

Report from the Acting Director

*Douglas R. Lowy
Acting Director, National Cancer Institute,
National Institutes of Health*

Outstanding Investigator Award

- To provide long-term support to experienced investigators with outstanding records of cancer research productivity who propose to conduct exceptional research.
- To allow investigators the opportunity to take greater risks, be more adventurous in their lines of inquiry, or take the time to develop new techniques

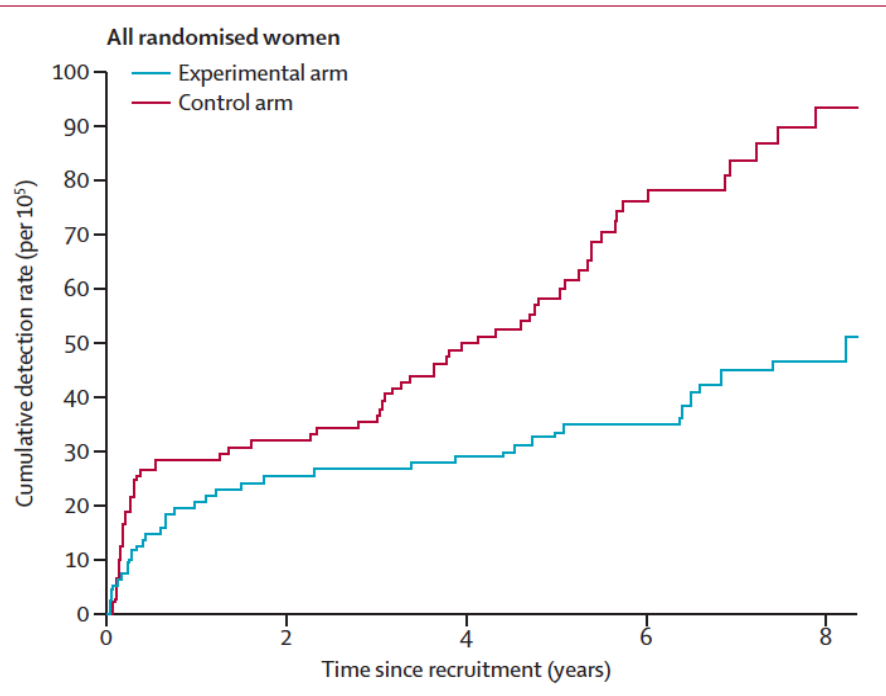
Precision Medicine in Cancer Treatment

- President Obama has proposed \$70 million in his FY16 budget for the Precision Medicine Initiative in Oncology (PMI-Oncology)
- Future workshop to explore the translational potential for the specific re-activation and/or replacement of tumor suppressor gene activities

Precision Medicine in **Cancer Screening**

- Moving from screening based mainly on “pattern recognition” towards screening based mainly on molecular understanding of disease and its application to molecular diagnostics
- The example of **cervical cancer screening**
- Cytologic (Pap) screening is more sensitive for detecting squamous cell cancer precursors than adenocarcinoma precursors; squamous cell cancer incidence has decreased, but not adenocarcinoma

HPV testing can prevent more cervical cancers, especially adenocarcinomas, than cytology



	Pooled rate ratio* (95% CI)
Morphology	
Squamous-cell carcinoma	0.78 (0.49–1.25)
Adenocarcinoma	0.31 (0.14–0.69)
Adenocarcinoma vs squamous-cell carcinoma	0.34 (0.12–0.90)

* Ratio of incidence with HPV testing vs. incidence with cytology

Pooled cervical cancer incidence from 4 randomized controlled trials of **cytology (control arm)** vs. **HPV testing (experimental arm)**

Precision Medicine in **Cancer Prevention**

- The example of **aspirin**
- Aspirin can reduce the risk of several cancers, especially colorectal cancer
- Concern about side effects from aspirin (especially an increased risk of bleeding) has prevented aspirin from being recommended for reducing cancer risk
- To increase the benefit/harm ratio, use molecular understanding to risk-stratify those patients who will derive the most benefit

High 15-Hydroxyprostaglandin (15-HPGD) in normal colon is associated with reduced risk of CRC in regular aspirin users

	Non-Users	Regular aspirin users
All CRC	1.0	0.73 (0.62-0.86)
High 15-PGDH CRC	1.0	0.49 (0.34-0.71)
Low 15-PGDH CRC	1.0	0.90 (0.63-1.27)

Background information: 15-HPGD is down-regulated in CRC; 15-HPGD knock-out mice have increased colon tumors that are resistant to COX-2 inhibitors

Focus on specific cancers with health disparities (high-risk populations)

- Identify the specific cancers
- Some possible examples: colorectal cancer, liver cancer, breast cancer, prostate cancer
- Identify the risk factors and their relative contribution to the disparities: biologic factors, life-style factors, health care access/utilization
- Explore efforts to mitigate the risk factors

Novel recurrently mutated genes in African American colon cancers

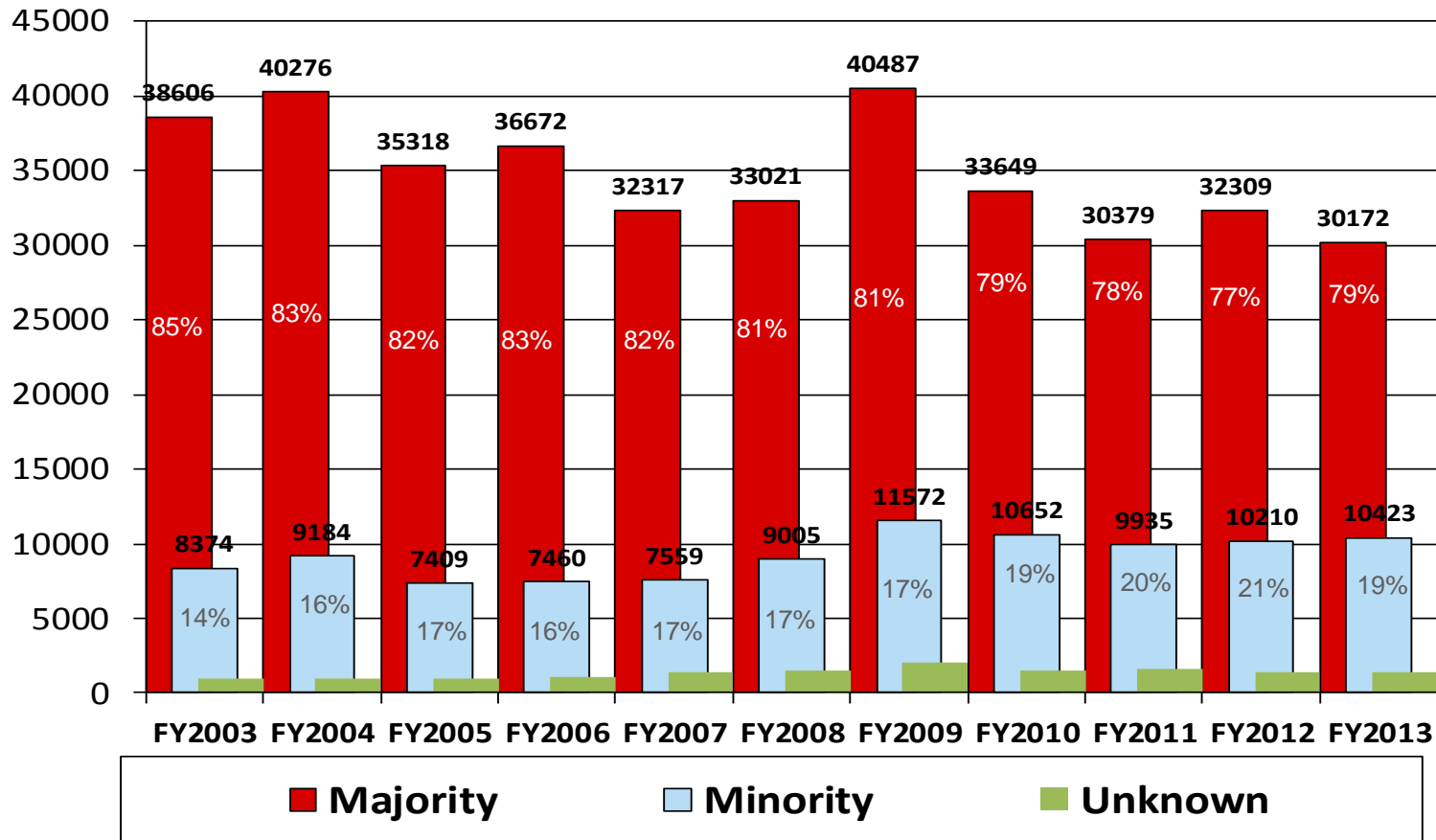
Kishore Guda^{a,b,c}, Martina L. Veigl^{b,c,1}, Vinay Varadan^{a,b,1}, Arman Nosrati^d, Lakshmeswari Ravi^d, James Lutterbaugh^d, Lydia Beard^d, James K. V. Willson^e, W. David Sedwick^{b,c,d}, Zhenghe John Wang^{b,f}, Neil Molyneaux^f, Alexander Miron^f, Mark D. Adams^g, Robert C. Elston^{b,h}, Sanford D. Markowitz^{b,c,d,i,2,3}, and Joseph E. Willis^{b,c,i,j,2}

^cDepartment of Medicine, ^fDepartment of Genetics and Genome Sciences, ^hDepartment of Epidemiology and Biostatistics, ^jDepartment of Pathology, ^aDivision of General Medical Sciences-Oncology, ^dDivision of Hematology and Oncology, ^bCase Comprehensive Cancer Center, and ⁱCase Medical Center, Case Western Reserve University, Cleveland, OH 44106; ^eHarold C. Simmons Comprehensive Cancer Center, University of Texas Southwestern Medical Center, Dallas, TX 75390; and ^gJ. Craig Venter Institute, La Jolla, CA 92037

“...Mutations in a set of 15...genes appear to be strongly preferentially associated with CRCs arising in AA versus Caucasian individuals, suggesting an important difference in the mutational landscapes of CRCs arising in different ethnic groups. “

Guda et al., 2015. Proc. Natl. Acad. Sci. 112:1149

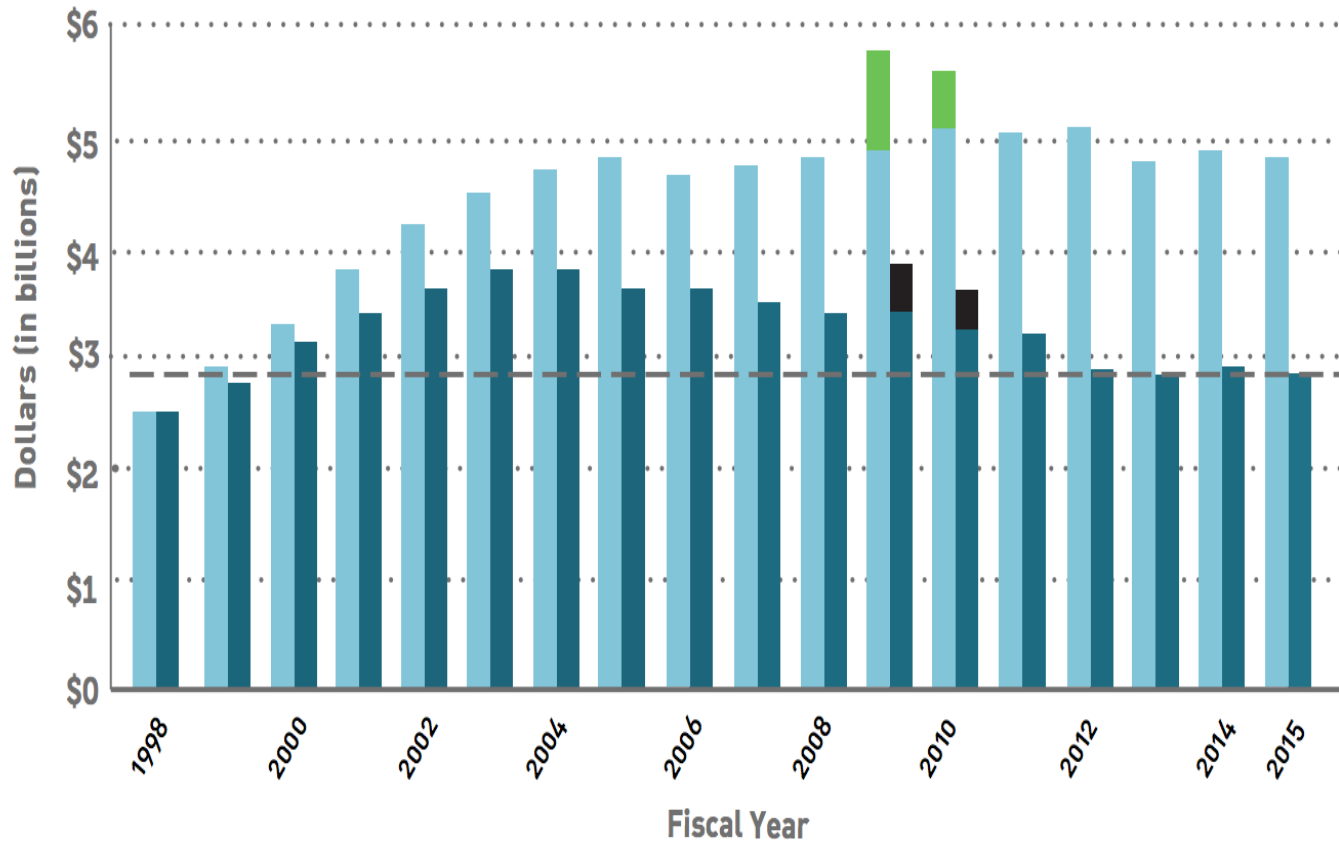
Minority Enrollment to NCI Cooperative Group Clinical Trials



Worta McKaskill-Stevens et al, NCI Community Oncology Research Program, unpublished data

Strong Support for Basic Research

The Declining Purchasing Power of the NCI Budget



■ NCI Budget
 ■ NCI Budget Adjusted for Inflation (FY 1998 dollars)
 ■ ARRA Funding (Public Law 111-5)
 ■ ARRA in 1998 Dollars

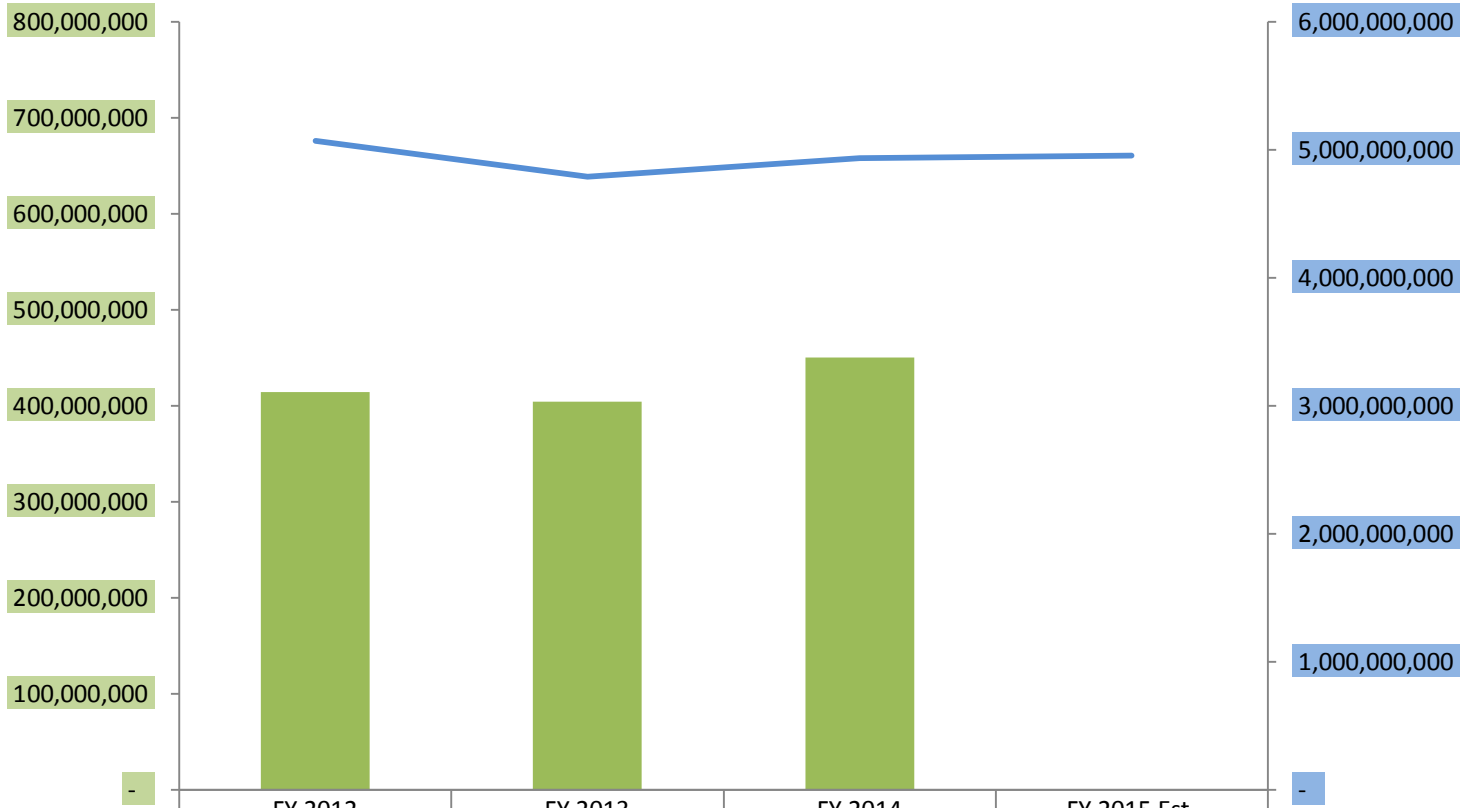
-- The dashed line at \$2.9 billion shows that the current NCI budget, adjusted for inflation, is essentially the same as the NCI budget in FY 1999.

Source: NCI Office of Budget and Finance

Competing RPG & NCI Total Obligations

Competing RPG Obligations

NCI Total Obligations



	FY 2012	FY 2013	FY 2014	FY 2015 Est.
Competing RPGs - Obligations	414,003,721	403,944,814	450,476,095	-
Competing RPGs - Count	1,085	1,095	1,207	-
NCI Total Obligations	5,067,341,795	4,789,014,389	4,932,368,225	4,953,028,000

■ Competing RPGs - Obligations
 — NCI Total Obligations

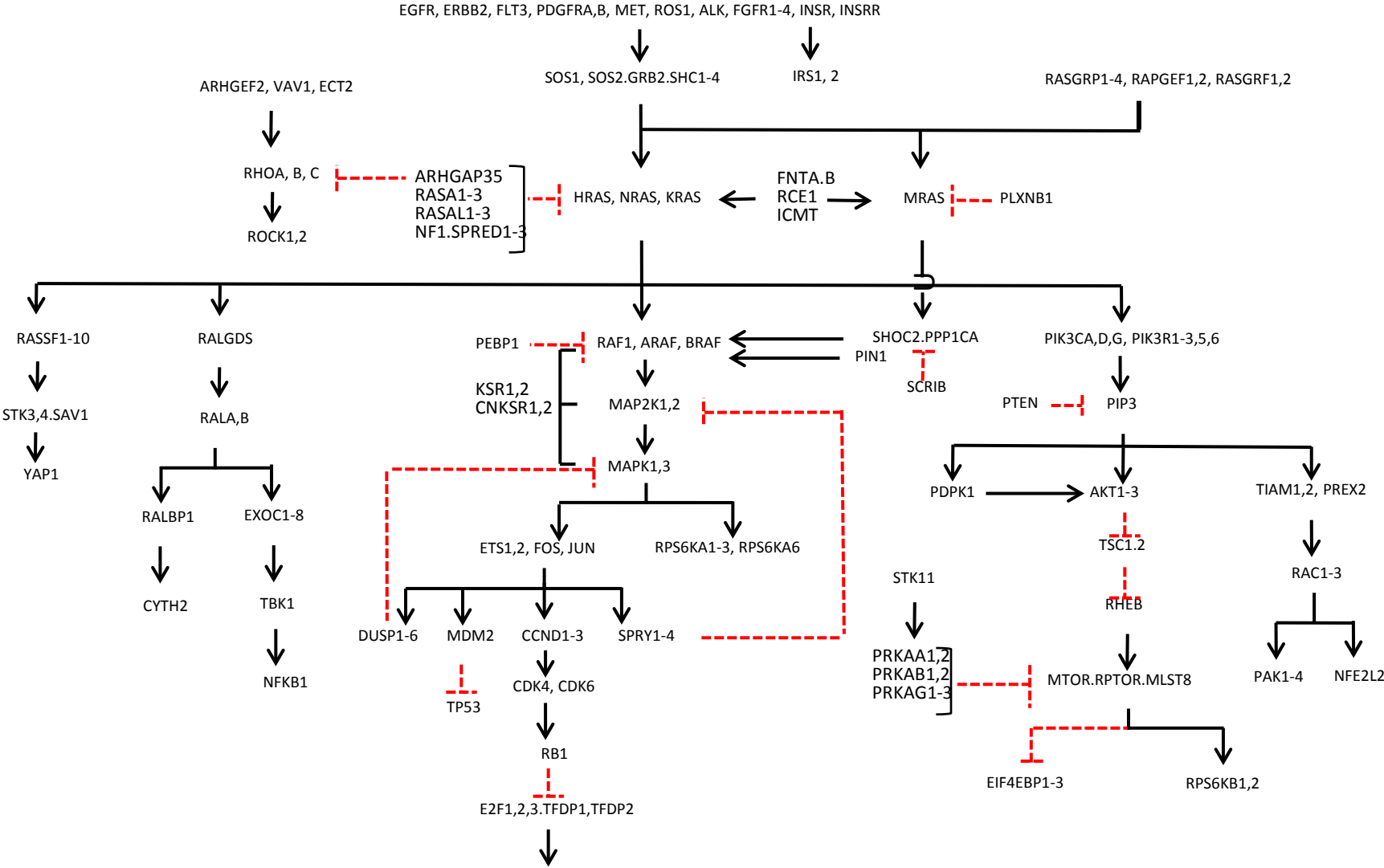
Recent modifications to RPG pool

- Decreasing the cuts to modular grants from 17% to 8.5%.
- Outstanding Investigator Awards: will increase the average size of the awards

NCI Cancer Centers

- P30 core grants

Ras pathway v2.0



Ras pathway clones

- **2 sequence-validated Gateway Entry clones for each gene (for generating N or C terminal fusions)**
- **180 total genes**
 - 17 not available commercially in the most biologically relevant isoform
 - 32 additionally not available without non-silent mutations
- **350 of 360 clones completed by July 17th**
- **Clones available through Dom Esposito: espositod@mail.nih.gov**

FNLCR Recompete

- NCI has begun the recompetition of the Operations and Technical Support (OTS) contract that runs NCI's Federally Funded Research and Development Center (FFRDC)
- Leidos Biomedical Research, Inc. currently administers the contract
- Information concerning the competitive process will be announced on [FedBizOpps](#) as well as at the [FNLCR Acquisition Portal](#)
- Pre-Proposal Conference Oct. 1 – 2, 2015
- Please help spread the word – we are doing our utmost to ensure a fair and open contract competition

Recent Personnel Changes

Retirements

- Bob Wiltrout, Center for Cancer Research (CCR)
- Joe Tomaszewski, Division of Cancer Treatment and Diagnosis (DCTD)
- Susan Erickson, Office of Government and Congressional Relations (OGCR)

New Leadership

- Toby Hecht, Deputy Director, DCTD
- Lee Helman, Acting Director, CCR
- Glenn Merlino, Acting Scientific Director (Basic), CCR
- MK Holohan, Acting Director, OGCR
- Peter Garrett, Director, Office of Communications and Public Liaison (OCPL)

Center for Global Health

- Marie Ricciardone, Ph.D.

New Version of Cancer.gov and Cancer.gov/espanol



NCI Office of Communications and Public Liaison, especially Peter Garrett and Lakshmi Grama



NCI-MATCH Targeted Treatment
Clinical Trial Launches at ASCO

LaRed21

Instituto Nacional del Cáncer en
EE.UU. en el mayor ensayo genético
hasta ahora trata mutaciones
específicas en tumores

The Washington Post

Health & Science

Cancer trials are changing. That could mean
faster access to better drugs.

OneLive

Largest-Ever Precision Medicine
Oncology Trial Ready for Launch

THE WALL STREET JOURNAL.

U.S. Cancer Study to Match Existing Drugs to Genetic Mutations

Study marks ambitious effort to advance emerging field of precision medicine

THE CANCER LETTER

NCI-MATCH to Bring in Public, Private Funds,
Giving NCI New Urgent Scientific Agenda

By Paul Goldberg

C-SPAN



AP THE BIG STORY

Novel government cancer study will test precision
medicine

By MARILYN MARCHIONE Jun. 1, 2015 11:56 AM EDT

abc NEWS

Chicago Tribune

U.S. News

The Washington Post

To Your Health

A new way to study cancer and its
treatments

Pittsburgh Post-Gazette®

Genetic tailoring? Pittsburgh-area hospitals set
to join nationwide cancer trial

June 3, 2015 2:22 PM

Los Angeles Times

Cancer trials aim to shore up
'precision medicine's' base of
evidence

Shanghai Daily

上海日报

U.S. announces schedule of trial for linking
targeted cancer drugs to gene mutations

Jun 02, 2015

REUTERS

Health | Mon Jun 1, 2015 5:43pm EDT

Large U.S. cancer trial to match genetic glitches to
targeted drugs

CHICAGO | BY JULIE STEEN-HUYSEN



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www.cancer.gov

www.cancer.gov/espanol