Therapeutic Opportunities in Newborn Screening Conditions across NIH

NBSTRN Network Meeting
April 9, 2013

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The Dilemma of New Drug Development
New Drug Development

- Cost: ~ $1 billion
- 15 year investment
- 95% failure rate

This dilemma is magnified for rare diseases!
What is NIH doing about this?
NIH Common Fund Initiatives

NIH Clinical Center Partnerships

UDN
NIH Clinical Center

- 240 beds
- More than 450,000 patients since opening in 1953
- Every patient on research protocol
- 1,530 active protocols
  - Interventional/Clinical Trials - 723 (48%)
  - Natural History - 716 (47%)
  - Screening - 67 (4%)
  - Training - 24 (1%)
- Many protocols (603) focus on rare diseases (383)
PAR-13-029 "Opportunities for Collaborative Research at the NIH Clinical Center"
Purpose of the FOA

• To support **collaborative** research projects aligned with NIH efforts to enhance the translation of basic biological discoveries into clinical applications that improve health

• To promote **partnerships** between NIH intramural and (non-NIH) extramural investigators

• To provide extramural investigators an opportunity to take advantage of the **unique research resources** of the NIH Clinical Center
Overview of the FOA

• 12 participating ICs: NICHD, NCI, NEI, NHLBI, NHGRI, NIAAA, NIAID, NIAMS, NIBIB, NIDCD, NIDA, NLM; also ORWH and ODS

• Up to $500K/year (direct costs) for up to 3 years

• U01 cooperative agreement mechanism

• Receipt dates: March 20, 2013 (also 2014 & 2015)

• Awards to be made early in FY (Nov/Dec)
Special Requirements

• Teams *must* have one extramural and one intramural investigator ("Multiple PD/PI" strongly encouraged)

• Some of the work *must* be done at the NIH Clinical Center

• Budget *must* delineate extramural, intramural and Clinical Center costs

• Application *must* include letters of support from the Clinical Center and from the appropriate IC

• Application *must* include a collaboration plan and describe the advantages of the intramural/extramural partnership and the utilization of Clinical Center resources
Website Highlights – Toolkit

• Current Research Links to:
  3. NIH Directory of Employees: https://ned.nih.gov/search/
  4. NIH Intramural Program: http://irp.nih.gov/

• Frequently Asked Questions: http://www.cc.nih.gov/translational-research-resources/faq.html

• Resources:
  1. Equipment, Technology, and Tools
  2. Biomedical Specimens
  3. Rare Diseases Programs
  4. Protocol Support/Unique Data Sets
  5. Healthy Volunteers

Questions?
ClinicalCtrPartner@mail.nih.gov
Undiagnosed Diseases Program

- Initially, intramural NHGRI/ORDR program
- Began in May 2008
- NIH Clinical Center
- Thorough, one-week evaluations
- No cost to patients
- Un-insured and under-insured patients welcomed
Undiagnosed Diseases Program

• Each year average:
  - 1,575 inquiries
  - 575 medical records evaluated
  - 113 patients admitted for evaluation

• Over a four-year period:
  - Diagnoses made in ~100 patients
  - Discovered and described 2 unknown diseases
  - Identified 15 genes not previously associated with human disease
Undiagnosed Diseases Network

- July 2012
- New mechanism: NIH Common Fund
- Expand the UDP to a network of medical research centers around the country
- Allocation: $145 million over seven years
- Focus on the discovery and diagnosis of patients
  - Promote the use of genomic data
  - Engagement of basic researchers in identifying the underlying mechanisms of diseases
  - Train clinicians in the use of contemporary genomic approaches
UDN Clinical Sites

- Cooperative Agreements
- 5-7 awards anticipated
- 4 years (FY14 through FY17)
- Application budgets should not exceed:
  - $800K total costs in FY14
  - $1.8M total costs in FY15
  - $2.3M total costs per year (FY16-FY17)
  - Must reflect the actual needs of the proposed project.
Funding Opportunities for UDN

1. **Clinical Sites for an Undiagnosed Diseases Network (UDN) (U01)** Due June 19, 2013

2. **Undiagnosed Diseases Gene Function Research (R21)** Due June 13, 2013

3. **Gene Function Studies to Investigate Rare and Undiagnosed Diseases (Administrative Supplement) PA-13-076** (Archived)

4. **Coordinating Center for an Undiagnosed Diseases Network (UDN) (U01) RFA-RM-12-020** (Archived)
Eunice Kennedy Shriver Intellectual and Developmental Disabilities Research Centers (IDDRCs)

- For the past 50 years:
- Centers grant mechanism
- Support Cores that provide research infrastructure
- Each Center supports 20-70 investigators working on 50-150 funded projects
- Many studies are developing treatments and interventions for IDDs
- **New mechanism for 2013: U54**
  - Specific research project
  - Required clinical translational core

http://www.eunicekennedyshriver.org/
RFA-HD-13-002: IDDRCs 2013

Application due date: April 9, 2013 (plan to repeat for next 3 yrs)

Structural Requirements:

U54 Center

Core Components

Administrative Core

Clinical Translational Core

1-4 additional cores

Research Component(s)

Address one of 5 focus themes identified at April workshop
IDDRCs

University of Washington
University of Alabama, Birmingham
University of Wisconsin, Madison
Washington Univ, St. Louis (new in 2010)
University of Massachusetts
Washington, DC
Children's National Medical Center, Washington, DC
Children’s Hospital Boston
Albert Einstein College of Medicine (new in 2011)
North Carolina
Kennedy Krieger Research Institute, Baltimore
University of Kansas
Baylor College of Medicine
University of California, Los Angeles
Children’s Hospital Philadelphia
University of North Carolina
Vanderbilt University
University of Pennsylvania, St. Louis

(new in 2010)
(new in 2011)
National Institute of Neurological Disorders and Stroke
NeuroNEXT

- Network for Excellence in Neuroscience Clinical Trials
  - Infrastructure to facilitate clinical trials for neurological disorders in adults and/or children
  - Phase 2 clinical trials or biomarker validation
  - 25 Clinical Study Sites in US
  - Clinical Coordinating Center
  - Data Coordinating Center
- Clinical trials can be proposed by non-site PIs:
  - Expedited review, centralized IRB
Summary

- New programs to promote therapy development
  - NIH Clinical Center Partnerships
  - Undiagnosed Diseases Network
  - NeuroNEXT

- Not-so-new programs to promote translational research
  - Intellectual and Developmental Disabilities Research Centers
## Acknowledgments

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