National Institutes of Health
National Cancer Institute (NCI)
National Cancer Advisory Board (NCAB)
***Ad Hoc* Working Group (WG) on Extramural Research Concepts and Programs**

Virtual Meeting
8 April 2026
2:00 p.m.–4:47 p.m. EDT

SUMMARY

Participants

Working Group Members
Dr. Cornelia M. Ulrich, Chair
Dr. Suzanne J. Baker
Dr. Smita Bhatia
Dr. Otis W. Brawley
Dr. Andrew T. Chan
Dr. Suzanne D. Cozen
Dr. Gloria D. Coronado
Dr. Christopher M. Counter
Dr. Edna Cukierman
Dr. Christina N. Curtis
Dr. S. Gail Eckhardt (absent)
Dr. Christopher Flowers
Dr. Christopher R. Friese
Dr. Jon C.D. Houtman
Dr. Chanita Hughes-Halbert
Dr. Trey Ideker
Dr. Patrick J. Loehrer
Dr. Ana Maria Lopez
Dr. Jasmine A. McDonald
Dr. Ruben A. Mesa
Dr. Karen M. Mustian
Dr. Lisa A. Newman (absent)
Dr. Raymond U. Osarogiagbon (absent)
Dr. Raphael E. Pollock
Dr. Suresh S. Ramalingam
Dr. Lewis R. Roberts
Dr. Charles M. Rudin
Dr. John Sampson (absent)
Dr. Ali Shilatifard
Dr. Samuel L. Volchenboum (absent)
Dr. Robert H. Vonderheide (absent)
Dr. Ashani T. Weeraratna
Dr. Max S. Wicha
Dr. George Wilding
Dr. Karen M. Winkfield

Designated Federal Official
Dr. Samantha L. Finstad (NCI)

Other Participants
Dr. Jeffrey C. Buchsbaum (NCI)
Dr. Kathy Cronin (NCI)
Dr. Kelly Crotty (NCI)
Mr. Steve Friedman (NCI)
Dr. Douglas R. Lowy (NCI)
Dr. Dinah Singer (NCI)
Dr. Lily Neff (The Scientific Consulting Group, Inc. [SCG], Rapporteur)

Welcome and Opening Remarks

Dr. Cornelia M. Ulrich, Chief Scientific Officer and Executive Director, Comprehensive Cancer Center, Huntsman Cancer Institute, The University of Utah
Dr. Samantha Finstad, Designated Federal Official, NCI

Dr. Cornelia M. Ulrich, Chief Scientific Officer and Executive Director, Comprehensive Cancer Center, Huntsman Cancer Institute, The University of Utah, opened the second meeting of the NCI NCAB *ad hoc* Working Group on Extramural Research Concepts and Programs. She welcomed participants and explained that the role of the Working Group is to review NCI concept proposals and make recommendations to NCAB members on whether to approve or disapprove the concepts. Dr. Ulrich

reviewed the confidentiality and conflict-of-interest practices required of Working Group members in their deliberations. The meeting was open to the public and broadcast through NIH VideoCast; the recording will be archived for future viewing. She provided an overview of the meeting procedures, including using the raised-hand feature and remaining muted until called upon.

Introductions

At Dr. Ulrich's request for introductions, Dr. Samantha L. Finstad, Designated Federal Official, NCI, called on individuals to introduce themselves.

NCAB ad hoc Working Group on Extramural Research Concepts and Programs

Dr. Ali Shilatifard is the Chair of the Department of Biochemistry and Molecular Genetics at Northwestern University. His research focuses on chromosomal structure, chromosome translocation, epigenetics, and transcription in cancer.

Dr. Ana Maria Lopez is a medical oncologist and Professor in the Medical Oncology and Integrative Medicine and Nutritional Sciences departments at the Sydney Kimmel Comprehensive Cancer Center at Thomas Jefferson University. Her research focuses on access to care.

Dr. Andew T. Chan is a gastroenterologist and epidemiologist at the Massachusetts General Hospital. His research interests include colorectal cancer prevention and the gut microbiome.

Dr. Ashani T. Weeraratna is the Chair of the Department of Biochemistry and Molecular Biology at The Johns Hopkins Bloomberg School of Public Health and the Associate Director for Basic Research at the Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins Medicine. She also serves as a member of the NCAB.

Dr. Suzanne J. Baker is the Deputy Director of the St. Jude Comprehensive Cancer Center at St. Jude Children's Research Hospital. Her research focuses on high-grade gliomas in children.

Dr. Chanita Hughes-Halbert is the Executive Vice Chair and Vice Chair for Research in the Department of Population and Health Sciences at the University of Southern California. She also serves as the Associate Director for Cancer Health Disparities at the USC Norris Comprehensive Cancer Center.

Dr. Charles M. Rudin is the Deputy Director of the Memorial Sloan Kettering Cancer Center. His research focuses on lung cancer.

Dr. Christopher M. Counter is the Associate Director of the Duke Cancer Institute.

Dr. Christopher Flowers is a clinical and translational researcher and medical oncologist. He serves as the Division Head for the Division of Cancer Medicine at The University of Texas MD Anderson Cancer Center.

Dr. Christina N. Curtis is the Senior Vice Chair of Research in the Department of Medicine at Stanford University. She oversees artificial intelligence (AI) and cancer genomics at the Stanford Cancer Institute. Her research focuses on quantitative methods for understanding tumor initiation, progression, and resistance.

Dr. Edna Cukierman is the Cancer Signaling and Microenvironment Program Leader and the Marvin & Concetta Greenberg Chair in Pancreatic Cancer Research at the Fox Chase Cancer Center.

Dr. Christopher R. Friese is affiliated with the Rogel Cancer Center at the University of Michigan. His research focuses on cancer care quality, and he is a member of the NCAB.

Dr. George Wilding is a medical oncologist and Director Emeritus at the University of Wisconsin–Madison. He previously served as the Vice Provost overseeing clinical research at The University of Texas MD Anderson Cancer Center.

Dr. Gloria D. Coronado is a Professor of Epidemiology and the Associate Director for Population Sciences at The University of Arizona Cancer Center.

Dr. Jasmine A. McDonald is an Associate Professor at the Mailman School of Public Health and the Associate Co-Director for Cancer Research Training at the Herbert Irving Comprehensive Cancer Center. Her research focuses on molecular epidemiology to reduce breast cancer risk.

Dr. Jon C.D. Houtman is a Professor and Vice Chair for the Department of Microbiology and Immunology at The University of Iowa. He also is the Deputy Director of the Holden Comprehensive Cancer Center.

Dr. Karen M. Mustian is the Associate Director for Population Science at the Wilmot Cancer Institute at the University of Rochester and the Director for the University of Rochester Cancer Center National Cancer Institute Community Oncology Research Base (known as URCC NCORE RB).

Dr. Karen Winkfield is a Professor of Radiation Oncology and Associate Director of Community Outreach and Engagement at Vanderbilt Ingram Cancer Center. She also is an NCAB member.

Dr. Max S. Wicha is a medical oncologist and former Director of the University of Michigan Rogel Cancer Center. His research interests include basic biology and clinical translational studies in breast cancer.

Dr. Trey Ideker is a Professor at the University of California, San Diego. His research focuses on the intersection across tumor genomics, functional genomics, and AI.

Dr. Lewis R. Roberts is a hepatologist and Professor at Mayo Clinic Comprehensive Cancer Center. His research focuses on the genetics of hepatobiliary cancers.

Dr. Suresh S. Ramalingam is a medical oncologist specializing in lung cancer and serves as the Executive Director at the Winship Cancer Institute of Emory University.

Dr. Smita Bhatia is the Director of the Institute of Cancer Outcomes and Survivorship at The University of Alabama at Birmingham. Her research focuses on survivorship.

Dr. Otis W. Brawley is a medical oncologist and epidemiologist. He is a Professor at The Johns Hopkins School of Medicine and the Bloomberg School of Public Health. Dr. Brawley also serves as the Associate Director for Community Outreach and Engagement at Sidney Kimmel Comprehensive Cancer Center.

Dr. Patrick J. Loehrer is a medical oncologist at Indiana University (IU) and serves as the Director of the Center of Global Oncology. He is Director Emeritus of the IU Health Simon Cancer Center.

Dr. Raphael E. Pollock is Director Emeritus and a surgical oncologist and translational researcher of sarcoma at The Ohio State University Comprehensive Cancer Center.

Dr. Ruben A. Mesa is a hematologist and Executive Director at the Atrium Health Wake Forest Baptist Comprehensive Cancer Center. His research focuses on leukemia.

Dr. Suzanne D. Conzen is Chief of the Division of Hematology and Oncology at The University of Texas Southwestern Medical Center. Her research focuses on glucocorticoid receptor molecular biology and the effect of social stressors on cancer initiation.

NCI Leadership

Dr. Ulrich requested that NCI leadership introduce themselves. She noted that several NCI Division Directors were also in attendance.

Dr. Douglas R. Lowy is the Principal Deputy Director of NCI. His research focuses on HPV vaccines and the role of regulatory genes in cancer maintenance and development.

Dr. Dinah Singer is the Deputy Director for Scientific Strategy and Development at NCI. Her research focuses on molecular immunology and transcriptional regulation.

Consideration of the Meeting Summary

Motion. A motion to accept the minutes of the 6 February 2026 Meeting of the NCAB *ad hoc* Working Group on Extramural Research Concepts and Programs was approved unanimously.

Dr. Ulrich informed members that the NCAB accepted the Extramural Research Concepts and Programs Working Group recommendations at the 170th meeting on 17 March 2026. She reminded participants of the Working Group's role: to advise the NCAB on scientific programs and future directions for extramural research. This includes revising and recommending research concepts and their funding mechanisms. Dr. Anthony Letai, Director, NCI, has requested that the Working Group identify emerging opportunities and new ideas, prioritize urgent needs, and evaluate program effectiveness.

NCI Principal Deputy Director's Welcome
Dr. Douglas R. Lowy, Deputy Director, NCI

Dr. Douglas R. Lowy, Deputy Director, NCI, also welcomed everyone to the meeting. He appreciated the efforts of the Working Group members and highlighted their concept review contributions. Dr. Lowy thanked NCI staff for their help with creating his presentation.

Dr. Lowy discussed the NCI budget. He noted that although Congress provides generous funding to NCI, research buying power has decreased, and the budget has not kept pace with inflation. Compared with fiscal year 2003 (FY03), research buying power has decreased 18 percent, which equates to $1.58 billion (B) taking inflation into account. NCI's budget has remained relatively flat over the past 4 fiscal years. Although NCI's budget has remained steady, NCI anticipates that more research project grants (RPGs) will be awarded in FY26 than were awarded in FY25. Dr. Lowy explained that the decrease in R01 and R21 awards in FY25 compared with FY24 was primarily due to upfront funding requirements. In FY24, 18 percent of R01 awards went to early-stage investigators (ESIs). In FY25, 17 percent of R01 awards went to ESIs. Dr. Lowy noted that NCI is optimistic about the number of awards for FY26; NCI would like to award more RPG awards than were awarded in FY24. The number of outyear grant (OG) obligations is changing because of upfront funding requirements. Dr. Lowy explained that OGs are not accounted for in the current fiscal year and are not reflected in obligation-based reports

because the awards are funded upfront for multiple years. Although reports do not accurately capture OGs, these grants are becoming a significant portion of the grant portfolio.

The NCAB *ad hoc* Working Group on Extramural Research Concepts and Programs reviews concepts for future notices of funding opportunities (NOFOs). Dr. Lowy emphasized that the Working Group's recommendation of specific concepts is critical. NOFOs have a multistep approval process. Highlighted topics (HTs) have fewer steps in the approval process, but the Working Group does not review concepts for HTs. Dr. Lowy highlighted two NIH HTs where NCI is the lead institute: (1) Research on Rare Cancers Across the Cancer Control Continuum and (2) Optimal Interprofessional Teaming and Care Coordination Strategies for Cancer Care Quality and Outcomes. At the time of the meeting NCI also participates in 14 additional HTs.

The President's Budget (PB) for NIH for FY27 is $41 B, which is $5 B less than for FY26. Dr. Lowy noted that this 10 percent reduction in the FY27 PB is less than the proposed budget decrease of 40 percent for FY26. He emphasized that the PB is a proposal and that Congress appropriates funding. The PB proposes that all RPGs be funded upfront and that indirect costs be capped at 15 percent. Dr. Lowy presented a table on the proposed breakdown of funding for each NIH Institute and Center (IC) based on the PB. The FY27 PB proposes that NCI receive an additional $9 million (M) in funding compared with FY26. Although NCI would receive an increase in funding, many ICs would receive less funding because of the proposed budget cut. Dr. Lowy stated that individuals should be mindful of how the proposed budget would affect other NIH ICs. Dr. Lowy noted that NCI division, office, and center leadership would provide presentations in the future. The next meeting of the NCAB *ad hoc* Working Group on Extramural Research Concepts and Programs is scheduled for 28 October 2026.

Discussion

Dr. Ulrich appreciated Dr. Lowy's presentation and noted that the information was helpful. She emphasized that many joint initiatives exist across NIH that are relevant to NCI, so cancer research would be impacted if NIH and other NIH institutes receive a budget cut.

Dr. Shilatifard expressed gratitude for the presentation and asked about the FY26 RPG data provided in the presentation. Dr. Lowy explained that NIH RePORTER is not up to date, which is the reason for the discrepancy. He reiterated that Dr. Letai is committed to funding more RPGs in FY26 than in FY25 and providing additional support to ESIs.

Dr. Shilatifard commented that the research buying power has decreased more than 18 percent because the funding maximum for grants has remained steady even though inflation has continued to increase. Dr. Lowy responded that NCI is trying to provide funding to more principal investigators (PIs) rather than provide more funding for fewer awards.

Dr. Ulrich stated that Congress sets an upper limit for upfront funding, and that upfront funding can limit the number of awarded RPGs per year. She questioned whether NCI could lower the number of OGs to support more new RPGs during this critical phase of scientific advancement. Dr. Lowy explained that the NCI Office of Budget and Finance is staying below the maximum limit, but NCI is not deviating too far from the current upper limit in case Congress requires a higher limit in the future. Deviating too far would cause significant challenges for the rest of the fiscal year. Dr. Ulrich appreciated Dr. Lowy's explanation of NCI's strategy for upfront funding. She asked whether additional grants administration staff will be hired. Dr. Lowy commented that NCI recently received permission to hire additional staff. Hiring staff will be based on prioritization, and although no definitive decisions have been made, the OGA would be considered high priority.

Dr. Wilding requested clarification on the administrative, programmatic, and accounting advantages of upfront funding. Dr. Lowy explained that ICs do not have to worry about grant costs for subsequent years when using the upfront funding mechanism. He acknowledged that getting to a funding steady state can be challenging, but NCI is trying to limit hurdles. Dr. Wilding noted that the U.S. Department of Defense uses the upfront funding mechanism for grants.

Dr. Ulrich thanked Dr. Lowy and his team. She noted that Working Group members look forward to helping NCI progress with extramural funding opportunities and hearing from NCI leadership.

Surveillance, Epidemiology, and End Results (SEER) Program RFP
Mr. Steve Friedman, SEER Program Manager, NCI

Mr. Steve Friedman, SEER Program Manager, NCI, thanked the Working Group for the opportunity to present and reminded participants that a reissuance of the SEER Program was requested. He noted that Dr. Kathy Cronin and other SEER Program leadership were in attendance to answer queries as needed. He continued by expressing his appreciation for the cancer registries that contribute to the SEER Program to fight against cancer and support public health efforts.

The National Cancer Act of 1971 authorized the development of the SEER Program to collect data and provide cancer trend information. The SEER Program began collecting de-identified data in 1973, and 17 central cancer registries provide most of the de-identified data. Cancer registries submit data through the SEER Data Management System (known as SEER*DMS); this data represents about 46 percent of the U.S. population and approximately 1 M cases are collected each year. Rigorous data submission requirements and QC processes ensure that the research community receives high-quality data. Tools and educational materials, including fact sheets and "Did You Know" videos, allow investigators to use SEER data easily in their research efforts. The SEER Program remains the primary source for cancer statistics, in part, through its contributions to the Annual Report to the Nation on the Status of Cancer and the Healthy People initiative.

Mr. Friedman provided an overview of the value of SEER data. In 2025, more than 16,000 investigators downloaded SEER data. Since 2020, more than 2,000 publications utilize SEER data annually, and in 2024, 95 grants used SEER as the primary data source. SEER data have helped identify emerging trends and understand the impact of risk factors, screening, and treatment advances on survival and mortality. Mr. Friedman provided examples of how SEER data have been used in landmark publications. He also highlighted that SEER data influences national health care policy, recommendations, and clinical guidelines. SEER*Explorer is a data search and visualization tool that had more than 100,000 users in 2025. The SEER Program plays a fundamental role in understanding the impact of precision oncology by tracking emerging cancer patterns, detecting treatment-related malignancies, and monitoring long-term population trends for different therapies. If reissued, the SEER Program would focus on incorporating new technologies, including AI, and expanding data linkages.

Mr. Friedman provided an outline of the proposed SEER Program reissuance. Under the R&D contract mechanism, cancer registries are considered contractors, which allows the SEER Program to implement best practices, update data collection requirements, and modify project focus as needed. Current program elements, including the registry network, would be preserved. SEER registries will need to use SEER*DMS. If a registry is not currently using SEER*DMS, it will need to transition to SEER*DMS within 2 years and cover any transition costs. The reissuance concept includes two new aspects: (1) development of an innovation center and (2) creation of an advisory NCAB subgroup. The reissuance concept is requesting funding for 10 years, with a $600 M ceiling budget; $52 M is being requested for the first year. The reissuance is supporting the sustainability of a decades-long surveillance program on cancer incidence, survival, disparities, and treatment while modernizing it to maximize impact.

Discussion

Dr. Weeraratna appreciated that Dr. Cronin and Mr. Friedman answered her queries while she reviewed the concept reissuance. She thanked Drs. Brawley and Chan for their review and comments. Dr. Weeraratna emphasized the importance of the SEER Program and the use of SEER data by investigators. She explained that all three reviewers provided their full support for the concept reissuance. Dr. Weeraratna noted the following comments from reviewers: (1) obtaining 20 percent of funding support outside of NCI may be difficult, (2) maintaining infrastructure is critical, (3) establishing an external advisory committee is recommended, and (4) clarifying midcourse funding adjustments and outlining the responsibilities of SEER Program staff compared with advisory committee members are needed.

Dr. Brawley highlighted the importance of SEER data for epidemiologists. The data are key for cancer surveillance. Dr. Brawley noted concern about the decreased funding support of cancer registries from the Centers for Disease Control and Prevention (CDC), which impacts the 20 percent funding requirement. Dr. Lowy stated that this is important, and NCI will investigate the matter. He appreciated the reviewers' strong endorsement of the SEER Program and stated that this program was critical. Dr. Cronin continued that NCI works closely with the CDC on many aspects of cancer surveillance.

Dr. Mesa emphasized the importance of the SEER Program and SEER registries. Differences in SEER data accessibility among states (e.g., Illinois, Wisconsin, North Carolina) is an issue. This is an important resource to which all investigators should have easy access. Dr. Lowy responded that State Cancer Profiles contain a large amount of information (e.g., risk factors) and that these profiles are developed using SEER data.

Dr. Houtman stated that The University of Iowa was an original SEER registry site. He explained that the SEER Program is a fundamental tool for understanding cancer in Iowa. SEER data were used in the Cancer in "Iowa: 99 Counties Project" to provide county-specific cancer statistics.

Dr. Chan noted that he was a reviewer of this concept. He underscored the importance of robust and detailed SEER data to understand environmental risk factors of cancer incidence. Dr. Chan explained that the data collected through the SEER Program is a model and an international gold standard.

Dr. Weeraratna stated that SEER data also is important for basic science. These data inform investigators about mechanisms of cancer that should be studied.

Dr. Lopez agreed that the SEER Program is important, especially the expansion of SEER registries. She recommended that SEER Program leadership consider populations that are missing from data collection (e.g., rural communities). She expressed excitement about the use of AI in the SEER Program. AI could help collect data and connect the program with other databases. Dr. Lopez reiterated that connections across databases should be prioritized to obtain a whole-person understanding of cancer.

Motion. A motion to approve the SEER Program RFP concept reissuance was approved unanimously.

Innovative Molecular Analysis Technologies (IMAT) Program (R33/R61) (RFA)
Dr. Kelly Crotty, Program Director, Center for Strategic Scientific Initiatives, NCI

Dr. Kelly Crotty, Program Director, Center for Strategic Scientific Initiatives, NCI, introduced the IMAT program. The program catalyzes multidisciplinary development of innovative technologies to overcome the complexity of cancer biology and create new opportunities to defeat cancer. The program supports the earliest stages of the technology development pipeline using the R61 and R33 funding mechanisms. R61-funded projects are proof-of-principle and test technical feasibility. R33-funded projects support the enhancement, optimization, and validation of technologies. The program receives approximately 200 to

300 applications annually; about 25 applications are selected and funded. The program supports a broad range of new approach technologies, including biomarker detection, synthetic biology, and immunoengineering. The program excludes specific types of technology, including *in vivo* and whole-body imaging, that are supported by other NCI funding mechanisms. The IMAT program team comprises NCI Program Directors who have specific areas of expertise. Dr. Crotty explained that the IMAT program is unique and that other NCI-funded programs are available to help technologies and tools through later stages of the development pipeline.

Dr. Crotty provided examples of IMAT-funded projects. Dr. Livia Eberlin was an ESI who received R33 funding for a handheld mass spectrometry pen that could collect and analyze extracted analytes from tissues. This tool would help with cancer diagnosis and surgical margin evaluation. Dr. Craig Crews received funding for proteolysis targeting chimeras (known as PROTACS). PROTACS uses the cell's own machinery to accomplish targeted protein degradation. Dr. Larry Loeb developed and validated duplex sequencing, which he later commercialized through TwinStrand Biosciences. Drs. Han Xiao and Jason Yustein received funding to develop a new antibody delivery approach to treat Ewing sarcoma. Dr. Sam Pattenden developed a nanodroplet cavitation enhancement reagent to improve chromatic fragmentation for downstream applications. Dr. Ankur Singh created a lymphoma organoid platform to enable the discovery of effective drug combinations and drug resistance mechanisms. Dr. Crotty emphasized that the IMAT program has supported more than 800 projects, and she highlighted additional technologies.

The IMAT program undergoes routine evaluation and approval for reissuance. The program last received reissuance approval in FY23 to support projects through FY27. In preparation for this reissuance request, NCI created an evaluation panel of extramural investigators with experience in developing, translating, and commercializing new biomedical technologies. The evaluation panel was given program information and key questions to consider. Dr. Crotty briefly discussed the panel's evaluation. The IMAT awardees come from different departments than those supported by R01 and R21 grants. Based on standard indicators (e.g., percent of projects with a filed patent, citations per publication), the program is productive and successful. The panel noted that the program's impact justifies the investment in these high-risk, high-reward projects. The panel provided several recommendations to improve the program, including prioritizing exploration of emerging technology and reinvesting in high-performing grantees. Dr. Crotty briefly discussed the reason behind using the RFA mechanism for the IMAT program, emphasizing that an RFA provides control over the review process (e.g., review criteria, special emphasis panels). She summarized the RFA request to support new R33 and R61 projects from FY28–FY30 and the proposed number of awards.

Discussion

Dr. Houtman thanked Dr. Crotty, her team, and the external review panel for creating an easy-to-read report on the IMAT program. He provided an overview of the reviewers' feedback. Dr. Houtman highlighted the strengths of the program, including the cost per patent which was about one-third the cost of patents affiliated with R01 grants. He appreciated that investigators from other departments are brought into cancer research through the program, and he stated that certain projects did not meet their proposed goals, which is reasonable because these are innovative technologies that are high risk, high reward. Dr. Houtman agreed with the proposed changes to the IMAT program. Dr. Rudin supported Dr. Houtman's comments. He emphasized that the unique program provides support in a key area. Dr. Cukierman stated that the program is unique and cannot be replaced by other funding mechanisms. She appreciated the evaluation panel's review. Dr. Curtis emphasized that the program supports a broad range of technologies and that these technologies will transform our understanding of diseases.

Dr. McDonald requested clarification on how the IMAT program does not overlap with other programs, such as the Small Business Innovation Research (SBIR) program. She also questioned whether cost

increases because of inflation were factored into the requested $12 M budget. Dr. Crotty responded that the IMAT program accepts applications from anyone, whereas the SBIR program is focused on small businesses, and applicants must demonstrate market value of the technology. The IMAT program focuses on the technology's potential impact on cancer research. She continued that many successful IMAT awardees go on to obtain SBIR funding to help with commercialization. Dr. Crotty explained that the proposed $12 M budget is larger than previous requests. She highlighted that NCI leadership encouraged the larger budget request. The program's previous budget could support about 25 to 30 projects each year. The newly proposed budget would support about 37 projects.

Dr. Baker emphasized the importance of this program. The innovative projects create technologies that future R01 grantees use in their research, increasing the return on investment.

Dr. Loehrer questioned whether public-private partnerships or partnerships with industry could support these projects and increase the program's budget. Dr. Crotty explained that this has not been done but that IMAT staff connect awardees with small businesses that have connections with investors to advance the technologies. She noted that these partnerships could be considered.

Dr. Wilding requested clarification on whether the IMAT program awards are subject to upfront funding. He asked if the patent statistic represented the number of patent applications or the number of awarded patents. Dr. Crotty clarified that the statistic relates to the number of patent applications. The requested budget is for first-year costs. At the end of the fiscal year, certain projects are forward funded, but there is no specific policy on forward funding for IMAT awards.

Dr. Roberts asked whether training opportunities could be embedded within the IMAT program. Dr. Crotty responded that many teams funded by the IMAT program include early career scholars and trainees.

Dr. Ramesh asked how many R61 applicants transition to R33 funding. Dr. Crotty stated that about 40 percent of R61 applicants apply for subsequent R33 funding. Approximately 20 percent of R61-funded applicants successfully obtain R33 funding. Dr. Crotty emphasized that technology development is not linear; NCI has had R33-funded awardees apply for R61 funding because an innovative idea was identified during their R33-funded research.

Dr. Lopez commented that the program application could incorporate partnerships with end users to maximize translation of these technologies. She encouraged the publication of findings from unsuccessful projects because researchers can still gain knowledge from them. Dr. Crotty responded that collaborations with end users could be encouraged on an individual basis for R33 projects. Program awardees provide a presentation at an annual IMAT meeting regardless of whether the technology was successful. Awardees may hold off on publishing until a patent is obtained.

Dr. Ideker noted that ESIs may be discouraged from applying because OGs decrease the program's award rates. He questioned whether IMAT-specific challenges could be initiated to increase funding award rates. Dr. Crotty appreciated this suggestion and noted that NCI is considering opportunities (e.g., special events) for different programs, including IMAT.

Dr. Shilatifard emphasized the productivity of this program. He encouraged NCI to provide additional resources and support to the IMAT program because it is a successful investment.

Dr. Ulrich noted that the program's efforts in dissemination and engagement with the broader research community is important.

Motion. A motion to approve the IMAT program RFA concept reissuance was approved with 29 ayes, 0 nays, and 1 abstention.

Radiation Oncology-Biology Integration Network (ROBIN) (U54) (RFA)
Dr. Jeffrey C. Buchsbaum, Medical Officer, Radiation Research Program, Division of Cancer Treatment and Diagnosis, NCI

Dr. Jeffrey C. Buchsbaum, Medical Officer, Radiation Research Program, Division of Cancer Treatment and Diagnosis, NCI, thanked Drs. Counter, Finstad, Pollock, and Winkfield and noted that this is the first renewal request for ROBIN. In 2020, experts on the Clinical Trials and Translational Research Advisory Committee (CTAC) developed a report on radiation oncology. ROBIN was created to implement recommendations from the report. Before ROBIN, a radiation molecular roadmap about tumors had not been developed, inactivation of molecular targets during radiation therapy was understudied, and understanding the dynamic biology influenced by radiation was not supported. The goals of ROBIN are to (1) create a map of molecular and imaging data for before, during, and after (BDA) radiation therapy; (2) develop new collaborations; (3) foster high-impact publications; (4) identify inducible and actionable targets; and (5) develop a stronger workforce by increasing interest in radiation. Dr. Buchsbaum outlined the BDA radiation treatment conceptual framework. Cancers responsive to BDA, including gastrointestinal, pediatric, and breast cancer, were a primary focus for ROBIN. Short-term goals included identifying biomarkers and inducible targets. Long-term goals include developing predictive models and enhancing personalized radiation therapy. Dr. Buchsbaum discussed the five U54 Centers within ROBIN and noted that there is adequate collection of different cancer biospecimens.

Dr. Buchsbaum emphasized that ROBIN is the only national platform completing systematic BDA radiation therapy research across multiple cancers. He highlighted the outputs and accomplishments of ROBIN, including increasing the workforce in radiation research, publishing 182 papers, and enhancing knowledge in radiation biology. Centers have developed numerous lectures and classes, which are attended by individuals in early career stages and outside of the radiation biology research field. A broad range of data types are collected, such as single cell transcriptomics, metabolomics, and spatial protein imaging data. Recruiting patients for these BDA projects has been successful. The U54 Centers are collaborating through numerous pilot projects. U54 Centers must provide 15 percent of ROBIN funding to collaborative pilot projects. Dr. Buchsbaum noted that there is strong integration among the U54 Centers. They have monthly laboratory and data sharing meetings and administrative and steering teams. Workforce training is a successful joint effort that has created courses and exchange programs. Dr. Buchsbaum highlighted that an NCI staff member is present at the data sharing meetings to facilitate data submission to the Cancer Research Data Commons, ensuring that data are accessible to the public. Centers are sharing standard operating procedures (SOPs). Dr. Buchsbaum explained that if ROBIN is reissued, a centralized validation working group would be established, which aligns with NIH's gold standard science. Dr. Buchsbaum discussed a publication from the MicroEnvironment and Tumor Effects of Radiotherapy U54 Center because it emphasizes the importance of ROBIN. The publication showed that following radiation for cervical cancer, MDM2 becomes an inducible, actionable target. The results also showed that monocytes are recruited to the tumor microenvironment. These results identify new cervical cancer targets for innovative drug strategies, especially because MDM2-targeted therapies are available.

Dr. Buchsbaum summarized that ROBIN is achieving the goals from its first program issuance. If reissued, several objectives will remain the same. He noted several modifications that would be incorporated. New cancer histologies, modalities, and clinical scenarios will be included. NCI intramural resources will be used, and a validation working group will be established. Dr. Buchsbaum explained that the first-year costs are $4.32 M to fund three U54 Centers, and the second year would fund the other two U54 Centers. The total cost is $36 M over 5 years.

Discussion

Dr. Winkfield thanked Dr. Buchsbaum for the overview and the co-reviewers, Drs. Counter and Pollock, for their expertise. She explained that ROBIN offers a great opportunity to understand the underlying mechanisms and alterations caused by radiation therapy, and this is critical because multidisciplinary treatment approaches are integrated into the cancer therapy landscape. The program has provided proof that biopsies can be obtained from patients during radiation treatment, and the outputs highlight the need for this program. She noted that the reviewers support the renewal of ROBIN. The reviewers had several comments for consideration: (1) performance metrics and programmatic successes should be clearly defined, (2) the rationale for expanding the program to include additional cancers should be articulated, and (3) an external review panel should be established. Dr. Pollock emphasized that governance should be specified in case disagreements arise over shared resources. A challenge with this funding mechanism is ensuring that projects are more valuable than R01s. He highlighted that using the same methodologies across the U54 Centers is critical to ensure rigorous isolation of longitudinal, patient-derived samples. An external peer review would help address this concern. Dr. Pollock stated that ROBIN has laid the groundwork and made substantial progress within a short time frame. Dr. Counter reiterated the need for clear performance metrics. He expressed his excitement about the program, highlighting the collaboration between NCI and investigators to complete ROBIN's goals and expanding the program to other cancers or modalities. Dr. Buchsbaum responded to the reviewers' comments. The U54 Centers have external advisory boards, and ROBIN is monitored by NCI leadership. The creation of a tissue bank would require a substantial funding investment. Samples cannot be held indefinitely, so the U54 Center PIs are encouraged to process the samples and analyze and share the data. He noted that the PIs are using SOPs obtained from commercial vendors when possible, which ensures reproducibility. Any internal SOPs used by the centers have undergone review through their external advisory board. A validation working group can address cross-center validation data compatibility. Programmatic metrics will include publications, grant acquisition, clinical trial development, and advancement in workforce.

Dr. Ulrich questioned whether the reissuance would be an open competition. Dr. Buchsbaum confirmed that it would be an open competition RFA.

In response to a query from Dr. Ulrich about the review timeline, Dr. Winkfield recommended a mid-cycle review to ensure that programmatic goals are being achieved and SOPs for comparable data collection are established.

Dr. Wicha requested clarification about the peer-review process for protocols. Dr. Buchsbaum explained that ROBIN focuses on radiation-only samples; patients do not have chemotherapy or immunotherapy. Radiation is the standard of care, but molecular data for it are limited. He highlighted that ROBIN is an RFA rather than an R01 because sample collection will be hypothesis generating to inform future science and clinical trials. Dr. Buchsbaum elaborated that RFAs require special review committees. These committees review the protocols involved in the cancer trials, including therapy method, radiation dose, and biopsy collection. He stated that the original review process to select the five U54 Centers was very competitive.

Dr. Cukierman asked about lessons learned for refining the concept of reissuance. Dr. Buchsbaum responded that several approaches are being considered. NCI is considering novel histology samples and innovative protocols. Opportunities exist to expand the projects to include such techniques as new treatment modalities, cell therapy, and combinatorial therapy. Dr. Cukierman recommended that tumors already being collected by the U54 Centers still be considered when proposed by new applicants because there may be new modalities that are innovative and complementary to the currently funded projects.

Dr. Conzen asked whether animal models for radiation oncology mimic patients, or whether there is another reason for completing this research in patients. Dr. Buchsbaum emphasized the importance of radiation studies in patients, which will have a clear impact for cancer care.

Dr. Ulrich recommended incorporating short-course radiation, which is critical for patients in rural communities. Dr. Buchsbaum responded that multiple centers are using these methods, and he provided stereotactic body radiotherapy and hypofractionated radiation therapy as examples.

Dr. Ulrich provided a summary of the comments received from Working Group members. She noted that a central theme of the Working Group members' feedback was harmonization and synergy across the U54 Centers.

Dr. Finstad clarified that Working Group members may provide feedback about the concept at this stage, but they cannot review the RFA before it is publicly released. In response to a question from Dr. Brawley, Dr. Finstad confirmed that Working Group members and their institutions could not apply to the RFA if they viewed it before the request was publicly released. Dr. Ulrich noted that if the concept reissuance is approved, NCI could review and incorporate the Working Group members' comments into the RFA.

Motion. A motion to approve the ROBIN RFA concept reissuance was approved unanimously.

Closing Remarks

Dr. Ulrich requested member feedback on topics for future meetings and items to emphasize for consideration. She noted that discussions with NCI Division Directors have been flagged previously and that she will coordinate with NCI.

Dr. Shilatifard requested an update on the NCI R35 funding mechanism. Dr. Singer explained that several NIH ICs are developing a parent R35 announcement. NCI will consider participating in this opportunity; the draft is similar to previous NCI R35 funding announcements. Dr. Shilatifard expressed concern over the review process because highly accomplished cancer investigators may no longer be included as members of the review committee, which could negatively impact grant applications. Dr. Singer stated that the review process has been centralized through the NIH Center for Scientific Review. NCI may provide recommendations regarding who should be included in review committees.

Dr. Mesa noted that an in-person format for the NCAB *ad hoc* Working Group on Extramural Research Concepts and Programs meetings would be beneficial. This setting allows members to easily engage with NCI leadership. Drs. Shilatifard and Coronado agreed with this request, highlighting that informal discussions with NCI leadership are a valuable aspect of these meetings. Dr. Singer explained that the goal is to have at least one in-person meeting per year. Dr. Ulrich stated that the 28 October 2026 meeting could be in person, depending on several factors.

Dr. Coronado questioned whether the approved concepts are being tracked through the subsequent steps until it is a posted funding announcement. She requested clarification on the duration of this process and whether certain steps are hindering the workflow. Dr. Singer responded that NCI is actively tracking each concept. NCI plans to share this information after a full year of data has been collected. Dr. Ulrich stated that NCI should share any important barriers identified.

Dr. Bhatia emphasized that the cost to publish is a concern. It is difficult for ESIs to afford publication costs. She requested clarification from NCI regarding how this issue can be addressed. Dr. Ulrich agreed that publication costs can limit junior investigators and trainees from publishing, especially if a senior investigator has several trainees trying to write manuscripts. Dr. Mustian highlighted that publication costs are a concern for large-scale grants (e.g., National Clinical Trials Network, Cancer Center Support Grants) that sponsor many studies. Dr. Singer noted that open-access publications were mandated by NCI

during Cancer Moonshot℠ but that publication costs could be included in grant budget requests. A new NIH-wide policy on covering publication costs may be implemented. Dr. Lowy continued that publishing is undergoing a substantial change and that alternative avenues for publishing are being considered. NIH leadership recognizes the expensive publication costs and is discussing ways to address this concern.

Adjournment

Dr. Ulrich thanked the Working Group for their engagement and efforts, expressed gratitude to NCI, and adjourned the meeting at 4:47 p.m. EDT.