

**National Cancer Advisory Board (NCAB)
Subcommittee on Planning and Budget**

**Gaithersburg Marriott Washingtonian Center
9751 Washington Boulevard
Gaithersburg, MD 20878
June 9, 2019
7:30–9:00 p.m. EST**

SUMMARY

Subcommittee Members Present:

Dr. Charles Sawyers, Chair
Dr. Peter Adamson
Dr. Deborah Bruner
Dr. Yuan Chang
Dr. Scott W. Hiebert
Dr. Timothy Ley

NCAB Member:

Dr. Elizabeth Jaffee

BSA Members:

Dr. Otis Brawley
Dr. Carol Ferrans
Dr. Kimryn Rathmell
Dr. Robert Vonderheide

NCI Members:

Ms. M.K. Holohan
Dr. Douglas Lowy
Mr. Weston Ricks
Dr. Dinah Singer

Other Participants:

Ms. Kelli Marciel
Dr. Shamala Srinivas
Ms. Joy Wiszneauckas

Welcome and Opening Remarks

Dr. Charles Sawyers, Subcommittee Chair, called the meeting to order at 7:31 p.m. He welcomed participants to the meeting of the Subcommittee and asked them to introduce themselves.

Discussion of Research Project Grant (RPG) Paylines

Dr. Douglas Lowy, Acting Director of the National Cancer Institute (NCI), delivered a presentation on an analysis of RPGs at the National Institutes of Health (NIH) and, specifically, at the NCI.

Dr. Lowy emphasized what the RPG pool does not include, which is funding for cancer centers or other specialized centers, Specialized Programs of Research Excellence (SPOREs), clinical cooperative groups, F99s, R25s, National Research Service Awards, S06s, R38s, resource grants, conference grants and agreements, K awards, research and development contracts, intramural research, research management

Dr. Lowy presented data demonstrating that RPGs represent 41.3 percent of the NCI budget. Dr. Ley asked how the proportion of the budget dedicated to RPGs at the NCI compares to other ICs. Dr. Lowy explained that RPG funding represents closer to 50 percent of the budget at other ICs but reminded participants that those ICs do not have cancer centers or SPORES, and many do not have cooperative groups. The NCI also has the largest proportion of the budget dedicated to intramural research (16%), primarily because of epidemiology research.

Dr. Lowy presented a chart showing NCI RPG funding by mechanism. Traditional R01 funding comprises 55.6 percent of all NCI RPG funding. Dr. Lowy presented a chart indicating that total award costs of competing R01s are lower than for non-NCI awards at NIH. This finding answered a question posed by Dr. Elizabeth Jaffee.

Dr. Lowy showed trends in the number and funding amounts for RPG awards by mechanism. The number of R01 awards predominate each year and increased from slightly under 600 in 2013 to slightly less than 700 in 2018. R01 dollar amounts also increased during this time period. Dr. Lowy added that the number of R21s decreased substantially after the NCI stopped participating in the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Omnibus. Dr. Ley asked about trends in awards for early stage investigators. Dr. Lowy explained that an NCI analysis in 2016 revealed that awards primarily went to experienced investigators. For this reason, the NCI began to increase the number of awards to ESIs in 2017. The proportion of awards to ESIs increased by approximately 25 percent in 2018. A participant commented that the number of P01s seemed low. Dr. Lowy explained that the NCI currently funds just under 100 P01s. The NCI inadvertently decreased the number of new P01s through 2016 but started to increase the number of P01s after the analysis in 2016. The dollar amount of the average P01 also increased from approximately \$2 to \$2.5 million in total costs. The funding amount for an average R01 is approximately \$450,000. Dr. Sawyers asked whether funding for the new Outstanding Investigator Award (R35) was supported by the R01 funding pool. Dr. Lowy explained that R35 recipients are required to have at least one major award, which they must relinquish on receiving the R35 award. The cost of this new award, therefore, has been relatively modest. The total number of ESI awards will be greater than the total number of R35 awards over 7 years. Dr. Lowy showed that the unsolicited application success rate went from 15 to 12 percent from 2013 to 2018. The NCI publishes data on funding patterns in its annual *NCI Budget Fact Book*.

Although the number of unsolicited R01s is increasing, the number of R35s is decreasing slightly. The competing RPG pool went from approximately \$400 million in 2013 to slightly over \$500 million in 2015. This funding amount has not changed substantially since 2015 to allow funds to cover out-year costs. It was necessary to allow funds for out-year costs because the total RPG pool has increased by approximately \$300 million since 2013, and the NCI is expecting to add another \$100 million this year. These increases in total RPG pool funding allowed the NCI to fully support Type 5 awards in fiscal years 2015 through 2018. The NCI only was able to fund Type 5 awards at 97 percent in 2019. Type 5 awards generally are large, which allows the NCI to use a small proportion of funding of these awards to support competing Type 1 and Type 2 awards. Dr. Lowy explained that Type 5 awards are all funded in previous years and are continuing.

Dr. Lowy projected that RPG pool funding will be \$22.35 billion at the end of 2019, not including SBIR funding. To fully fund Type 5 awards, the NCI would need to increase its budget by \$165 million by fiscal year 2021. The NCI has been adding approximately \$75 million every year. Dr. Lowy estimated that the NCI can safely place 50 cents into the RPG pool for every dollar increase in the NCI budget. Dr. Sawyers noted the importance of data on the impact of a 3 percent cut in the commitment to continuing (Type 5) grants. Dr. Adamson added that the figures for out-years might be misleading.

Dr. Lowy presented estimates of the expected House of Representatives markup of the President's Budget, which would represent an increase in the NCI budget. The proposed Senate budget still is unknown. Ms. M.K. Holohan noted that Congress would like to see more total awards across the NIH, given the 4-year trend of budget increases.

Dr. Lowy suggested that the trend toward substantial increases in R01 applications to the NCI indicates strong interest in cancer in the biomedical research community, but other participants suggested other reasons for the trend. Dr. Scott Hiebert cited the NIGMS funding caps as possible reasons for some applications being submitted to the NCI that might otherwise have gone to NIGMS. Dr. Lowy agreed that it is difficult to support cancer research solely on the funding amounts offered by NIGMS.

Dr. Hiebert suggested that the Cancer MoonshotSM might have increased interest in cancer research, but the trend toward rapid increases in NCI R01 applications began before the Cancer MoonshotSM. The Cancer MoonshotSM might have helped to sustain that increase. Dr. Robert Vonderheide questioned whether investigators would apply to the NCI, with its low payline, simply because of strong interest in cancer. He asked about a disincentive for applying to other ICs. Dr. Lowy responded that applications are not scoring better at than NCI than at other ICs. Dr. Otis Brawley suggested that feedback on a grant submitted to the NCI might be considered valuable. This allows applicants to improve their application and increase the possibility of a successful resubmission. Dr. Lowy responded that this possibility had not been considered. Dr. Dinah Singer explained that applications are assigned to ICs based on NIH guidelines, and ICs define what they will and will not accept. Applications are reviewed by the Center for Scientific Review.

Dr. Hiebert raised the question of how to respond to the massive increase in R01 applications to the NCI. Some participants mentioned redistribution. Dr. Lowy advised that the bulk of cancer research be supported through the NCI, although much quality cancer research also is supported outside of the NCI. ICs are more likely support the cancer research that their leadership deem is relevant to their specific IC. Dr. Ley asked about the willingness of other IC Directors to fund research on cancers relevant to their ICs. NCI leadership has discussed this issue with other ICs, and Dr. Lowy indicated that he was willing to continue to explore this option. Dr. Ley also suggested the asking NIH leadership to examine the substantial increase in applications to the NCI. Participants discussed the option of a funding increase, which is unlikely without strong congressional interest, according to Dr. Holohan. In this respect, the NCI might suffer from being a disease-specific Institute. She explained that NIH leadership sets the parameters for proportional shares of the budget among ICs in its budget request.

Dr. Sawyers asked about the U.S. Department of Defense (DoD) program for supporting cancer research and the number of applications to that program. Dr. Lowy agreed to investigate this question. Dr. Kimryn Rathnell leads a DoD panel that is examining funding. Dr. Lowy and others mentioned some challenges to collaborating with the DoD and the need to justify any apparent duplication across the programs.

Dr. Ley asked about the number of big RPG awards per investigator. Dr. Lowy responded that this number had remained constant since 2013. Dr. Vonderheide mentioned that the issue of payline/success rates was raised at the recent NCI Center Directors meeting.

Dr. Sawyers recommended asking applicants about their reasons for submitting to the NCI. Asking this question also would help to determine whether the NCI is receiving applications that might have gone to other ICs. Participants noted, however, that it would be difficult to ask this question of applicants who were not funded.

Dr. Lowy asked participants to consider how the NCI should manage its current funds. One option is to fund R01 awards for 4 years instead of 5. The number of R35 awards also could be reduced. The

R21 awards could be limited to use for projects and programs that benefit from 2-year funding and avoid use for main laboratory support. Dr. Lowy also presented the possibility of expanding or placing a dollar limitation on P01 and possibly other RPG mechanisms. Dr. Jaffee agreed that shortening the time period for some awards might be useful because science now changes in less than 5 years. Dr. Lowy was concerned that this shortened award period would force grantees to start writing renewals too soon. Dr. Ley was concerned that shortening the funding period would increase the number of applications. In response to a question from Dr. Hiebert, Dr. Lowy clarified that most ICs do not have 4-year awards.

Dr. Jaffee noted that few investigators apply for P01 awards because they are difficult to get funded and might discourage multidisciplinary collaboration. Drs. Lowy and Singer are considering different ways of counting awards. For example, they have discussed with NIH leadership the possibility of counting P01 awards by number of subprojects, which would better reflect actual time and dollar investment. In response to a question from Dr. Adamson, Dr. Lowy indicated that changes in the R01 awards would have the greatest impact.

Participants noted that the option to request a budget adjustment should not be taken off the table. Dr. Adamson asked whether IC Directors with lower success rates might wish to collaborate on such a request. Dr. Yuan Chang suggested a two-pronged process: (1) develop strategies to better use the existing funding (e.g., reducing years, redistributing, etc.) and (2) work with NIH leadership to increase available funds. Dr. Sawyers mentioned the need to consider NCI funding outside of RPGs, such as the Frederick facility and intramural research. He noted that RPG goals might align with the goals of NCI programs outside of the RPG (e.g., P01s that include intramural investigators).

Dr. Ley added that young investigators will become discouraged if NCI paylines remain low. Dr. Lowy noted that ESIs receive a 5 percent boost and sometimes additional select pay. Low paylines might, however, be a deterrent for second award or renewal applicants. Renewal rates are below 40 percent, which is a problem. Ten percent of NCI RPG grantees obtain a renewal through another IC. Dr. Ley noted the need for a management solution to the NCI's high application rates and reiterated the need to work with NIH leadership. In response to a question about physician scientists, Dr. Lowy responded that they represent small proportion of the applicant pool.

Dr. Hiebert proposed drafting a letter to NIH leadership about the disparity between the number of RPG applications to the NCI and to other NIH ICs. Participants also wanted to discuss with the full NCAB the impact of moving from 5 to 4 years of funding for some R01 grants. Dr. Lowy noted that the impact would depend on the number of grants affected. Dr. Ley wondered what actions could be taken to involve NIH leadership.

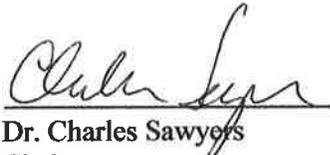
Wrap Up and Next Steps

Dr. Sawyers recommended that the group further discuss with the NCAB the strategy for addressing the disparity between the number of RPG applications to the NCI and to other NIH ICs, including the proposals raised during this meeting.

Dr. Lowy asked that participants consider and propose other analyses of NCI budget and funding.

Adjournment

Dr. Sawyers thanked attendees and adjourned the Subcommittee meeting at 8:56 p.m. EDT.



Dr. Charles Sawyers
Chair

6/10/19

Date



Mr. Weston Ricks
Executive Secretary

6/10/19

Date