

NCI Update

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National Institutes of Health*

New Acting NCI Director
Doug Lowy, MD
as of April 1, 2015





Precision Medicine



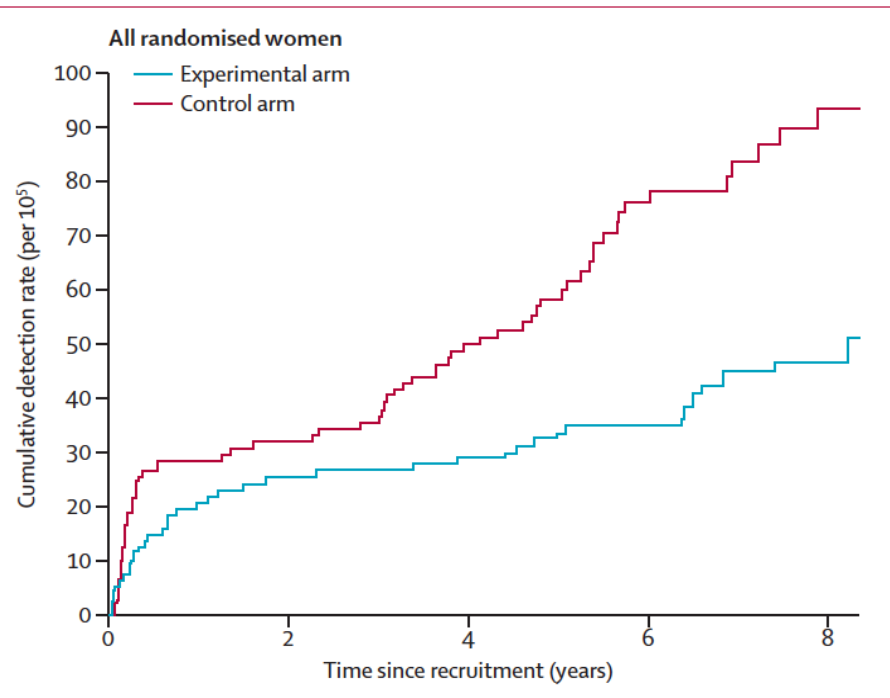
Precision Medicine in Cancer Treatment

- 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)**



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



Other Program Updates



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



Pancreatic Cancer Detection Consortium

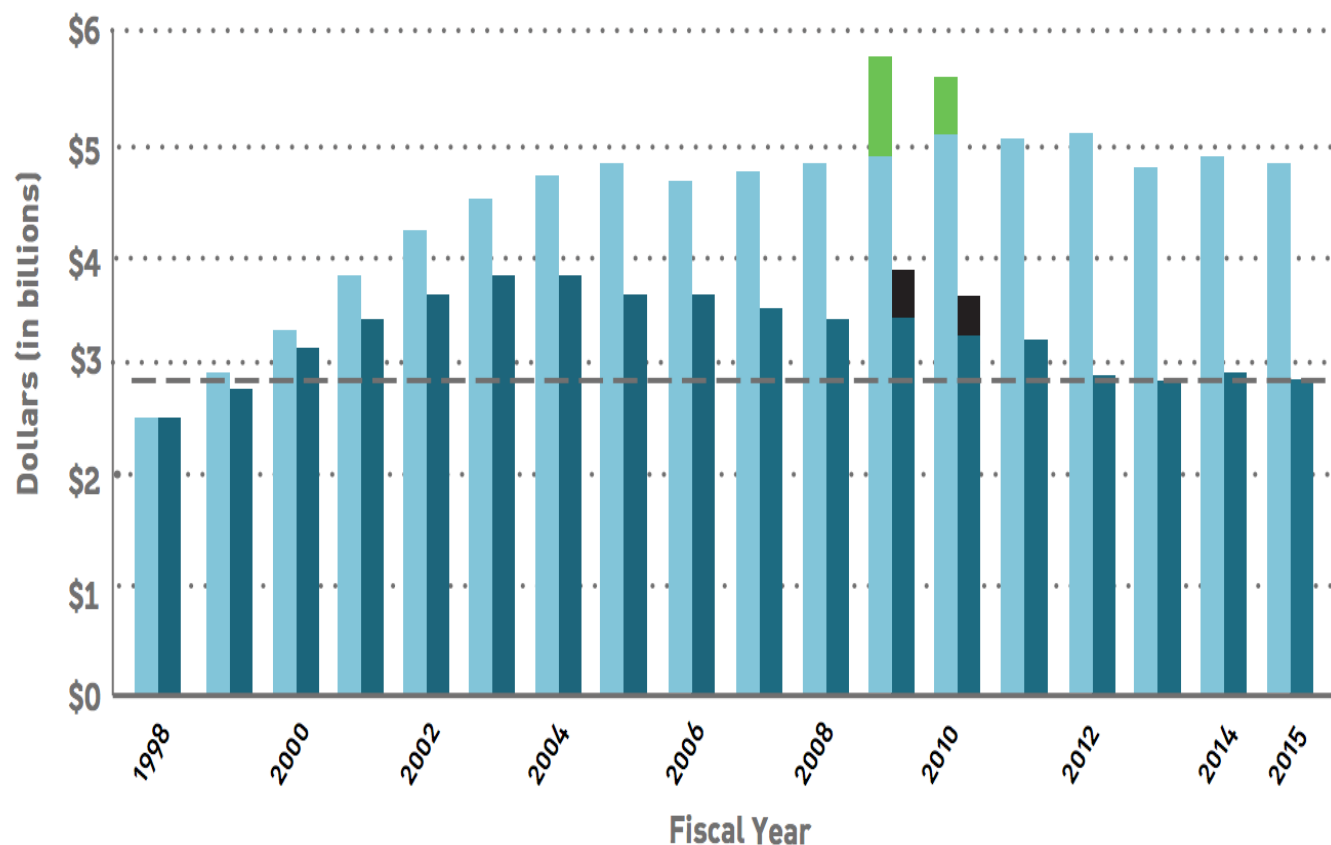
- Support research for the development and testing of new molecular and imaging biomarkers for identifying patients at high risk for PDAC
- Multi-disciplinary, collaborative teams address:
 - identification and testing of biomarkers measurable in bodily fluids for early detection of PDAC or its precursor lesions
 - determine which pancreatic cysts are likely to progress to cancer
 - develop molecular- and/or imaging-based approaches for screening populations at high risk of PDAC
 - conduct biomarker validation studies
 - collect longitudinal biospecimens for the establishment of a biorepository

<http://grants.nih.gov/grants/guide/pa-files/PAR-15-289.html>

NCI Budget



The Declining Purchasing Power of the NCI Budget



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

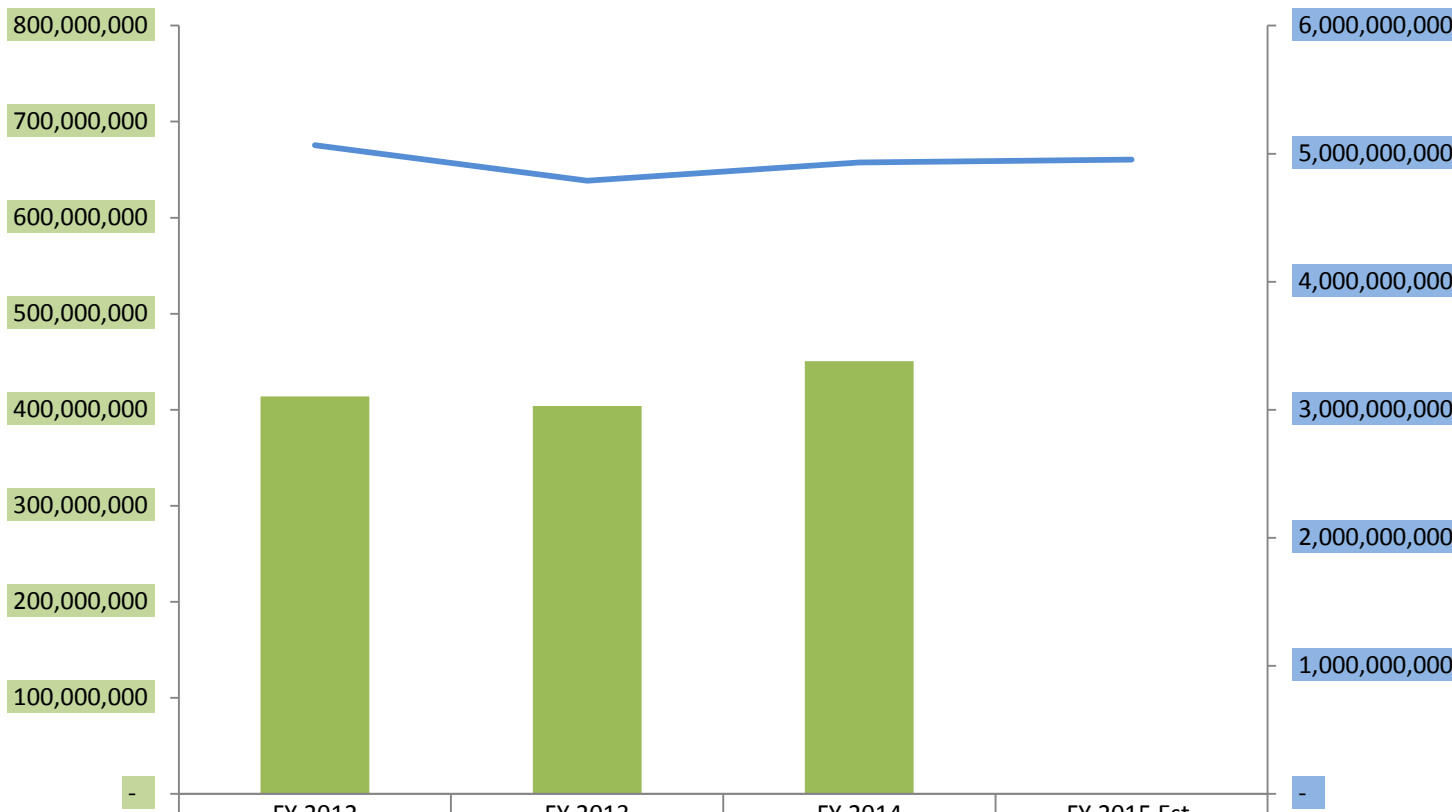
-- The dashed line at \$2.9 billion shows that the current NCI budget, adjusted for inflation, is essentially the same as the NCI budget in FY 1999.

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

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)

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



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



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