

NCI Director's Update

*Frederick National Laboratory
Advisory Committee*

Douglas R. Lowy, M.D.
Acting Director

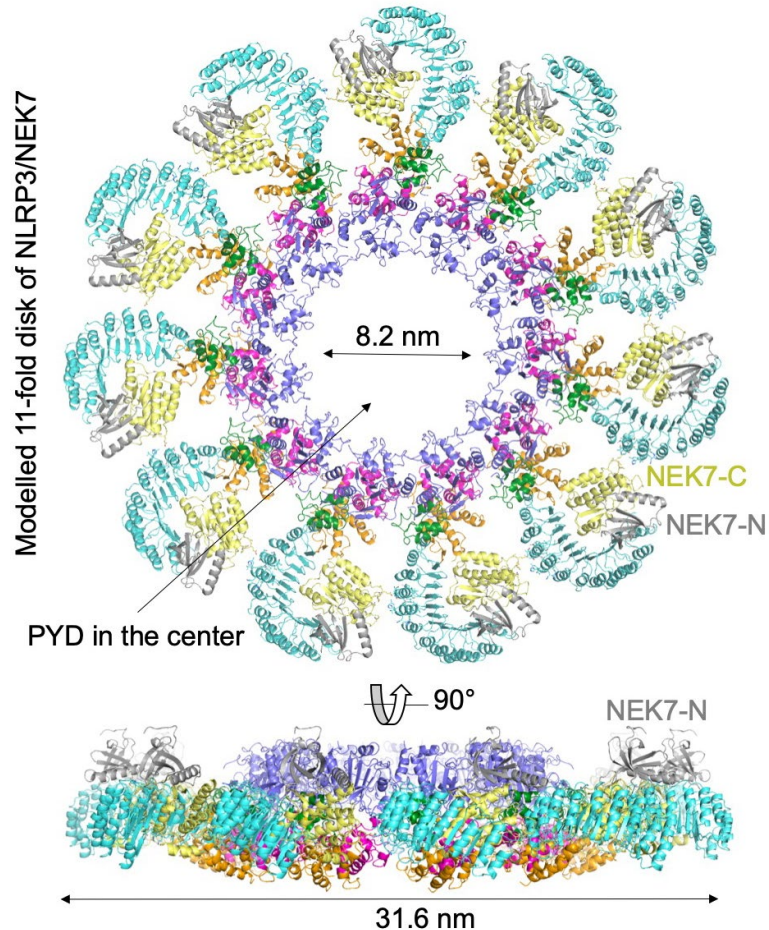
@TheNCI
@NCIDrDougLowy



Topics on FNLAC Meeting Agenda

- Spectrum of Science Conducted at the FNL for Cancer Research
- National Cryo-EM Facility (NCEF) Update
- NCI/DOE Collaborations Working Group Update
- Cancer Models and Therapeutics Development Working Group Update
- ATOM
- RAS Initiative Update

One of Over 200 Structures Solved at the National Cryo-EM Facility Frederick National Laboratory for Cancer Research



- Cryo-EM structure of inactive human NLRP3 in complex with NEK7, at a resolution of 3.8Å.
- NEK7 bridges adjacent NLRP3 subunits with bipartite interactions to mediate the activation of the NLRP3 inflammasome

Dr. Hao Wu, Harvard Medical School

Sharif H, et al., Nature, 570:338-343, 2019

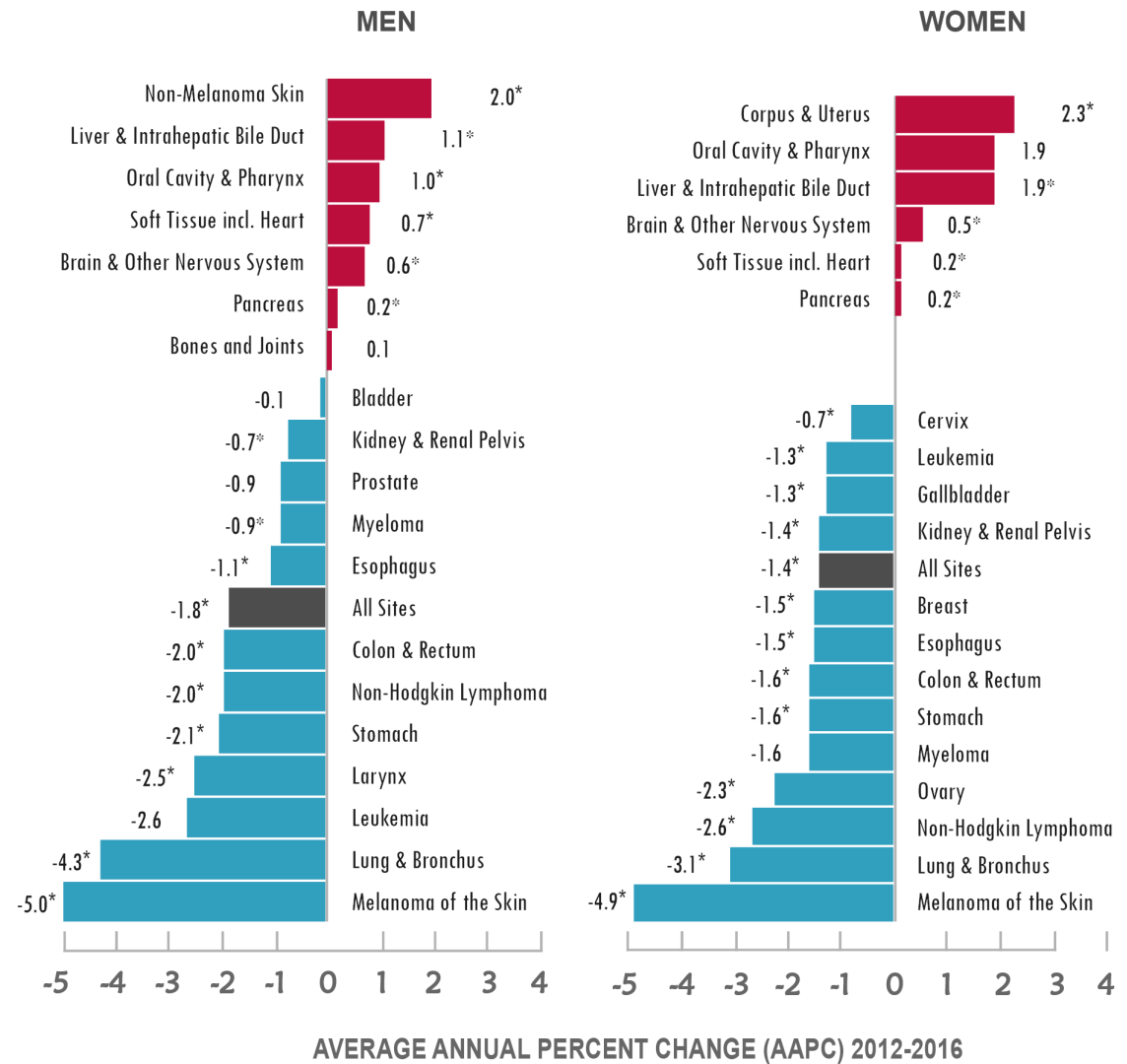
NCI at Frederick



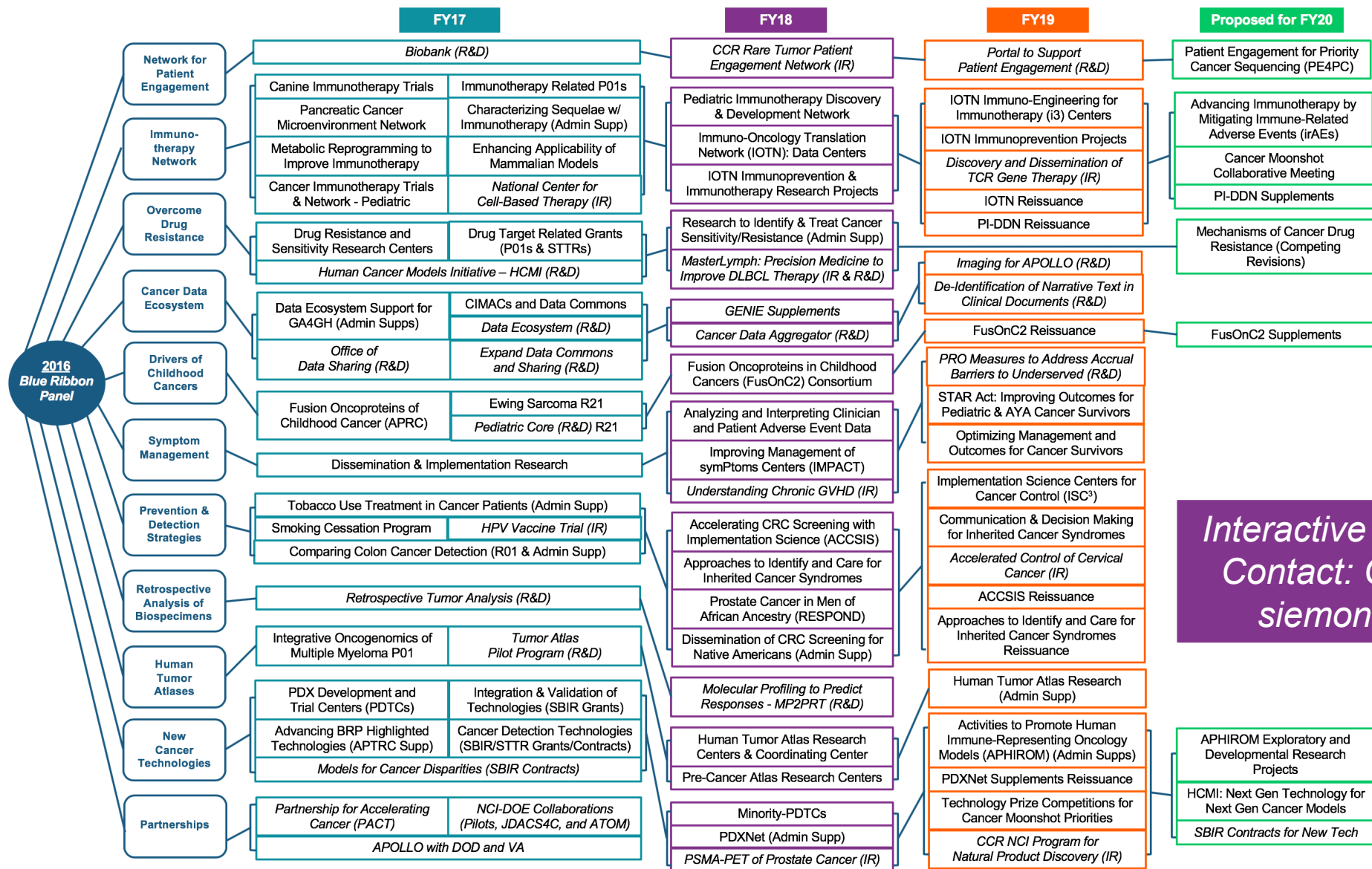
- Associate Director,
NCI at Frederick
- **Sara Hook, Ph.D.**

ANNUAL REPORT TO THE NATION ON THE STATUS OF CANCER

JNCI
MAY 30, 2019



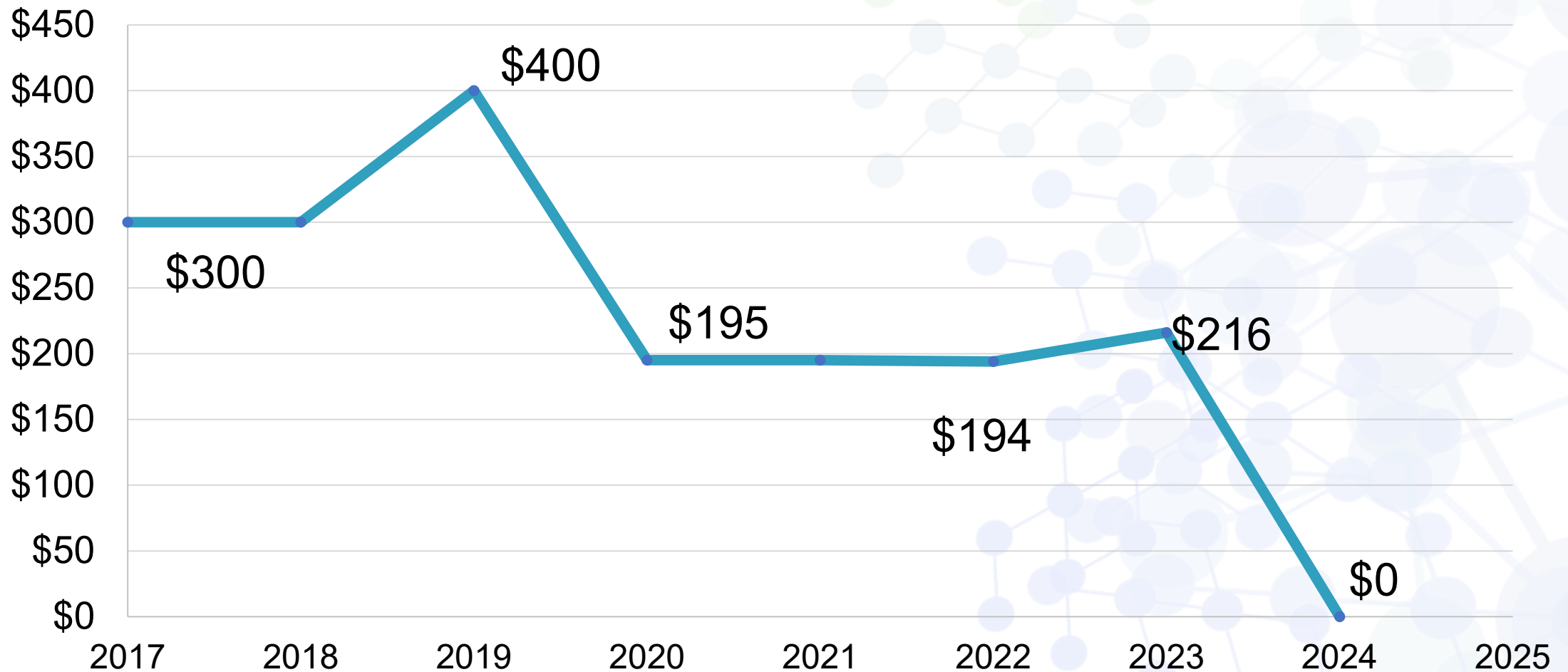
NCI Moonshot Landscape



Interactive map available
Contact: Chris Siemon
siemonc@nih.gov

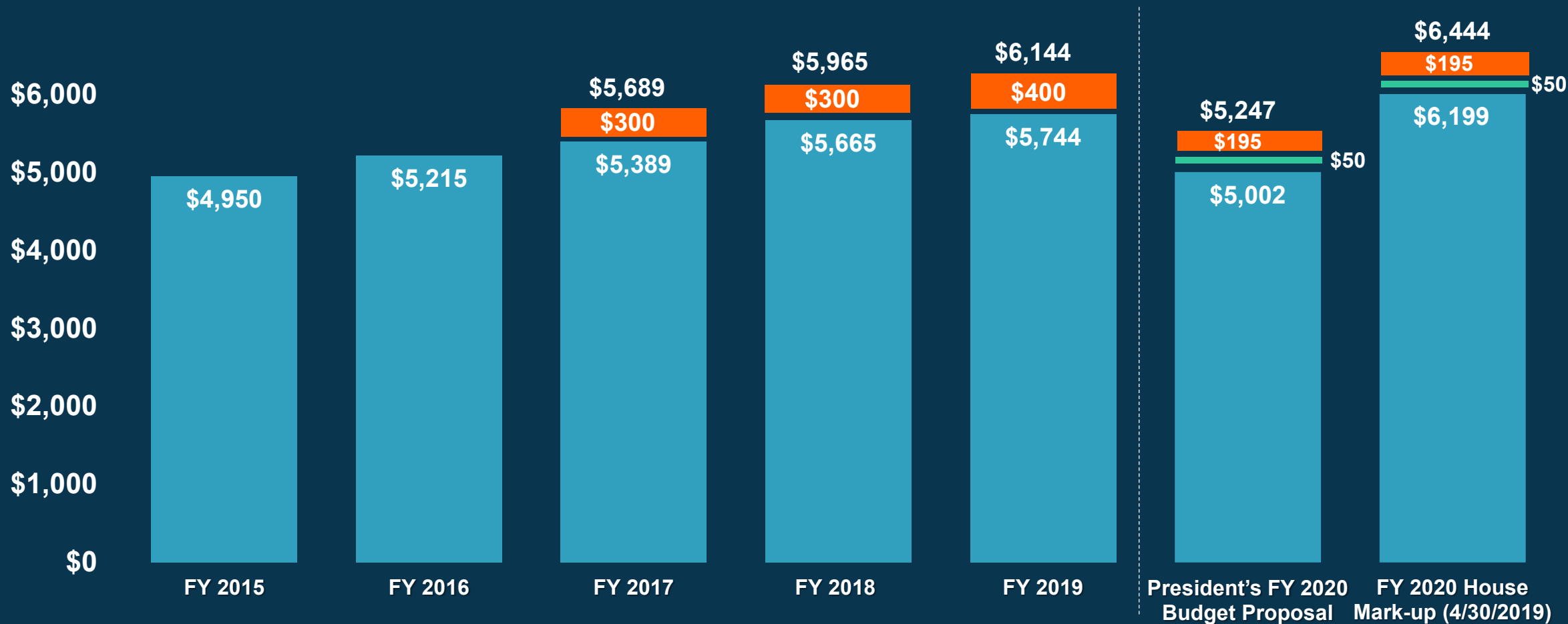
Cancer Moonshot

Funding Authorized under 21st Century Cures Act (dollars in millions)



NCI Appropriations FY 2015 – 2020 (in millions)

21st Century Cures Act - orange
Childhood Cancer Initiative - green





NCI/NIH BUDGET PROCESS FOR REGULAR APPROPRIATION

STEP 1



White House OMB coordinates with federal agencies to formulate the President's budget proposal

STEP 2



Congressional appropriations committees consider President's proposal & prepare legislation

FY 2020

STEP 3



Congress reconciles & finalizes appropriations legislation & sends to the President

STEP 4



President signs the appropriations bill into law making funds available for NIH & NCI

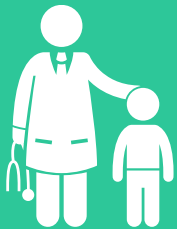
FY 2019

Two New NCI Working Groups

**Internal
Working Group
on Screening
and Early
Detection**

**Board of
Scientific
Advisors Ad
Hoc Working
Group on
Prevention**

Four Areas of Added Emphasis



**CHILDHOOD
CANCERS**



**INVESTIGATOR-
INITIATED
RESEARCH**



**HEALTH
DISPARITIES**



**DRUG
RESISTANCE**

Four Areas of Added Emphasis



**CHILDHOOD
CANCERS**



**INVESTIGATOR-
INITIATED
RESEARCH**



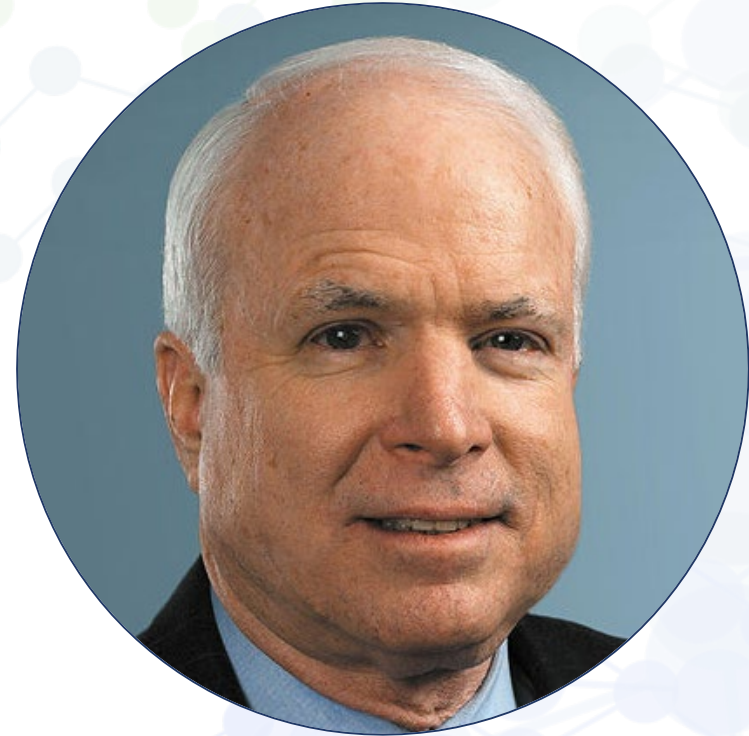
**HEALTH
DISPARITIES**



**THERAPEUTIC
RESISTANCE**



President Jimmy Carter
Metastatic melanoma



Senator John McCain
Glioblastoma

Contribution of NIH funding to new drug approvals 2010–2016

PNAS | March 6, 2018 | vol. 115 | no. 10 | 2329–2334

Ekaterina Galkina Cleary, Jennifer M. Beierlein, Navleen Surjit Khanuja, Laura M. McNamee, and Fred D. Ledley

^aCenter for Integration of Science and Industry, Bentley University, Waltham, MA 02452; ^bDepartment of Natural and Applied Sciences, Bentley University, Waltham, MA 02452; and ^cDepartment of Management, Bentley University, Waltham, MA 02452

**“ ...NIH funding contributed to
every one of the 210 new drugs
approved by the Food and Drug
Administration from 2010–2016.**

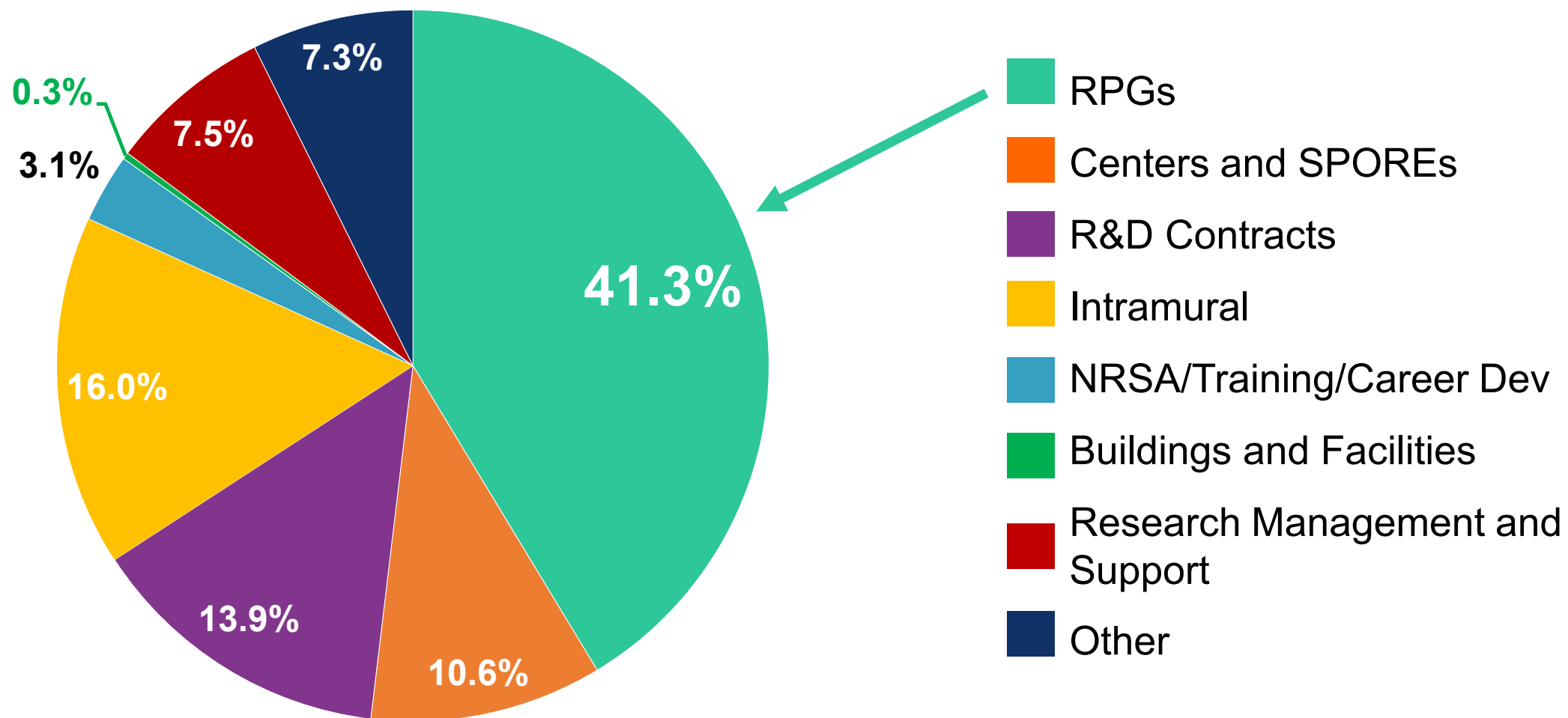
”

Strong support for RPGs - FY 2013-19

- Increases to the RPG pool several fiscal years starting with 2014
 - Established 7-year awards for Outstanding Investigators
 - Extended many ESI awards from 5 to 7 years with the R37 & preserved higher payline for ESIs
- R21 (2-year grants) awards have **decreased**
 - R01 applications have **increased by almost 50%**
 - *Paylines and success rates*

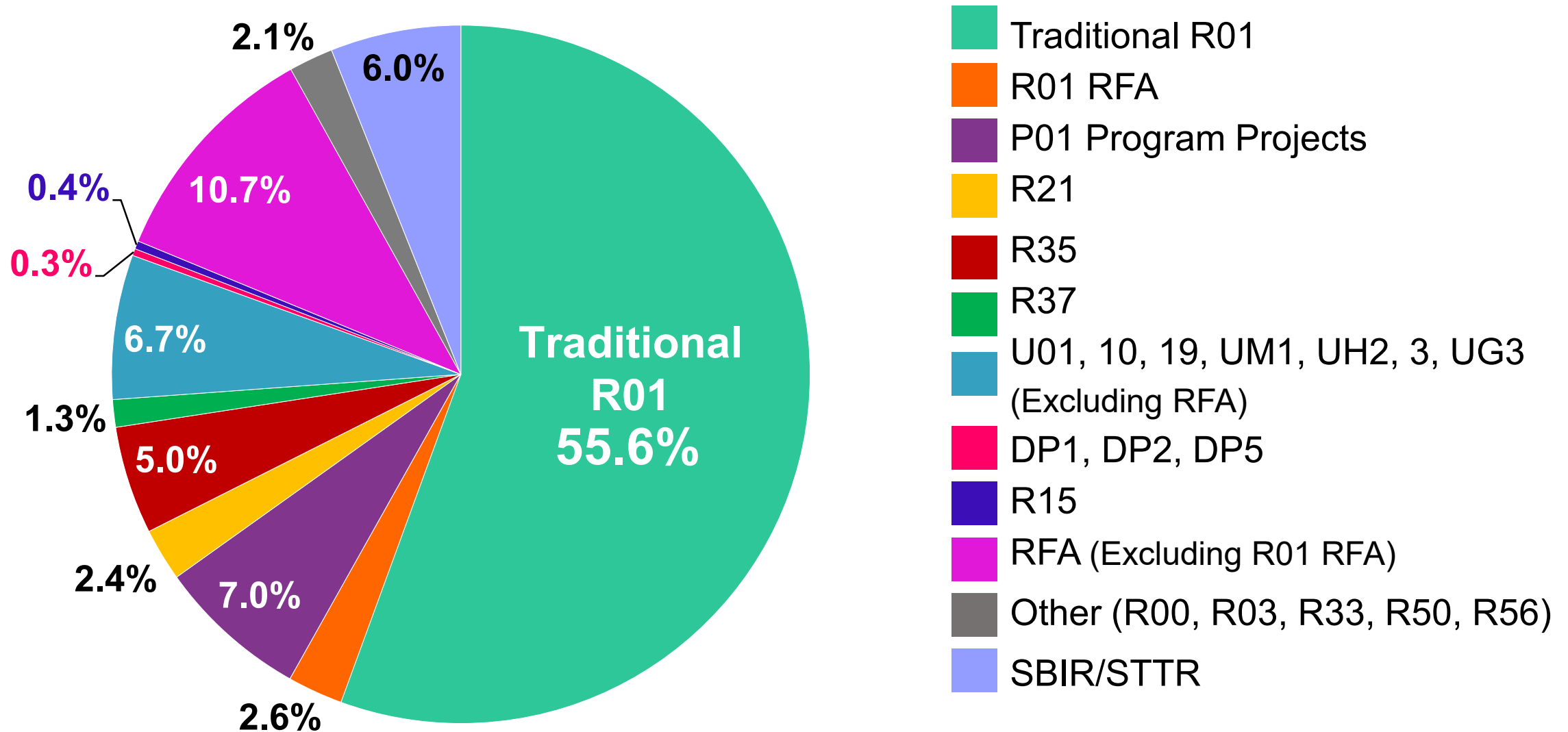


NCI Budget – FY 2018



Includes Cancer Moonshot/21st Century Cures Act funding and expenditures.

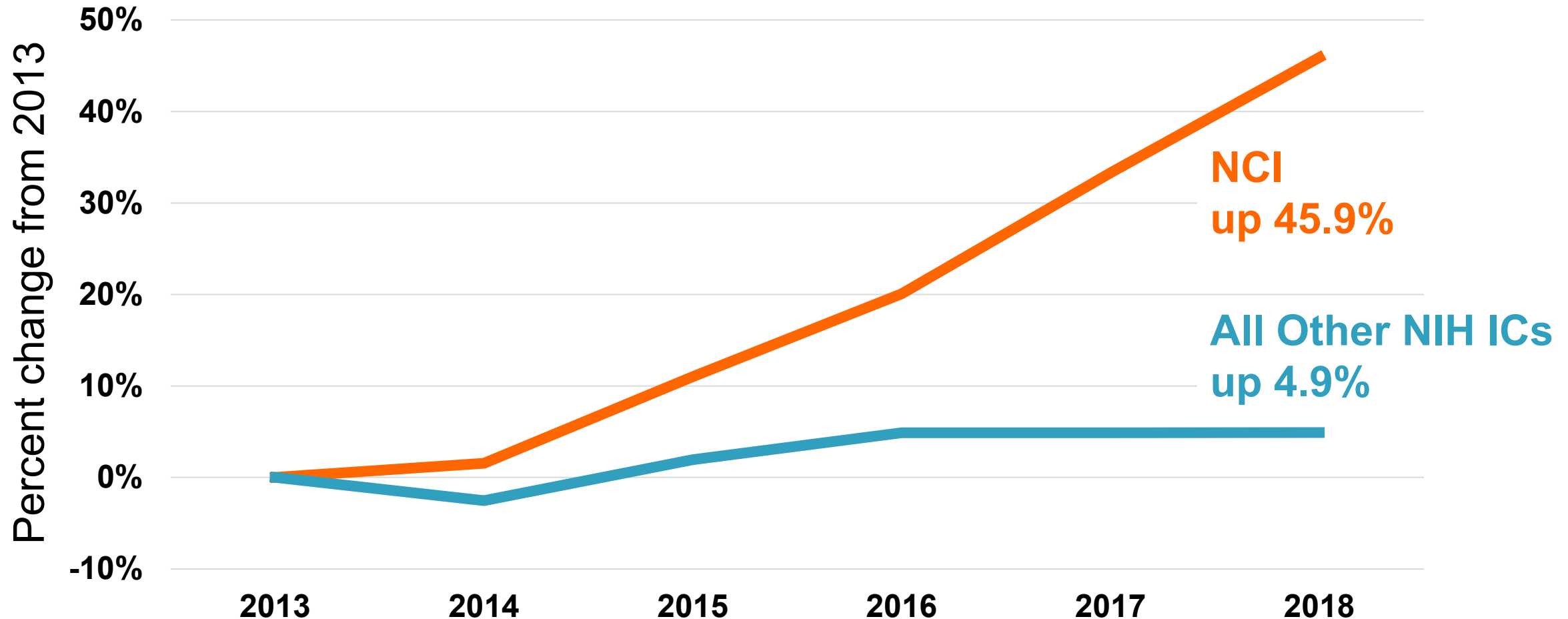
RPG Funds - FY 2018



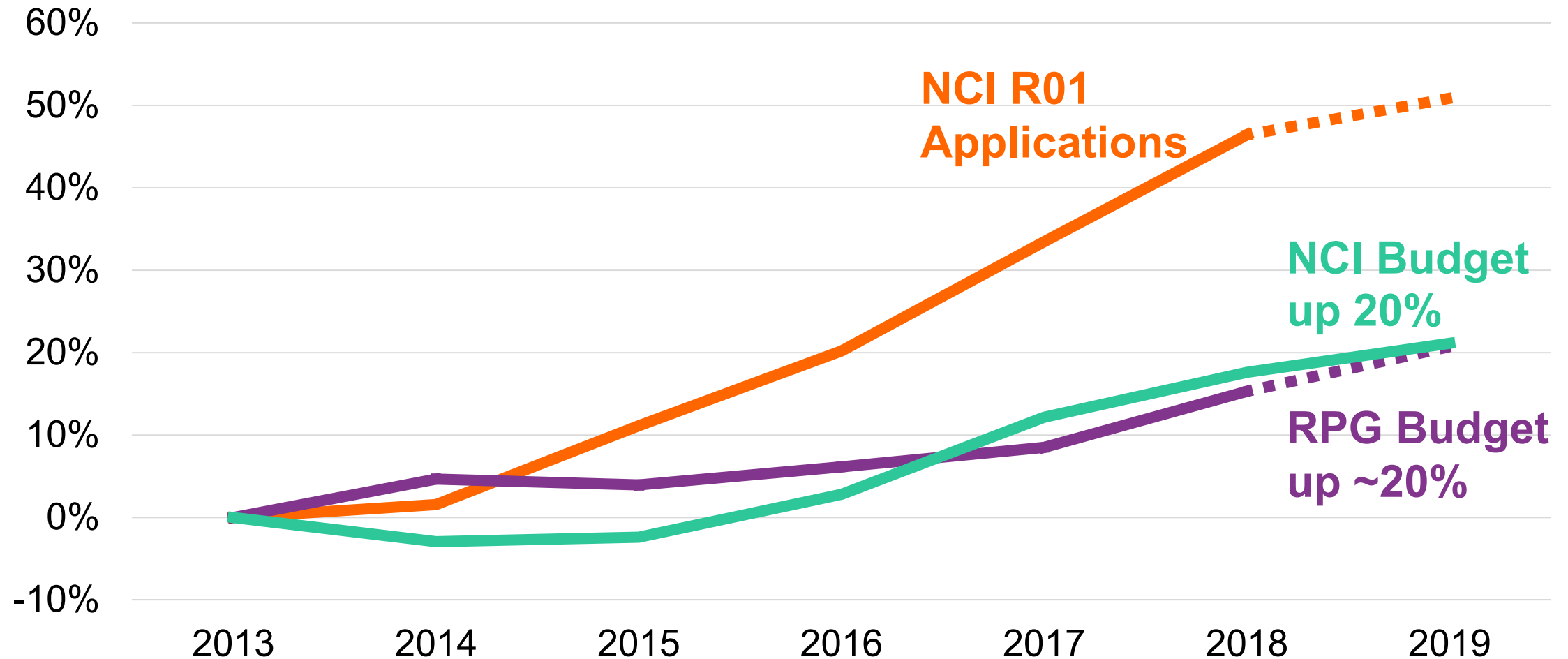
Includes Cancer Moonshot/21st Century Cures Act funding and expenditures.

Dramatic Increase in R01 Applications 2013 - 2018

Competing R01 Applications, NCI vs All Other ICs



Competing R01 **applications** vs. budgets for NCI & RPGs: Percent change since FY 2013



Success rates from 2013 to 2018 have increased for NIH overall but decreased for NCI

2013 NIH Success Rates by Institute/Center

Institute/Center	Applications	Awards	Success Rates
NEI	1,128	267	23.70%
NIDCD	721	162	22.50%
NIDDK	2,760	579	21.00%
NHGRI	341	70	20.50%
OD ORIP-SEPA	55	11	20.00%
NIDCR	718	143	19.90%
NIGMS	4,158	826	19.90%
NINDS	3,551	702	19.80%
NIAAA	853	166	19.50%
NIDA	1,874	365	19.50%
NIAID	5,367	1,008	18.80%
NIMH	2,736	512	18.70%
NHLBI	4,331	734	16.90%
FY13 TOTALS	49,581	8,310	16.80%
NIAMS	1,635	260	15.90%
NIEHS	1,028	157	15.30%
FIC	137	20	14.60%
NCI	7,975	1,095	13.70%
NIBIB	1,329	182	13.70%
NIA	2,674	365	13.60%
NLM	106	13	12.30%
NCCAM	405	47	11.60%
NICHD	3,269	354	10.80%
OD COMMON FUND	1,434	132	9.20%
NINR	581	53	9.10%
NIMHD	280	12	4.30%

2018 NIH Success Rates by Institute/Center

Institute/Center	Applications	Awards	Success Rates
NCATS	66	23	34.80%
NIGMS	3,835	1,118	29.20%
NIA	3,240	937	28.90%
NHGRI	268	75	28.00%
NIDCD	840	228	27.10%
NEI	1,159	310	26.70%
NIAAA	948	253	26.70%
NHLBI	3,960	992	25.10%
NIAID	6,207	1,420	22.90%
NIDCR	906	201	22.20%
NIMH	2,714	602	22.20%
NINDS	4,478	975	21.80%
NIDDK	3,195	689	21.60%
NCCIH	306	62	20.30%
FY18 TOTALS	54,834	11,071	20.20%
FIC	210	41	19.50%
NIDA	2,108	391	18.50%
NICHD	3,033	557	18.40%
OD ORIP-SEPA	73	13	17.80%
NLM 2	186	33	17.70%
NIEHS	1,118	191	17.10%
NIBIB	1,523	256	16.80%
NIAMS	1,589	266	16.70%
NCI	10,282	1,162	11.30%
OD COMMON FUND	1,243	135	10.90%
NIMHD	656	70	10.70%
NINR	691	71	10.30%

Source: https://report.nih.gov/success_rates/Success_ByIC.cfm

Funding Patterns for Competing Research Project Grants - FY14-18

2 R37s included in Other RPGs

	FY2014			FY2015			FY2016			FY2017			FY2018		
	Requested	Funded	Success Rate	Requested	Funded	Success Rate	Requested	Funded	Success Rate	Requested	Funded	Success Rate	Requested	Funded	Success Rate
R01/R37 – Unsolicited ¹	3,849	578	15%	4,550	623	14%	4,785	650	14%	5,263	650	12%	5,864	676	12%
R01 RFAs	391	51	13%	102	12	12%	240	45	19%	309	44	14%	249	35	14%
Total R01/R37	4,240	629	15%	4,652	635	14%	5,025	695	14%	5,572	694	12%	6,113	711	12%
R21 – Unsolicited	2,539	302	12%	2,864	325	11%	3,100	260	8%	1,513	109	7%	2,100	187	9%
R21 RFAs	397	53	13%	250	38	15%	283	35	12%	388	44	11%	310	26	8%
Total R21	2,936	355	12%	3,114	363	12%	3,383	295	9%	1,901	153	8%	2,410	213	9%
R35		-	-	224	43	19%	175	35	20%	141	29	21%	104	20	19%
R03 – Unsolicited	627	93	15%	582	67	12%	484	48	10%	714	90	13%	564	60	11%
Other RFAs ²	226	35	15%	297	34	11%	285	62	22%	443	57	13%	338	54	16%
Other RPGs ³	510	95	19%	656	94	14%	889	95	11%	933	116	12%	788	104	13%
Total Competing RPGs:	8,539	1,207	14%	9,525	1,236	13%	10,241	1,230	12%	9,704	1,139	12%	10,317	1,162	11%

¹Funded R01s include competing revisions. In FY2018 64 R01s were converted to R37s.

²Other RFAs include UM1, R33, R03, R38, P01, U01, UH2 and UG3

³Other RPGs include SI2, DP2, P01, R15, R50, R56, R00, U01, U19, UH2, UH3, R33, UM1 and UG3.

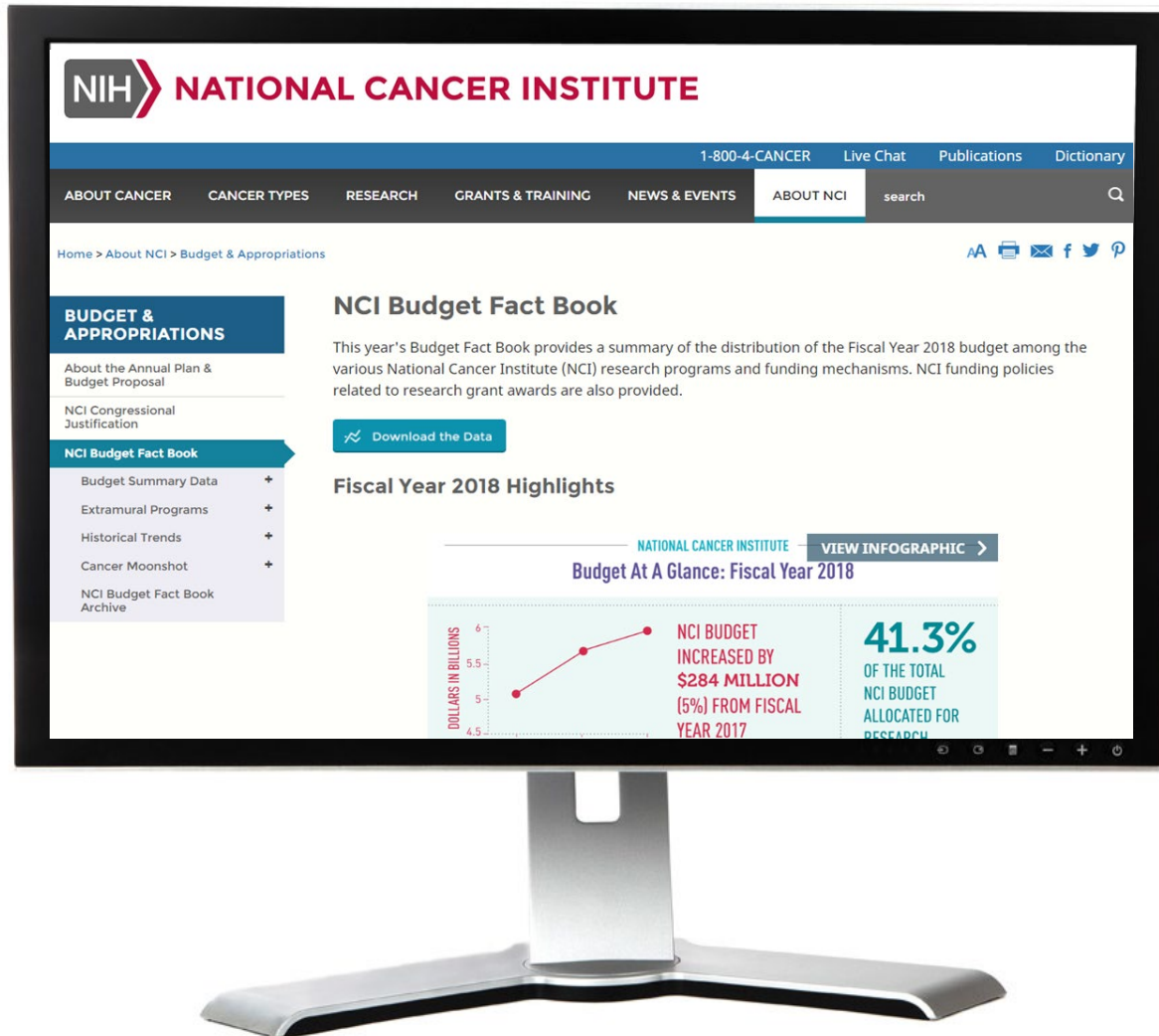
Available online:

https://gsspubssl.nci.nih.gov/blog/articles?funding_patterns/2018

Want more data? NCI Budget Fact Book

cancer.gov > search: **Fact book**

- **Funding Allocated to Major NCI Program Areas**
- **Extramural Funding**
Displays the dollar amount and percent of NCI budget for grants and contracts.
- **Obligations by Budget Mechanism and NCI Division**
- **NIH Management Fund, Service and Supply Fund, and GSA Rent**
- **Special Sources of Funds**
- **Funding for Research Areas**

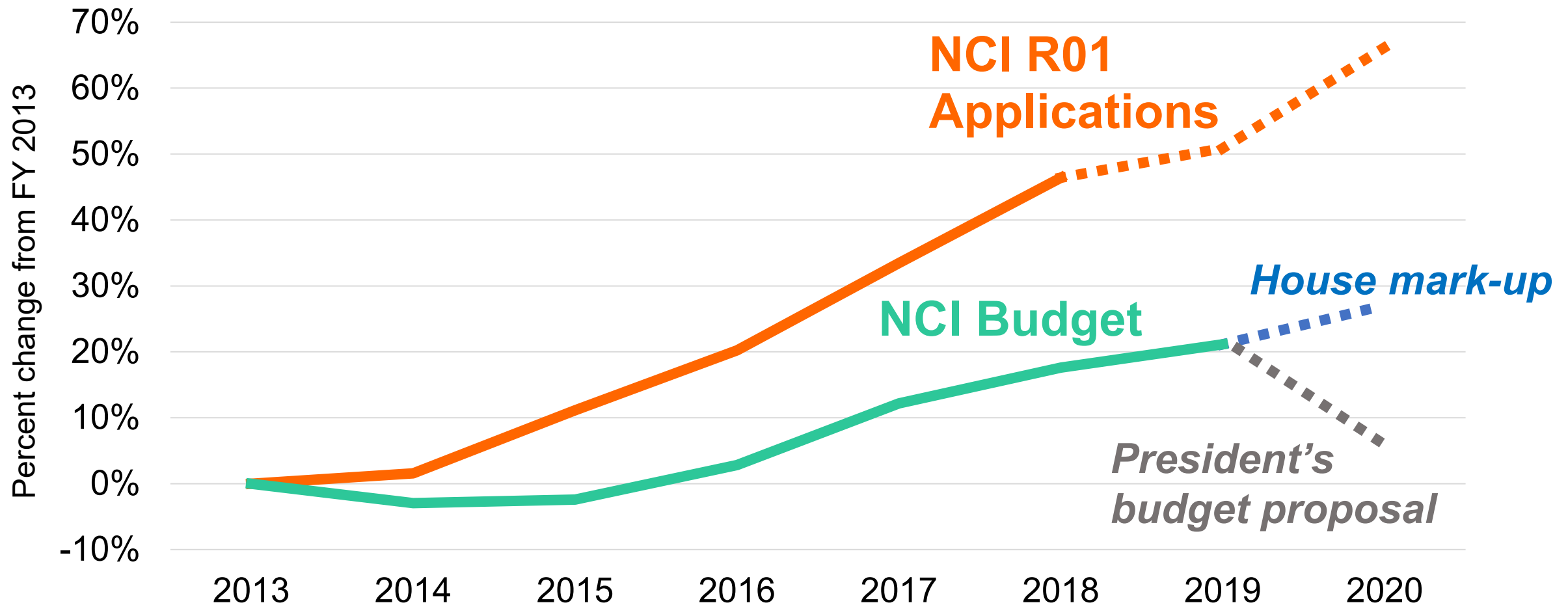


Fundamental Research



- The main source of breakthrough observations that increase our understanding of physiology and pathology
- Needed for major advances in improvement of health

Going Forward: Sustaining Support for RPGs



Recent Leadership Appointments

- Deputy Director for Scientific Strategy and Development - **Dinah Singer**
- Chief of Staff - **Anne Lubenow**
- Deputy Executive Officer - **Eric Cole**
- Director, CBIIT - **Tony Kerlavage**
- Chief Information Officer - **Jeff Shilling**
- Chief Data Scientist, DCEG - **Jonas Almeida**
- Budget Director - **Weston Ricks**

Leadership Vacancies

Director, Center for Global Health (CGH)

Bob Croyle, Acting

Associate Director, Cancer Therapy Evaluation Program (CTEP)

Meg Mooney, Acting

Director, Division of Cancer Prevention (DCP)

Debbie Winn, Acting



**NATIONAL
CANCER
INSTITUTE**

www.cancer.gov

www.cancer.gov/espanol