The 2018 NICHD Strategic Planning Process

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NIH Eunice Kennedy Shriver National Institute
of Child Health and Human Development
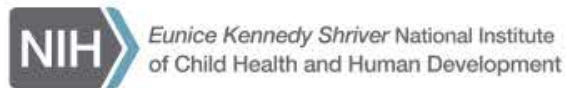
Presentation Overview

- 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

NICHD
2019
Strategic
Plan

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

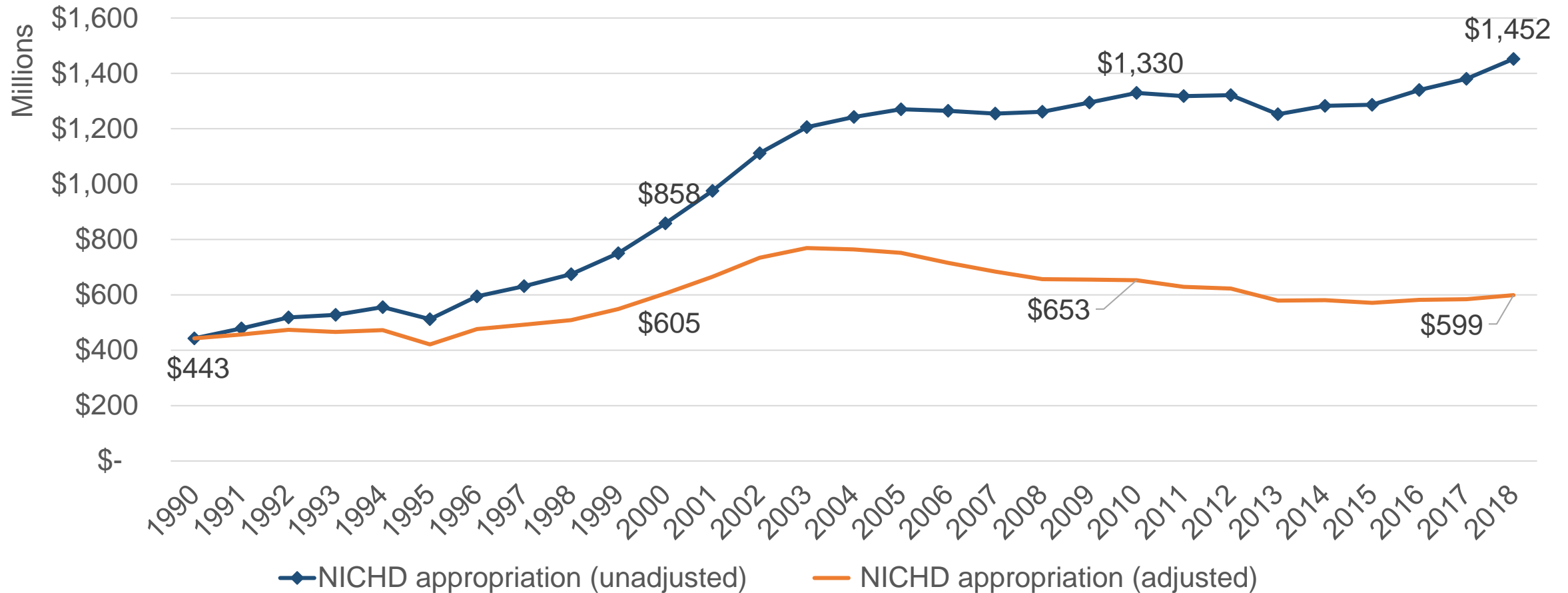# Why Now? The World Has Changed a Lot Since 2000 and 2012

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
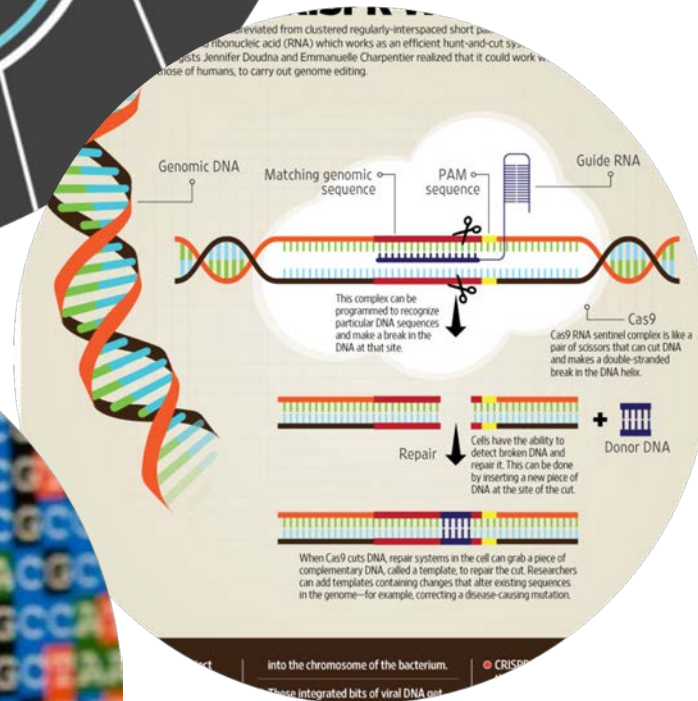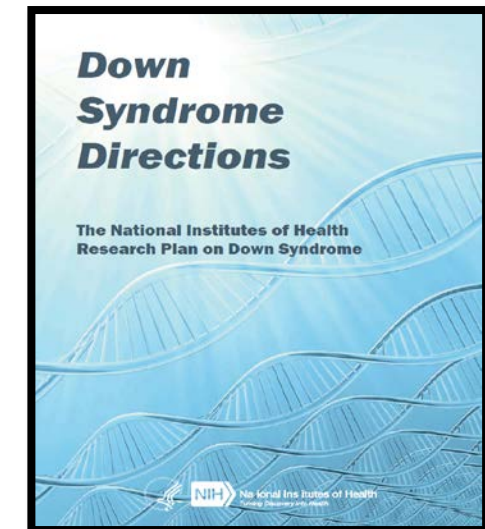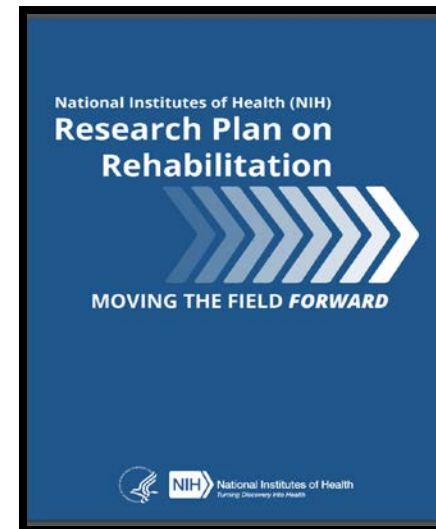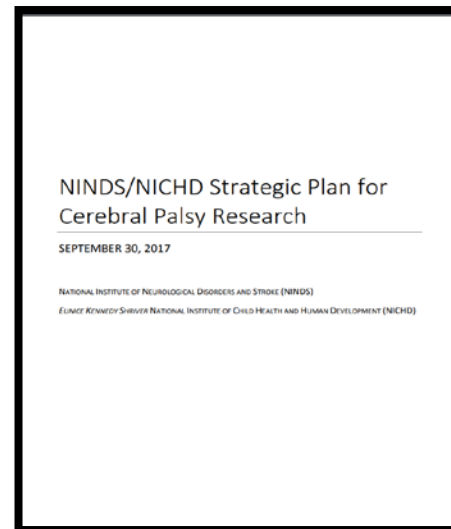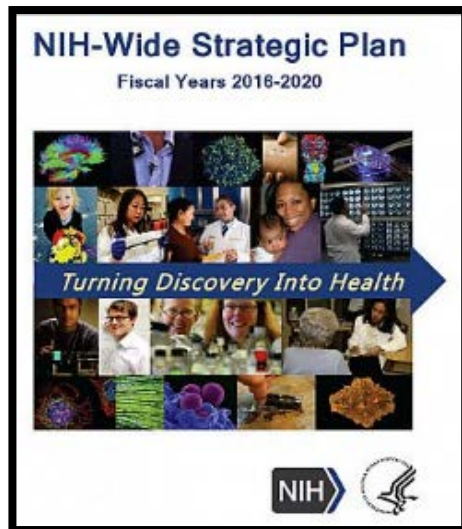
Why Now? Increases in Budget

Note: Figures do not include ARRA funding.

Why Now? Alignment Across NICHD and NIH
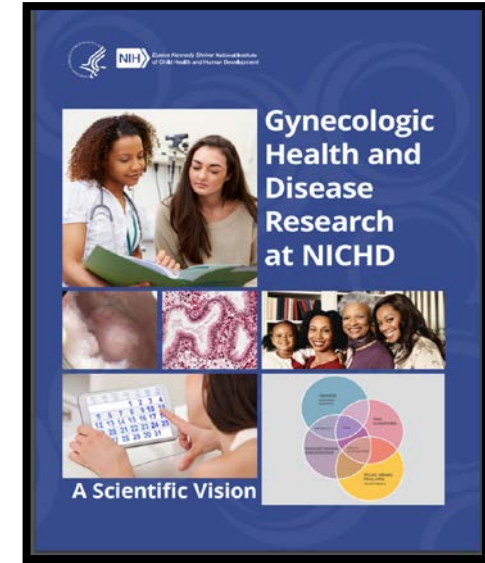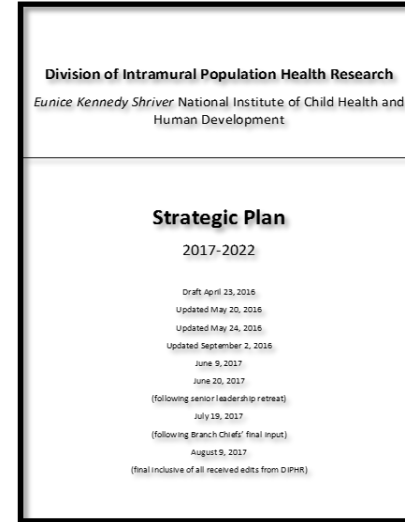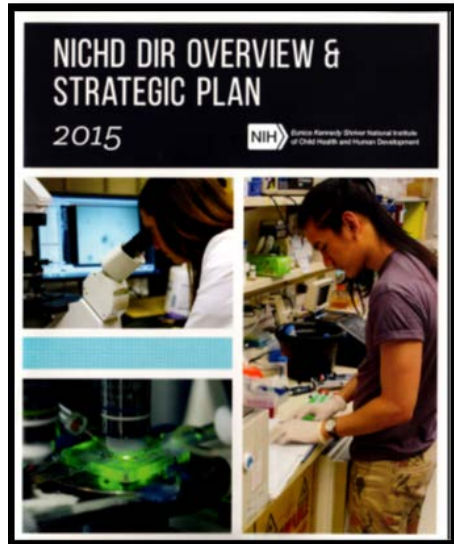
Why Now? Legislative Mandates

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.

President Obama Delivers Remarks and Signs the 21st Century Cures Act
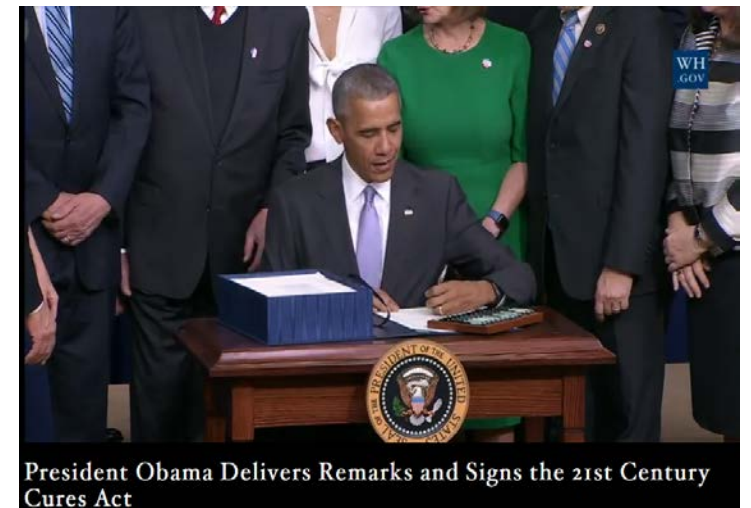
Select Congressional Mandates and NICHD Research

- 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
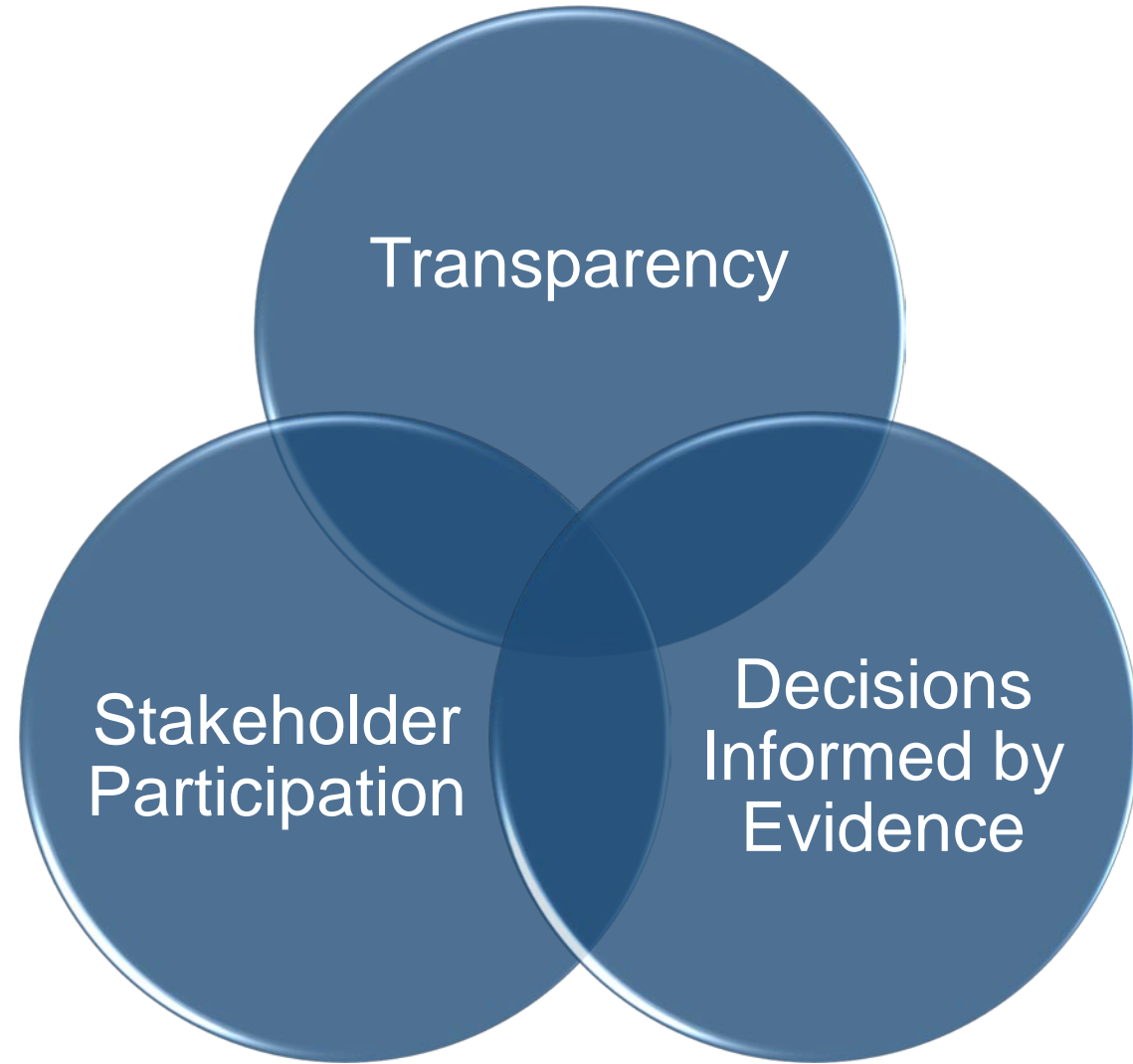
NICHD Strategic Planning Process

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 *a priori* decisions have been made.

Jan-Apr 2018
Pre-Planning

Jan-Aug 2018
Collect &
Analyze Data

Sep 2018-
Feb 2019
Seek Input

Feb-May 2019
Refine Details

Jun-Jul 2019
Communicate
& Implement

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
- Members: https://www.nichd.nih.gov/sites/default/files/2018-07/StrategicPlanningWorkingGroup2.pdf

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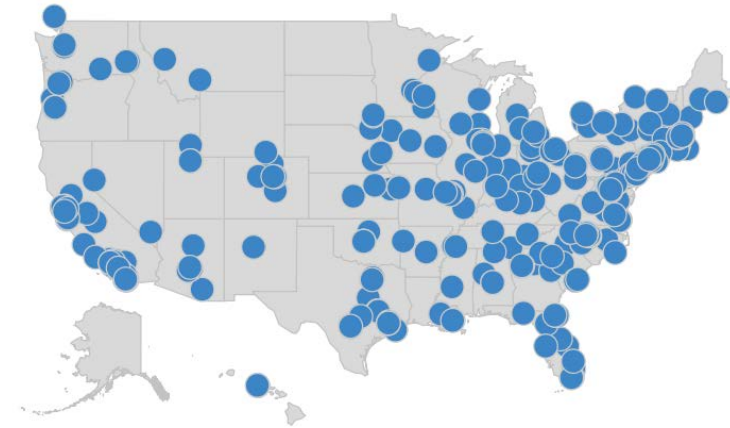
- **Intramural research**
  - 1,030 Staff
  - 74 PIs
  - 335 trainees
  - 77 clinical protocols
    - 10% in Detroit

- **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)
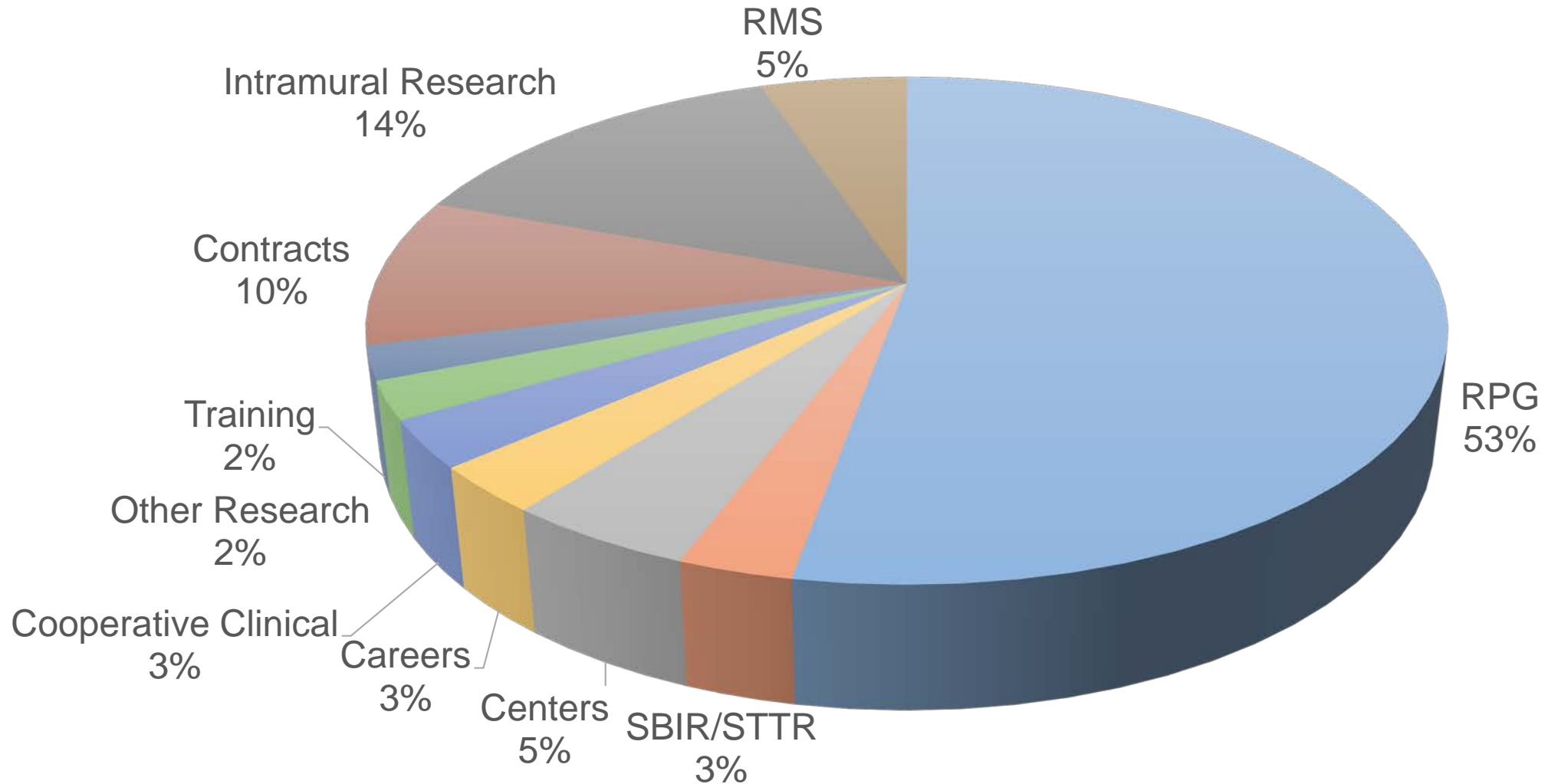
NICHD Spending by Broad Public Health Category, FY 2017

NICHD: $1.376B

Pediatrics and Child Development: $761M (55%)

Gynecology and Reproductive: $207M (15%)

Pregnancy and Maternal: $197M (14%)

Intellectual, Developmental, Learning, and Physical Disabilities: $249M (18%)

Other: $101.1M (7%)
$48.9M other basic research
$21.4M other population sciences
$9.4M other clinical research
$3.8M miscellaneous
$4.8M acute rehabilitation
$12.8M infrastructure and other

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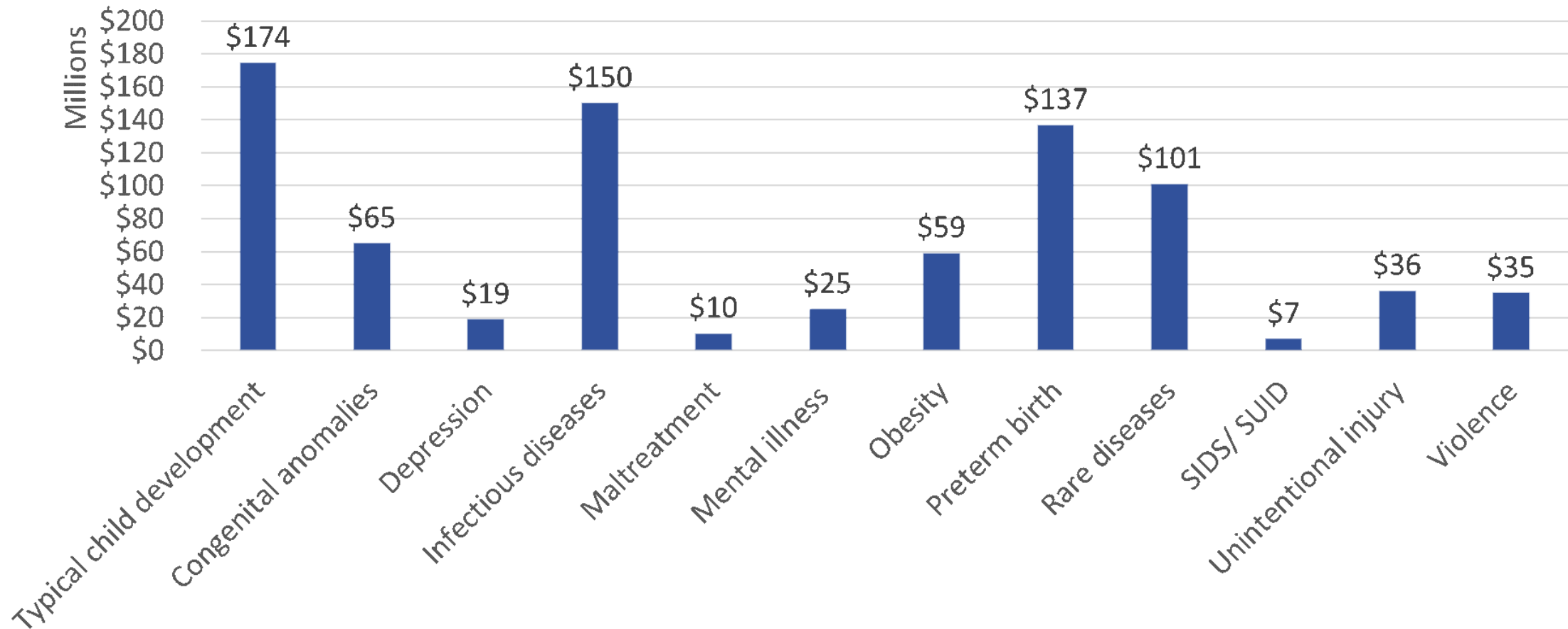
NICHD's Gynecology and Reproductive Health Research Portfolio by Condition, FY 2017
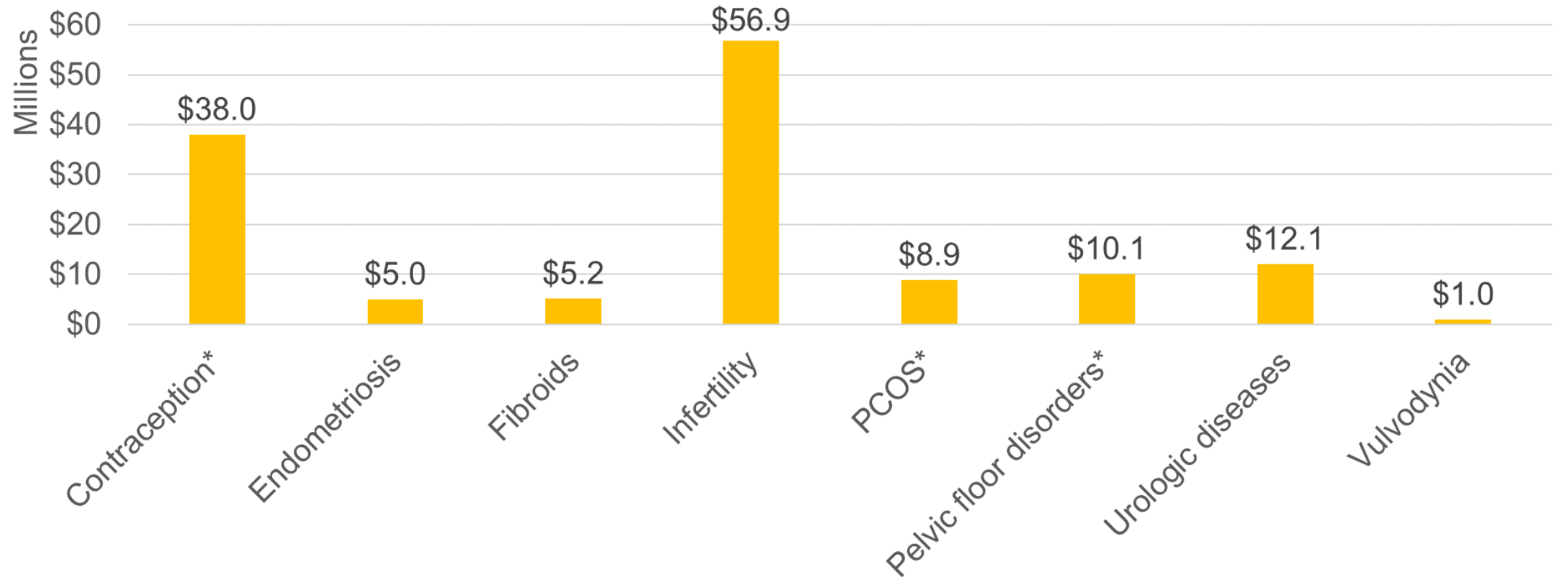
Sources: NIH Research, Condition, and Disease Categories (RCDC) system and (*) NICHD Child Health Information Retrieval Program (CHIRP). Categories are overlapping and should not be added.

NICHD's Pregnancy and Maternal Health Research Portfolio by Condition, FY 2017

NICHD's Intellectual, Developmental, Learning, and Physical Disabilities Research Portfolio by Condition, FY 2017

Millions

Condition	Value
Autism	$39
IDD	$90
Learning disabilities	$20
Mental illness	$10
Physical rehabilitation	$44
Rehabilitation	$63
Spinal cord injury	$8
Stroke	$19
TBI	$8

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.

Impact:
Major Research Disciplines Represented in NICHD R01 Publications (2006-2015)
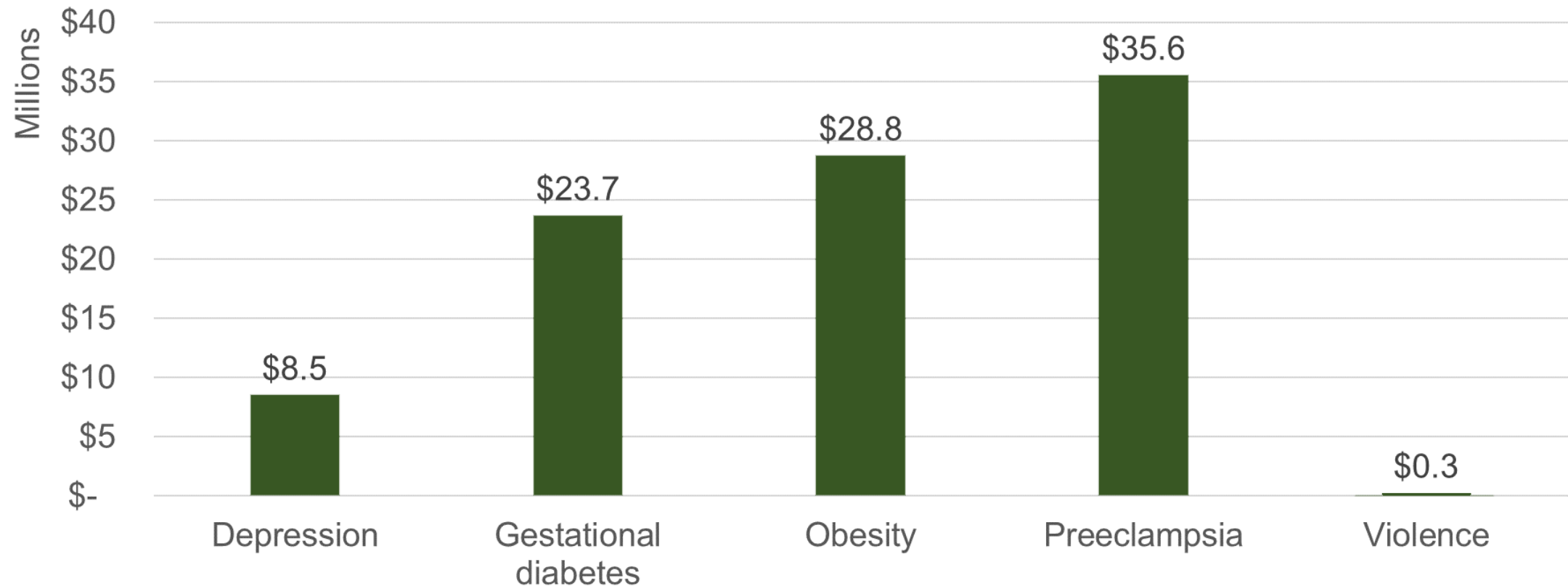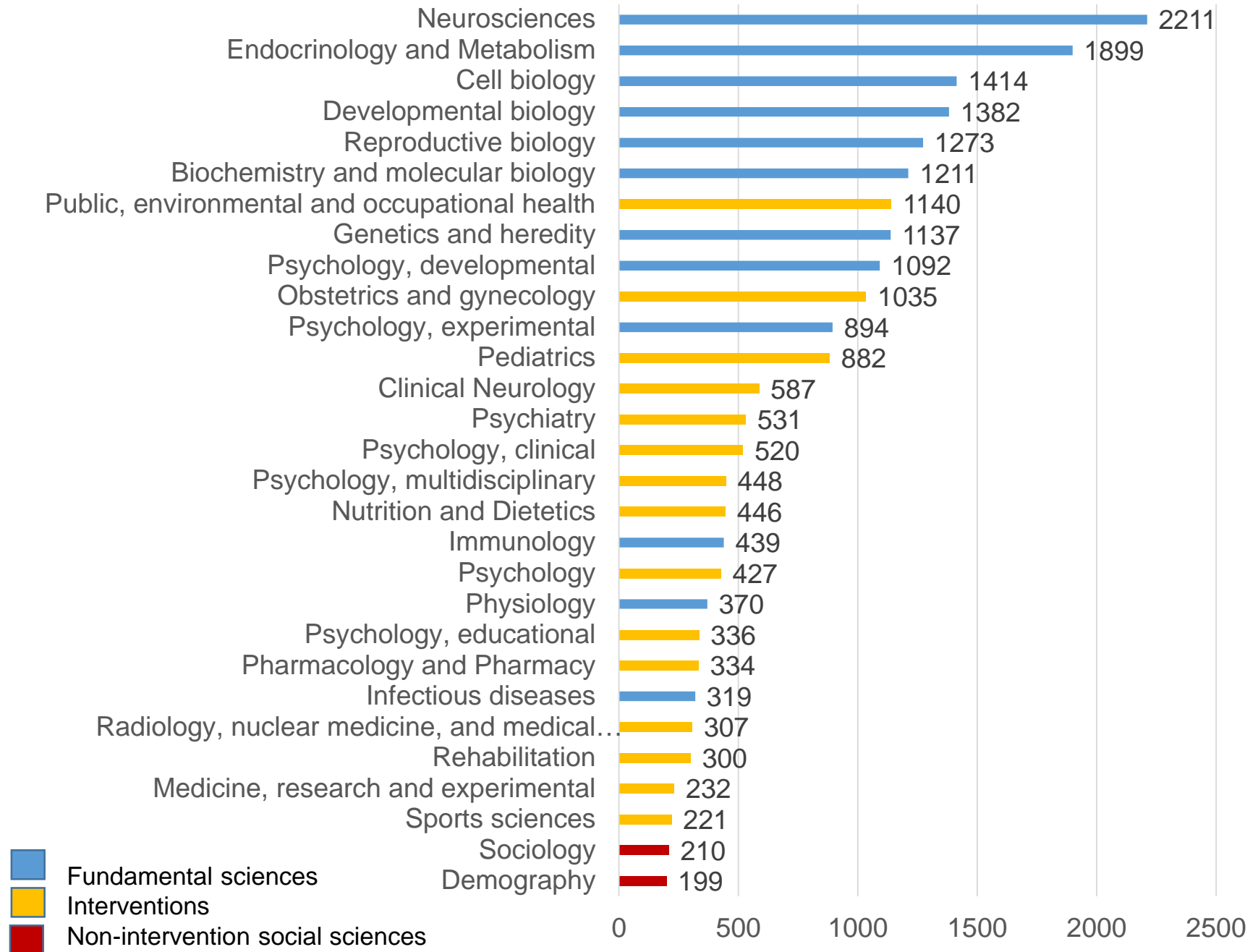
Categories are derived from Web of Science designations based on journal of publication. (Source: NIH Library)

Discipline	Value
Neurosciences	2211
Endocrinology and Metabolism	1899
Cell biology	1414
Developmental biology	1382
Reproductive biology	1273
Biochemistry and molecular biology	1211
Public, environmental and occupational health	1140
Genetics and heredity	1137
Psychology, developmental	1092
Obstetrics and gynecology	1035
Psychology, experimental	894
Pediatrics	882
Clinical Neurology	587
Psychiatry	531
Psychology, clinical	520
Psychology, multidisciplinary	448
Nutrition and Dietetics	446
Immunology	439
Psychology	427
Physiology	370
Psychology, educational	336
Pharmacology and Pharmacy	334
Infectious diseases	319
Radiology, nuclear medicine, and medical…	307
Rehabilitation	300
Medicine, research and experimental	232
Sports sciences	221
Sociology	210
Demography	199

Legend:
Fundamental sciences
Interventions
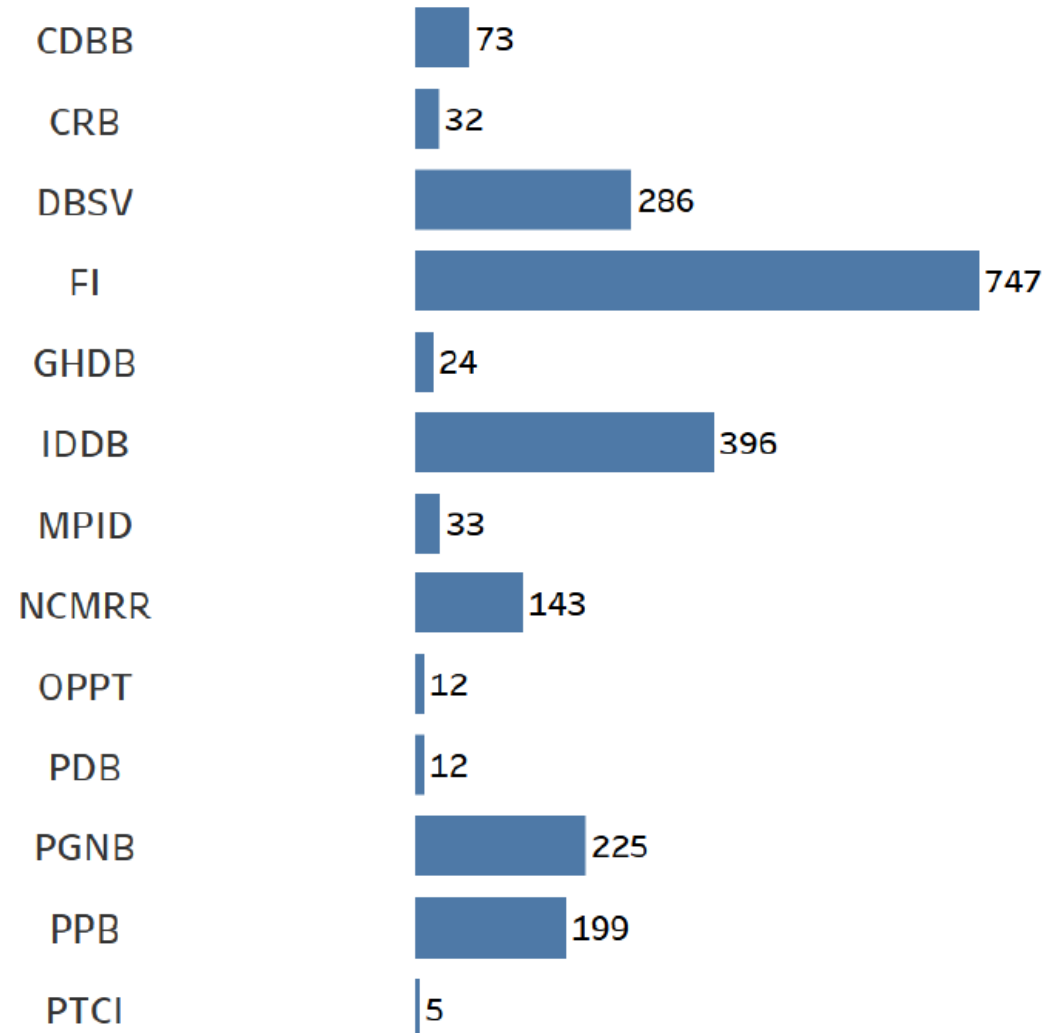Non-intervention social sciences

NICHD Large Extramural Programs: Impact on Practice Guidelines

Program	Number of Publications Cited in Guidelines	Percent (%) of Publications Cited in Guidelines	Percent (%) of Publications Cited in >1 Guideline
Maternal Fetal Medicine Units Network	90	25.6	13.4
Pediatric HIV/AIDS Cohort Study	9	6.9	1.5
Collaborative Pediatric Critical Care Research Network	14	11.6	4.1
Neonatal Research Network	77	16.1	7.9
Pelvic Floor Disorders Network	33	25.8	14.8
Reproductive Medicine Network	15	18.1	12.0

Impact on Technology Development: Patents

Number of patents that cited publications supported by NICHD R01 grants, by extramural branch, 2006-2015 (Source: NIH Library)

Branch	Patent supported
CDBB	73
CRB	32
DBSV	286
FI	747
GHDB	24
IDDB	396
MPID	33
NCMRR	143
OPPT	12
PDB	12
PGNB	225
PPB	199
PTCI	5

# 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)

DASH Data and Specimen Hub
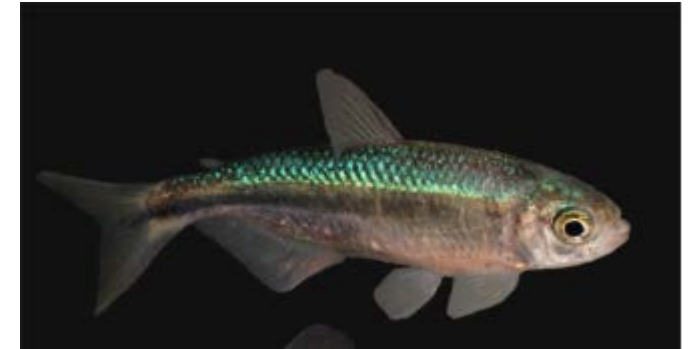
NICHD Engages in a Wide Range of Collaborations

- 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

NICHD Strategic Planning Process

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.*"