic or by medical specialty
Research Infrastructure and Data Sharing

• Research resources and infrastructure
  • Supported directly (special set aside programs) or indirectly (via research centers)
  • Animal research: zebrafish, drosophila, xenopus, mouse models
  • Biospecimen banks
  • Population centers
  • Medical rehabilitation

• Data sharing
  • Data sharing policy
  • Data Archiving and Specimen Hub (DASH)
  • Data Sharing for Demographic Research (DSDR)
NICHD Engages in a Wide Range of Collaborations

• Agreements may depend on the type of organization
  • Trans-NIH (e.g., N-PeRC)
  • Interagency
    • Other federal agencies (e.g. FDA, CDC, HRSA, DoD)
  • Outside Organizations
    • Nonprofit (Professional societies, 501(c)3 organizations, foundations, universities, etc.)
    • For profit (pharma, industry)
NICHD Collaborations: Trans-NIH and Interagency

- Autism
- Birth defects
- Down syndrome
- Fragile X
- Muscular dystrophy
- Fetal alcohol syndrome
- Injury prevention
- Child maltreatment
- HIV/AIDS
- Obesity
- Child health statistics
- Early Learning
- Pediatric pharmacology

- Pregnancy and medication
- Medical rehabilitation
- Prosthetics
- Traumatic brain injury
- Preterm birth
- Disaster response
- Substance misuse/NOWS
- Nutrition
- Rare diseases
- SIDS/SUID
- High risk teen behavior (including substance abuse, driving, teen pregnancy, others)
- Zika
NICHD Collaborations: Public-Private Partnerships

- Memorandum of Understanding (MOU) captures roles and responsibilities of partners:
  - Must further the mission of NICHD
  - Shared goals – leverage knowledge, skills, resources, and services
  - Signed off and agreed to by each partner
  - Time limited
Public-Private Partnership Examples

**Mars-Waltham Foundation**
- Memorandum of Understanding
- Supports research on human-animal interactions and health and development
- Helped establish/grow this nascent field by supporting workshops, funding opportunities

**PregSource®**
- A crowd-sourced, interactive, platform to:
  - Detail the natural history – and variations - of human pregnancy
  - Provide accurate info about pregnancy from trusted sources
  - Let pregnant women know about opportunities to participate in targeted research
- 20 partner organizations
Stakeholder Input
Stakeholder Participation

• National Advisory Council Input - September 13, 2018
• Interviews with members of the Working Group
• October 15-16, 2018 – Strategic Planning Working Group meetings
• Expertise represented the range of NICHD’s research portfolio
• Identified and provided input on research priorities across scientific domains

• *Lots of great ideas, currently analyzing “themes”*
The Working Groups
Big Ideas: Where is the Hockey Puck Going?
How You Can Help: Multiple Opportunities for Input

• Ask questions NOW via interactive webinar
• Request For Information (RFI) to come in Dec 2018/Jan 2019
• Anytime -- Email questions or ideas to: NICHDStrategicPlan@nih.gov
• Goal: a transparent process with all of our stakeholders participating
Ready for Your Questions
Question and Answer Session

• Phones will remain muted. Please do not unmute your phone line.
• Please use the Q&A Panel at the right-hand side of your screen to type in your questions.
• Click on the question mark on the upper-right hand side of the WebEx page to expand the Q&A Panel (circled in red in the image to your right).
• The Q&A Panel will expand. Please make sure that “All Panelists” is selected in the drop-down menu (circled in red in the image to your right).
• Type your question into the blank box and click “send.”