

Early Career Investigators

NCI's Proposal for Implementing the Next Generation Researchers Initiative (NGRI)

Background/History

- NIH proposed a **Grant Support Index (GSI)** in Spring 2017
 - Intent was to fund more investigators, including more early career PIs, by limiting the total number of grants an individual could hold
- Following pushback from the community, NIH proposed the **Next Generation Researchers Initiative (NGRI)**, beginning in June 2017
- The NGRI policy was released on August 31, 2017 (<https://grants.nih.gov/grants/guide/notice-files/NOT-OD-17-101.html>)
 - The notice cites that the policy “implements, in part, Section 2021 of the 21st Century Cures Act”

The NIH NGRI Policy – in brief

- **Early Stage Investigator (ESI)** applications with meritorious scores will be prioritized for funding
 - ESI defined as ≤ 10 years from terminal degree or clinical training without having successfully competed for substantial NIH funding
- **Early Established Investigators (EEI; a new category)** may be prioritized for funding of meritorious research applications if they are either:
 - At risk for losing all NIH research support if they are not funded by competing awards this year, *OR*
 - Supported by only one active award
 - EEI ≤ 10 years since receiving first substantial competing award as an ESI

ESIs in FY 2017

- NIH stated goals for FY17
 - Across the NIH, fund approximately 200 more ESIs than in FY16
 - Across the NIH, fund 200 more EEIs than in FY16
 - NIH ICs were supplied with targets
 - NCI was provided a target of 150 ESIs (This number would have resulted in not funding many EIs at risk of losing all R01 funding)
- NCI awarded ~10% more ESI applications in FY17 compared to FY16
 - FY16: 86 R01s and 2 DP2s
 - FY17: 93 R01s, 2 U01s, and 6 DP2s

NCI Implementation of NGRI

- After NIH launched NGRI, NCI began a detailed study of the characteristics of the ESI segment of the NCI-funded workforce
- A data-driven approach was taken for planning any changes to NCI's support of early career investigators
- An internal NCI Working Group was convened in September 2017 to review the data and develop policies to support early career investigators

Proposed Pilot Approach for NCI

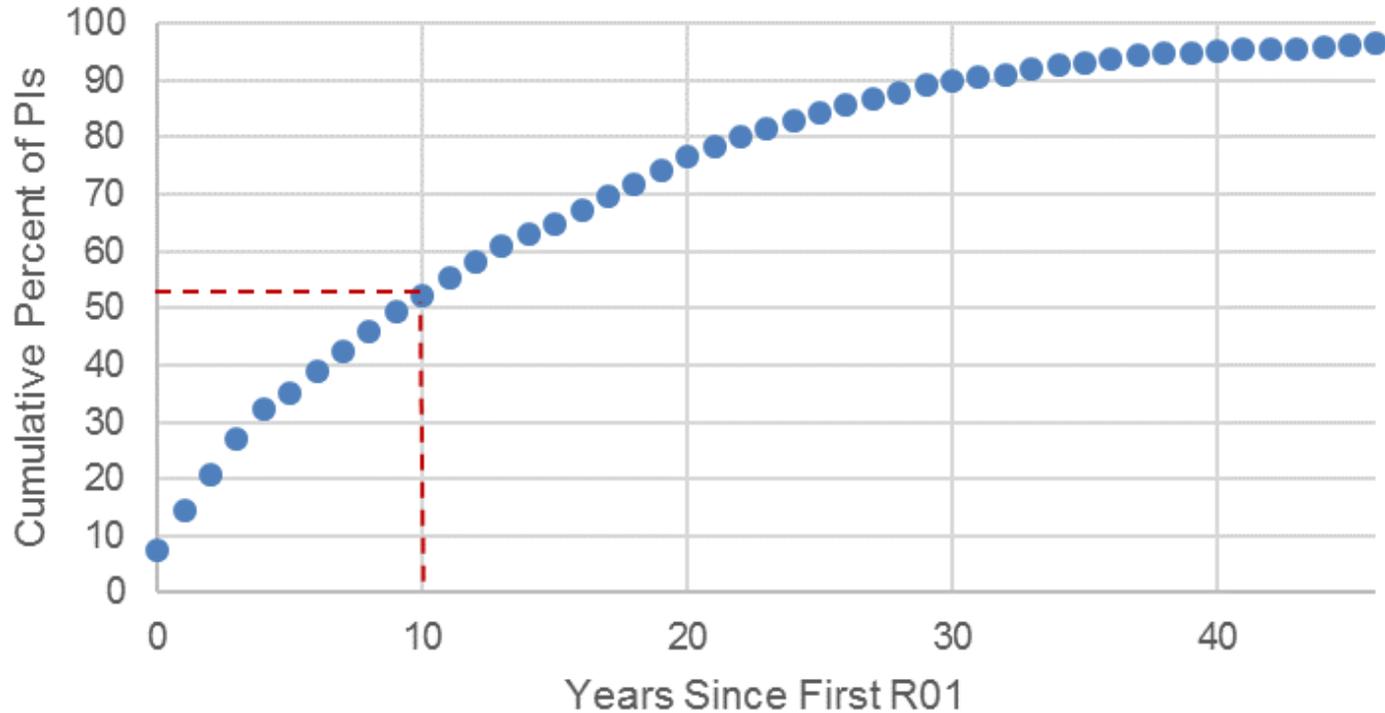
- Continue to fund more R01s from early career investigators whenever possible
 - Applications should have received a meritorious score (e.g., 25th percentile or better)
 - Applications should have no major flaws to be considered for exception pay
- Adopt a six-point plan for extending special consideration to early career investigators
 - Based on extensive (and still ongoing) analysis of NCI funded investigators
 - Only a small proportion of the data will be shown today, additional data are available to interested Board members

A Six-Point Pilot Proposal for NCI

1. Create the NCI “Early Cancer Investigator” (ECI)
 - ECI is defined as a PI within 15 years of terminal degree or clinical training, whichever is later
2. Award successful ECI applications for 5+2 years
3. Encourage successful ECI awardees to participate in an enhanced ECI Mentoring Program
4. Continue to expand efforts to increase diversity of the NCI-funded workforce
5. For any PI at risk of losing all substantial funding, continue to:
 - Use bridge awards
 - Provide funding by exception
6. Fund more ECI applications as budget allows

Greater Than 50% of PIs on NCI R01 Equivalent Awards are Within 10 Years of Their First R01

FY 2016 NCI R01 equivalent PIs (n=3360)

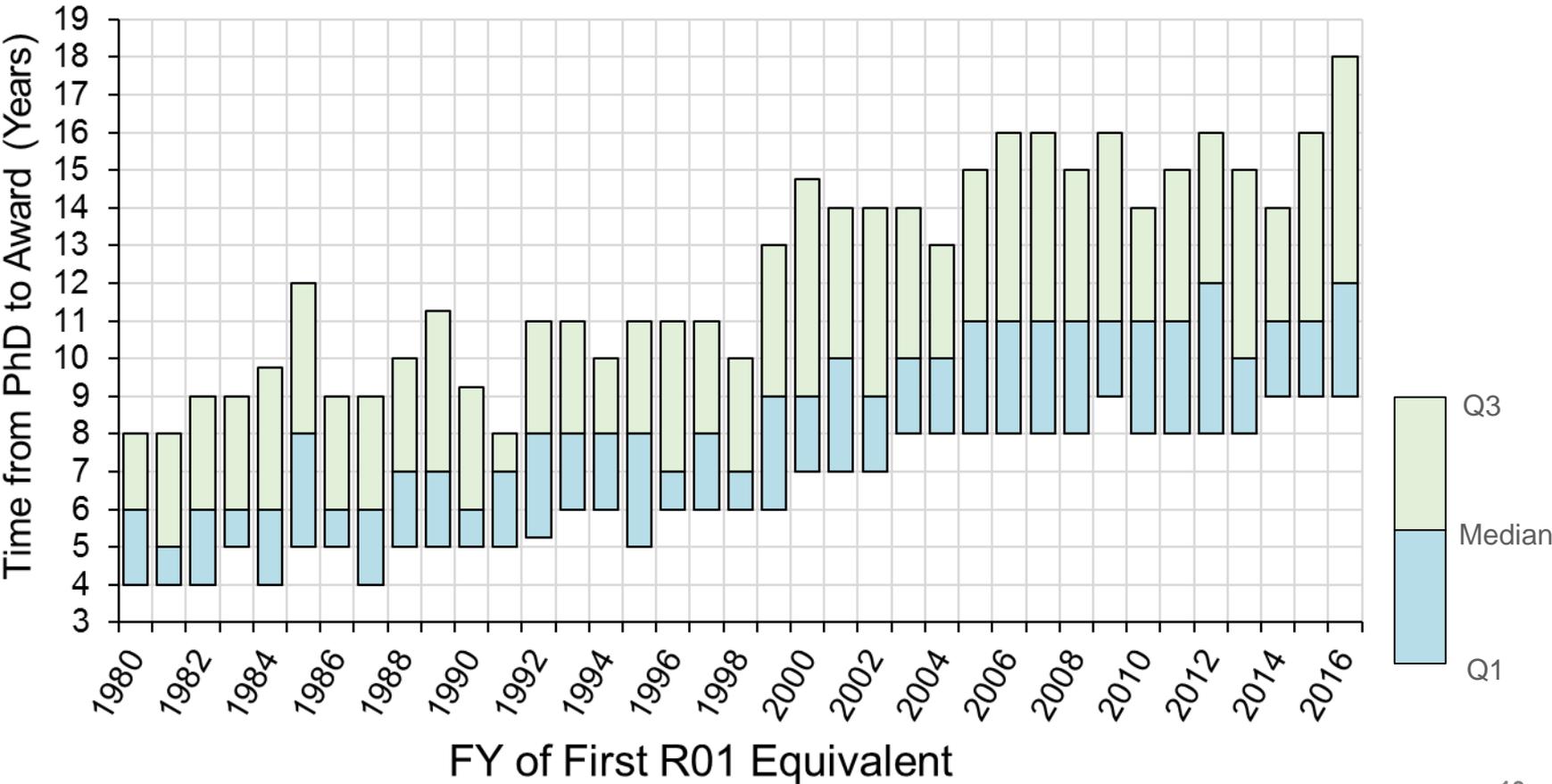


Point 1: Create the NCI “Early Cancer Investigator” (ECI)

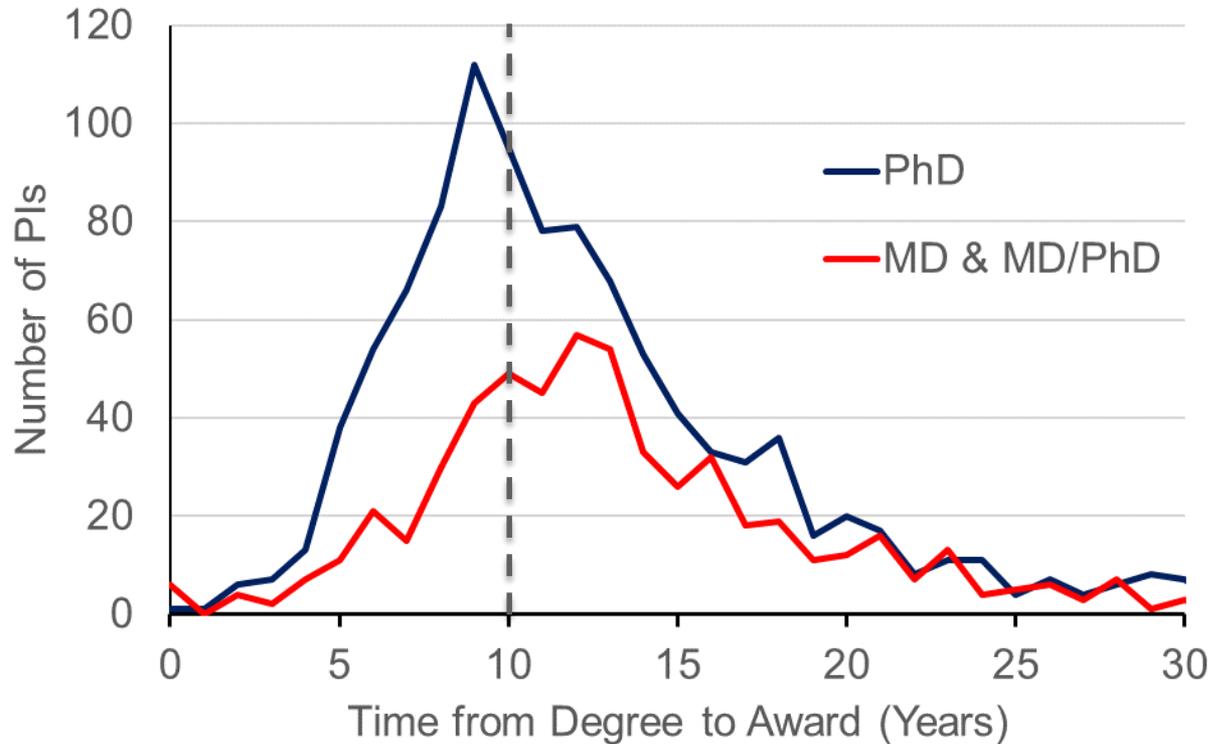
– ECI is defined as a PI within 15 years of terminal degree or clinical training, whichever is later

- Rationale
 - The length of time from degree to 1st R01 award has increased for NCI PIs, with many investigators just missing the 10-year cutoff
 - Some K awardees are missing the NIH ESI 10-year cutoff
 - Different disciplines require varied time investments
- This approach more directly benefits PhDs
- With NCAB/BSA approval, we will initiate conversations with NIH about how best to track the ECI group

Time from Degree to First NCI R01 Award Has Increased Over Time for PhDs

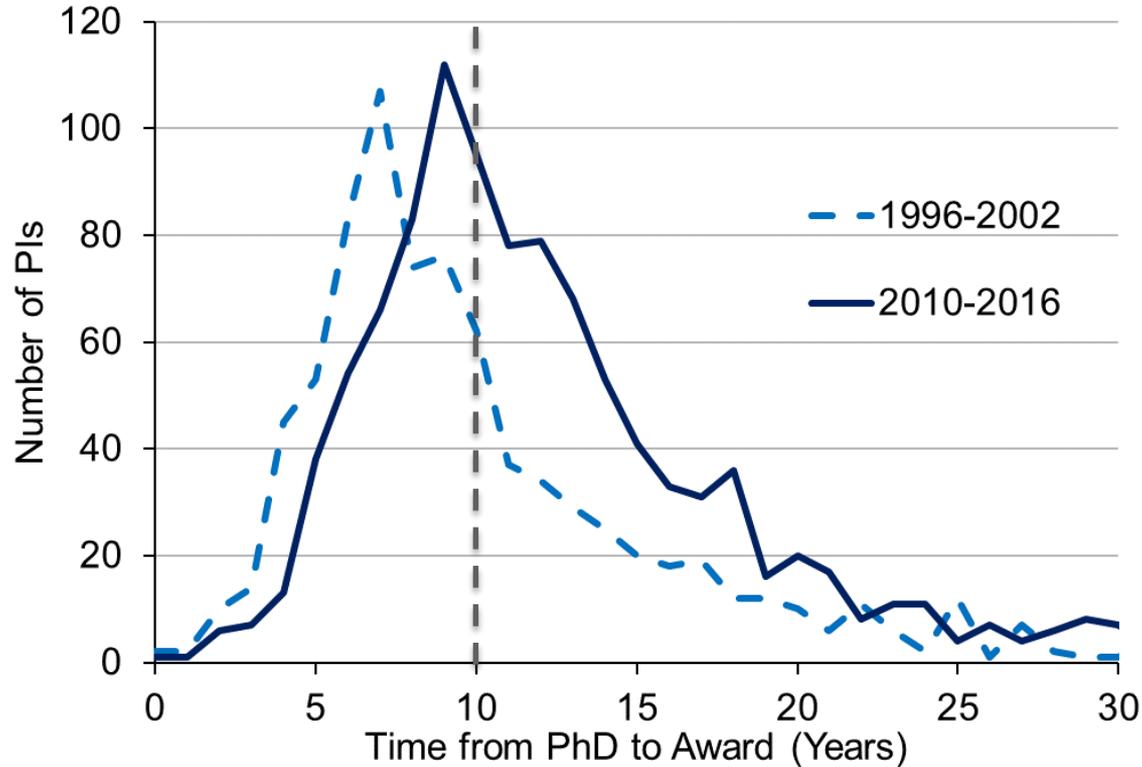


Time from Degree to First NCI R01 Award FY 2010-2016



- Time to first award has lengthened to a median of over 10 years for NCI PIs
- Defining ESIs within 10 years is an arbitrary cutoff for NCI

Time from Degree to First NCI R01 Award is Increasing for PhDs

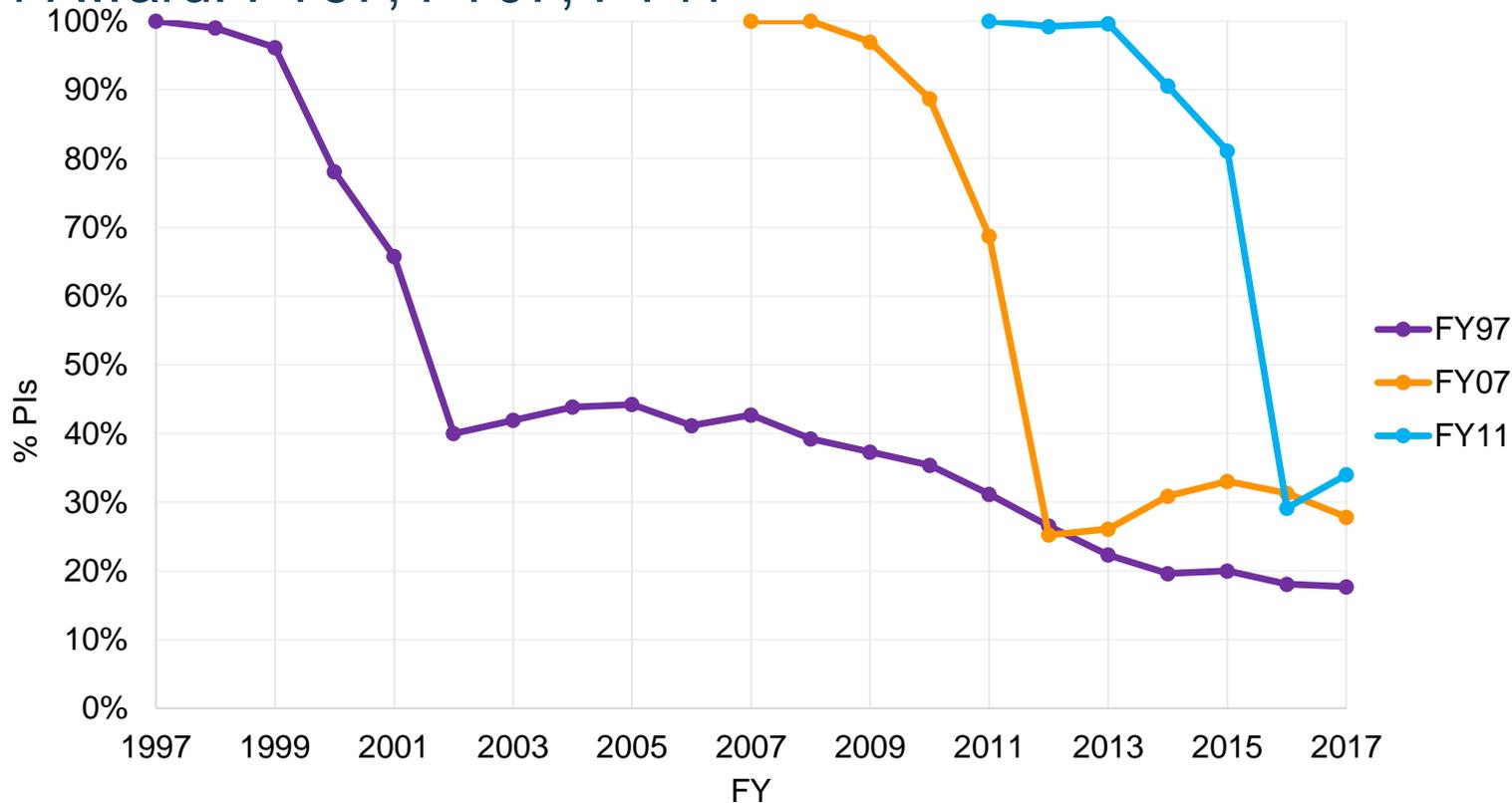


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- Defining ESIs within 10 years is an arbitrary cutoff for NCI

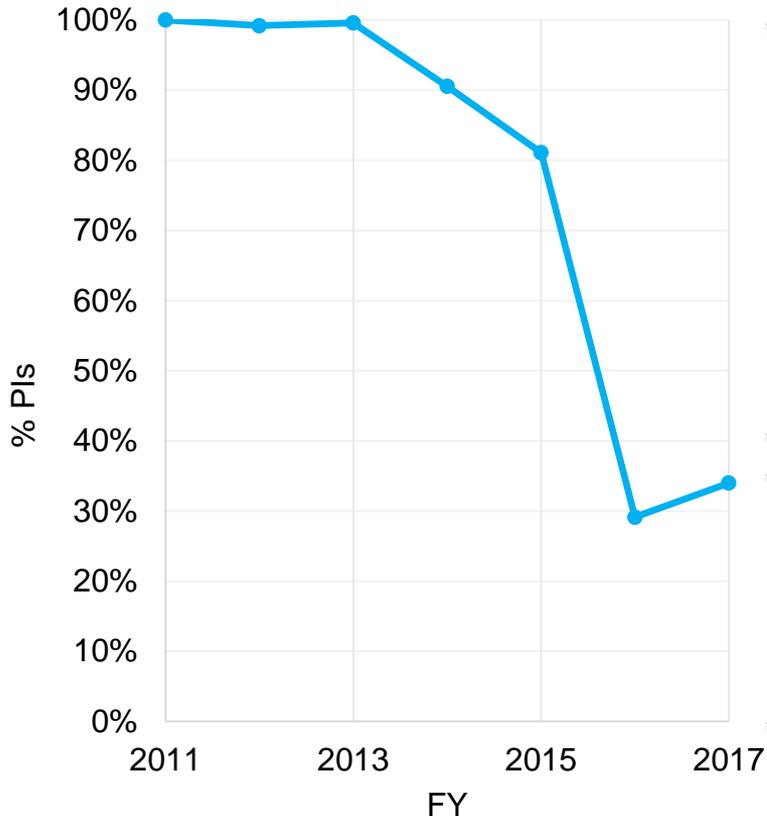
Point 2: Award Successful ECI Applications for 5+2 Years

- Rationale
 - Would enable:
 - More progress and publications before need to compete for renewal
 - More flexibility to stagger awards by starting a second project before competing renewal of first
 - More time for innovation and/or risk taking
 - More stability, reduced stress (e.g., for PIs with young families)
 - Support ECI awardees with expanded intensive mentoring and training
 - From NCI: new grantee workshops, ECI program director, annual meetings, webinars, etc.
 - From institutions
 - Review at year 3 or 4 for 2-year extension

Percent of PIs Receiving NCI R01 Equivalent Funding After First R01 Award: FY97, FY07, FY11



Completing the Picture of FY11 First R01 Cohort



- 14% had no R01 applications
- 45% submitted one or more applications but were not successful

- 7% have a non-NCI R01
- 34% have an NCI R01

Most of these PIs have new projects and not renewals of 1st R01

Point 3: Provide Mentoring for ECIs

- Expand support for investigators who receive “5+2” awards with:
 - Intensive mentoring and training from NIH
 - Engagement from their institutions
- Will be necessary to develop strategies to evaluate impact of these approaches

Point 4: Continue to Expand Efforts to Increase Diversity of the NCI-Funded Workforce

- Rationale
 - For ESIs, funding rate of underrepresented groups (URG) is significantly lower than that of whites
 - For EIs, funding rate of URG is similar, but overall percentage of NCI R01 PIs from URGs is very low
 - Representation of women in the overall NCI R01 pool is significantly lower than that of men
- Additional approaches to increase diversity of NCI-funded workforce
 - ECI-specific program notice modeled after Diversity Supplement language
 - Expand outreach
 - Work closely with institutions

Point 5: Continue to Emphasize Bridge Awards (R56) and Funding by Exception for Any PI at Risk of Losing All Substantial Funding

- Any at-risk EI with a meritorious R01 application would be considered, regardless of career stage
- Other NIH institutes are taking this approach
 - Plan to bridge at-risk EIs
 - Followed this process in FY17

Point 6: Fund More R01s from Early Career Investigators

Fund more applications as budget allows

- Applications should have received a meritorious score (e.g., 25th percentile or better)
- Applications should have no major flaws to be considered for exception pay

Monitoring, Metrics, and Evaluation

- Monitor years from degree to first R01
 - Degree to first position
 - First position to R01
 - Impact of research field (e.g., computational vs. drug development)
- Track success of ECIs
 - Second awards for “5+2” ECI awardees
 - First competing renewals
- Monitor gender, race/ethnicity, age of applicants and awardees

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Additional Questions?

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**NATIONAL
CANCER
INSTITUTE**

www.cancer.gov

www.cancer.gov/espanol

Diversity Supplement Language

In Part 2. Section I. <https://grants.nih.gov/grants/guide/pa-files/PA-16-288.html>

“Enhancing Diversity: Fostering diversity by addressing underrepresentation in the scientific research workforce is a key component of the NIH strategy to identify, develop, support and maintain the quality of our scientific human capital (NOT-OD-15-053).

Every facet of the United States scientific research enterprise—from basic laboratory research to clinical and translational research to policy formation—requires superior intellect, creativity and a wide range of skill sets and viewpoints. NIH’s ability to help ensure that the nation remains a global leader in scientific discovery and innovation is dependent upon a pool of highly talented scientists from diverse backgrounds, particularly those from underrepresented groups, who will help to further NIH’s mission.

Research shows that diverse teams working together and capitalizing on innovative ideas and distinct perspectives outperform homogenous teams. Scientists and trainees from diverse backgrounds and life experiences bring different perspectives, creativity, and individual enterprise to address complex scientific problems. There are many benefits that flow from a diverse NIH-supported scientific workforce, including: fostering scientific innovation, enhancing global competitiveness, contributing to robust learning environments, improving the quality of the researchers, advancing the likelihood that underserved or health disparity populations participate in, and benefit from health research, and enhancing public trust.

In spite of tremendous advancements in scientific research, information, educational and research opportunities are not equally available to all. NIH encourages institutions to diversify their student, postdoctorate and faculty populations to enhance the participation of individuals from groups identified as underrepresented in the biomedical, clinical, behavioral and social sciences, such as:...”