

National Heart Lung and Blood Institute

Supporting Research in Heart, Lung, Sleep, and Blood
Disorders and Blood Resources

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National Heart, Lung, and Blood Institute

- ❑ Supports research, training, and education programs to promote the prevention and treatment of heart, lung, blood, and sleep disorders, and supports research to improve the safety and availability of the Nation's blood supply.

- ❑ Extremely strong commitment to:
 - Investigator-initiated research
 - Support of Early Stage Investigators

Investigator-Initiated Research Grants

- ❑ **Research Project Grant (R01)**
Discrete, specific basic or clinical project, requires preliminary data and publication record, costs reflect project need, up to 5 years support, reviewed by the Center for Scientific Review (CSR). New Investigator/Early Stage Investigator status taken into account. A0 16%tile, A1 12%tile.
- ❑ **Exploratory & Developmental Research Project (R21)**
Support for early stages of project, no preliminary data required, direct costs are limited to \$275,000 over an R21 two-year period, with no more than \$200,000 in direct costs allowed in any single year, reviewed by CSR. 16%tile.
- ❑ **Program Project Grant (P01)**
Three or more projects focused on biomedical theme or research question, maximum annual direct costs of \$1,515,000, up to 5 years support, reviewed by an NHLBI tailored review committee.

Research Training & Career Development Grants

☐ **Training Grants and Fellowships**

- Individual Postdoctoral National Research Service Award (F32)
- National Research Service Award for Senior Fellows (F33)
- Institutional National Research Service Award (T32)
- Short-Term Institutional Research Training Grant (T35)

☐ **Career Development Awards**

- Independent Scientist Award (K02)
- Mentored Clinical Scientist Development Award (K08)
- Career Transition Award (K22)
- Mentored Patient-Oriented Research Career Development Award (K23)
- NIH Pathway to Independence (PI) Award (K99/R00)

NHLBI-Funded Research in Chronic Fatigue Syndrome

- ❑ NHLBI Funds Meritorious Peer-Reviewed Research Applications
 - NHLBI has funded several grants predominately examining circulatory dysfunction, orthostatic intolerance, and autonomic nervous system dysfunction in Chronic Fatigue Syndrome

- ❑ Institute-Initiated Research Grant or Contract Programs are created via a specific initiative development process

Initiative Development Process

Plan and Develop Ideas and Initiatives

- NHLBI staff develop ideas and initiatives, based upon input from
 - scientific community
 - other NHLBI constituencies, including patient groups
 - Congress
- Related to NHLBI Strategic Plan
- Complements investigator-initiated research
- NHLBI staff discuss ideas and initiatives at Idea Forum

Select and Prioritize Initiatives

- “Director’s Table” selects proposals from Idea Forum to be considered by the Board of External Experts (BEE)
- BEE prioritizes initiatives

Initiative Development Process

Consider and Recommend Initiatives for Funding

- ❑ National Heart, Lung, and Blood Advisory Council reviews initiatives and BEE prioritization and makes recommendations to the Director, NHLBI.

Make Funding Decisions

- ❑ Director, NHLBI makes funding decisions by considering:
 - Relevance to NHLBI Mission
 - BEE priorities
 - Council recommendations
 - Fiscal resources
 - Program needs
 - Program balance
 - Scientific opportunities

Blood XMRV Scientific Research Working Group

- Mission: Design and coordinate research studies to determine whether XMRV poses a threat to blood safety.
- Working Group includes representatives from transfusion medicine, retrovirology, and CFS scientific communities, as well as representatives from key Federal Agencies including HHS, FDA, CDC, and NIH.
- Evaluation of blood safety risks includes several steps:
 - Evaluate XMRV nucleic acid and antibody assays.
 - Establish prevalence of XMRV in blood donors.
 - Determine if XMRV is transfusion-transmitted.
 - Determine if transfusions are associated with CFS or prostate cancer (epidemiology studies).
- Funding for currently launched studies via NHLBI REDS-II Program

Blood XMRV Scientific Research Working Group

NHLBI - Simone Glynn - Chair
HHS - Jerry Holmberg - Co-chair
NIH - Harvey Alter
ABC - Celso Bianco
CDC - William Bower
BSRI - Michael Busch
ARC - Roger Dodd
FDA - Jay Epstein
FDA - Diane Gubernot
NIH - Eleanor Hanna
CDC- Michael Hendry
MVRBC - Louis Katz
AABB - Steven Kleinman
HMS – Anthony Komaroff
CDC - Stephan Monroe
NCI - Francis Ruscetti
ARC - Susan Stramer
BSRI - Leslie Tobler
CFIDS - Suzanne Vernon

Participating Labs:

CDC - Bill Switzer/Walid Heneine
FDA - Indira Hewlett
FDA - Shyh-Ching Lo
NCI - Mary Kearney/John Coffin
WPI - Judy Mikovits

Central Lab:

BSRI - Graham Simmons

The Retrovirus Epidemiology Donor Study -II (REDS-II) XMRV Panel Study

- ❑ Goal of the REDS-II program (a contract mechanism) is to improve the safety and availability of transfused blood products in the U.S. and internationally through the conduct of epidemiologic, survey, and laboratory studies.

- ❑ The REDS-II XMRV Panel Study includes 4 phases:
 - **Phase I - Analytical Panels (completed)**
Evaluate performance of XMRV NAT assays
 - **Phase II - Pilot Clinical Studies (ongoing)**
Whole Blood versus PBMC
Timing of sample preparation
 - **Phase III - Clinical Sensitivity/Specificity Panel (under development)**
NAT and serology assay performance on pedigreed clinical samples
 - **Phase IV - Blood Donor Clinical Panel**
Initial estimation of XMRV nucleic acid prevalence in blood donors
Initiation of donor seroprevalence studies



Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grants (R41, R42, R43, R44)

- ❑ Small Business Innovation Research (SBIR)
 - Set-aside (2.5%) for small business concerns to engage in federal R&D – with potential for commercialization

- ❑ Small Business Technology Transfer (STTR)
 - Set-aside (0.3%) program to facilitate cooperative R&D between small business concerns and U.S. research institutions – with potential for commercialization

- ❑ 3-Phase Program
 - Phase I: Feasibility study
 - Phase II: Full Research and Development phase
 - Phase III: Commercialization stage (not supported by SBIR/STTR funds)

Institute-Initiated Programs

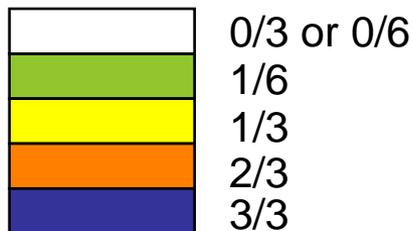
- ❑ **Request for Applications (grants; RFA) and Request for Proposals (contracts; RFP)**
 - Special receipt date
 - Tailored NHLBI review committee
 - Set-aside funds

- ❑ **Program Announcement with Special Review (PAR)**
 - Special receipt date
 - Tailored review committee
 - No set-aside funds

- ❑ **Program Announcement (PA)**
 - NIH receipt dates
 - Center for Scientific Review (CSR) Study Section review
 - No set-aside funds

Analytical Panel Results - Whole Blood

Cells per ml	CDC	T-H	FDA (Lo)	FDA (Hewlett)	WPI	NCI	GenProbe	Proviral copies per ml
0			*				**	0
0.5								≥5
1.5								≥15
4.5								≥45
13.6								≥136
41								≥410
122								≥1220
367								≥3670
1100								≥11000
3300								≥33000
9900								≥99000



* False positive result identified as non-specific band of human genomic origin by sequencing subsequent to decoding of results
 ** 1 out of 12 positive

Analytical Panel Results - Plasma

RNA copies per ml	CDC	T-H	FDA (Lo)	FDA (Hewlett)	WPI	NCI	GenProbe
0		1/6					
0.128		1/3			1/3		
0.64							
3.2		2/3	1/3				3/3
16		1/3	2/3			1/3	3/3
80	3/3	3/3	1/3	2/3	2/3	2/3	3/3
400	3/3	3/3	1/3	3/3	3/3	3/3	3/3
2,000	3/3	3/3	2/3	3/3	3/3	3/3	3/3
10,000	3/3	3/3	3/3	3/3	3/3	3/3	3/3
50,000	3/3	3/3	3/3	3/3	3/3	3/3	3/3
250,000	3/3	3/3	3/3	3/3	3/3	3/3	3/3

