**91st Meeting of the National Cancer Institute (NCI)**
Council of Research Advocates (NCRA)
National Institutes of Health (NIH)

In-Person Meeting
March 5, 2024

## Members Present

Ms. Melinda Bachini
Dr. Vickie Buenger
Ms. Melissa Buffalo
Ms. Annie Ellis, *Chair*
Mr. Nathaniel Ferre
Mr. Lee Jones
Dr. Brittany McKelvey
Mr. Robert Riter
Ms. Kristen Santiago
Mr. Kevin Stemberger
Dr. Nicole Willmarth

## Speakers

Ms. Holly Gibbons, Deputy Director, Office of Government and Congressional Relations, NCI
Dr. Elizabeth Jaffee, Chair, President's Cancer Panel
Dr. Juli Klemm, Program Director, Center for Strategic Scientific Initiatives, NCI
Dr. Lori Minasian, Deputy Director, Division of Cancer Prevention, NCI
Dr. Kimryn Rathmell, Director, NCI
Ms. Amy Williams, Director, Office of Advocacy Relations (OAR); Executive Secretary, NCRA, NCI

## Contents

**Welcome and Opening Remarks**

*Ms. Amy Williams and Ms. Annie Ellis*

Ms. Williams opened the meeting at 10:01 a.m. Eastern Time (ET), welcomed Council members and attendees, provided brief opening remarks, and reviewed the day's agenda.

Ms. Ellis called the meeting to order, reviewed the conflict-of-interest rules, read the public comment statement, and confirmed that a quorum of members was present.

**NCI Director's Update**

*Dr. Kimryn Rathmell*

Ms. Ellis introduced Dr. Rathmell, who recently began work as the 17th NCI Director. Dr. Rathmell shared information about her experience, goals, and vision and provided an overview of cancer research initiatives and NCI budget.

- Dr. Rathmell has over 20 years of experience as a clinical research scientist on kidney cancer. She has conducted clinical trials, educated graduate students, and led training programs. She transitioned into administration after acquiring a master's degree in healthcare administration in 2021. She has a keen interest in integrating science, clinical care, education, and administration. She also previously chaired the Department of Medicine at Vanderbilt University.
- Dr. Rathmell values NCI's comprehensive approach to science, clinical care, education, and national impact. She advocates for open communication, honesty, teamwork, and appreciates the challenge of solving complex problems through molecular biology.
- Dr. Rathmell shared a personal story about a young patient with a rare form of kidney cancer, which profoundly impacted her professional and personal perspectives.
- Dr. Rathmell initiated a community and advocacy movement for the rare disease renal medullary carcinoma (RMC), leading to the establishment of the RMC Alliance and advancing research and awareness in the field.
- Dr. Rathmell underscored the importance of funding for cancer research and treatment. Despite avoiding government shutdowns three times, the NCI budget remains uncertain. She hoped that a resolution will be reached by March 22, 2024. Cancer research must remain a priority amid competing interests.
- Dr. Rathmell discussed the challenges posed by budget constraints, including a 15% reduction in non-personnel spending and a hiring pause within the intramural program, which could affect research and training programs.
- Dr. Rathmell mentioned the National Cancer Plan and the Cancer Moonshot℠ initiative as strategic frameworks aiming for a significant reduction in cancer deaths by 2047, thus underscoring the need for comprehensive efforts in various aspects of cancer research and clinical care.
- Dr. Rathmell highlighted significant advancements in cancer treatment and research, including new FDA-approved therapies for solid tumor cellular therapies, which stem from decades of pioneering work in cellular immunotherapy.
- Dr. Rathmell noted a trial focused on self-testing for cervical cancer, leveraging the National Cancer Plan's goal to engage every person. This initiative aims to improve accessibility to

cervical cancer testing, particularly for HPV, through partnerships with the FDA and biopharmaceutical companies. Dr. Rathmell also mentioned upcoming developments in cancer screening, which are important for early detection and treatment.

- Dr. Rathmell discussed NCI's innovative approach to virtual clinical trials, a concept that emerged from the pandemic, which demonstrated how remote operations can enhance patient access to trials, especially in areas lacking specialized trial staff.

*Discussion*

- Ms. Ellis expressed concern about the potential impact of budget constraints on extramural and intramural research programs within NCI, particularly highlighting the fear that research funding for rare cancers might suffer more in tough times. She questioned whether considerations like mortality rates and existing benefits for certain cancers would influence funding decisions. Dr. Rathmell acknowledged the complexity of the situation, noting that the impact of budget constraints would not be uniform and that hard decisions would have to be made. She mentioned the immediate effects, such as a hiring pause impacting both intramural and extramural programs. Dr. Rathmell emphasized maintaining a balance across different cancer research areas, guided by the National Cancer Plan, to ensure continued progress in prevention, treatment, screening, and workforce development, despite budget challenges.
- Mr. Jones inquired about NCI's approach to addressing the increase in early-onset cancers across various types, noting the lack of clear understanding of the causes. Dr. Rathmell emphasized the importance of naming and grouping these concerns to foster collaboration and research. She recounted the experience of recruiting a specialist with a passion for early-onset colorectal cancer who facilitated discussions across various cancer types, focusing initially on patient support but eventually leading to research opportunities. Dr. Rathmell highlighted existing grants and interest from other NIH Institutes in investigating early-onset cancers, expressing optimism that increased public awareness would lead to more research attention and resources.
- Mr. Nathaniel Ferre expressed concerns about the potential "brain drain" from public to private sectors due to higher compensation in industry, coupled with declining public trust in the collaborative efforts between public and private entities in cancer research, possibly exacerbated by the COVID-19 pandemic. He suggested that more resources could be allocated to improve public perception of this partnership. Dr. Rathmell acknowledged the risk of talent migration to the private sector, emphasizing the need to bolster the pipeline for future cancer researchers and maintain a balance between industry and public research sectors. She highlighted efforts to rebuild public trust through transparent communication and outreach, stressing the significant progress made in cancer research and the importance of public understanding of these advances.
- Ms. Ellis suggested that the language around ending cancer might need to be more inclusive of the variety of cancers, reflecting on the progress that has made some cancers manageable rather than deadly. She emphasized the importance of recognizing these advances as significant progress in the fight against cancer.
- Dr. Buenger noted concerns about competing with the private sector for talent in data science, which is crucial for initiatives like the Childhood Cancer Data Initiative. She stressed the importance of mission-driven recruitment to attract talent to government and academic positions in data science. Dr. Rathmell acknowledged the challenge of attracting data scientists due to high

demand across all sectors. It is imperative to attract and recruit dedicated individuals. There could be potential for partnerships with companies that have the required talent.

- Mr. Riter inquired about Dr. Rathmell's biggest surprise since joining NCI. Dr. Rathmell reflected on the mission-driven culture at NCI and NIH, which exceeded her expectations and contributes to a shared commitment to advancing cancer research and care.
- Ms. Ellis inquired about a new working group on community cancer care, research, and equity formed by the Board of Scientific Advisors. Dr. Rathmell explained that the working group's formation arose from discussions about extending clinical trials to rural and underserved areas and addressing health inequities. The working group is focused on fact-finding to understand available resources and innovative approaches to improve community cancer care. The working group has a six-month timeline to provide insights and suggestions for future directions.
- Mr. Jones raised concerns about the impact of budget constraints on both intramural and extramural research, particularly the challenges faced by the National Clinical Trials Network and grant funding paylines. Dr. Rathmell, acknowledging the delicate balance required, shared her personal connection to the extramural research community and stressed the importance of maintaining support across all NCI activities. She highlighted the need for a finalized budget from Congress to make informed decisions about funding priorities.
- Ms. Ellis emphasized the valuable role of advocates in cancer research teams, noting their contributions to identifying urgent needs and priorities. Dr. Rathmell illustrated how advocates can bring attention to underrecognized issues and inspire researchers by sharing their stories. She also noted the diverse roles advocates can play, from raising awareness to influencing research directions, and the importance of including advocates in various capacities. Ms. Williams added that an advocate will be included in the community cancer care working group.

**Update on Cancer Screening Research Network**

*Dr. Lori Minasian*

Dr. Minasian provided an overview of the development of the Cancer Screening Research Network (CSRN), collaborative efforts of NCI's multi-cancer detection (MCD) trial team, and next steps.

- Dr. Minasian began by describing MCD assays, which are blood tests that measure biological signals (e.g., DNA changes, protein biomarkers) to screen for multiple cancers with a single test. She emphasized the role of both biochemical measurements and software algorithms in determining test outcomes. There are currently insufficient data to confirm whether MCD efficacy can diagnose cancers at early stages.
- Dr. Minasian presented a table showing the diversity of companies developing MCD assays, the various technologies employed, and the range of cancers each assay claims to detect. She explained that a positive assay result suggests the possibility of cancer, necessitating further diagnostic workup. Some assays provide organ-specific predictions to guide diagnostics, while others may require whole-body imaging. In addition, she clarified that a negative test result could mean the absence of detectable signals or signals below the defined cut point, cautioning that such a result does not conclusively indicate the absence of cancer, as evidenced by studies like the Pathfinder study.
- Dr. Minasian underscored the complexity and limitations of current MCD technologies, pointing out that the cancer type developed by an individual may not be detectable by the specific assay used. NCI needs to study MCD assays for cancer screening. Current screenings are limited to common cancers such as breast, prostate, lung, colorectal, and cervical cancers, which are associated with high mortality. However, over half of cancer deaths come from cancers without screening tests including pancreatic and ovarian cancers, indicating a need for more accessible screening methods.
- Dr. Minasian explained how MCD assays could screen for multiple cancers with a single blood test, potentially detecting hard-to-identify cancers in a convenient way, which might be more acceptable to patients than traditional methods like colonoscopies. However, the efficacy of MCD assays needs to be further elucidated, including the potential to save lives or reduce cancer mortality, the number and type of diagnostic tests needed following a positive result, and the implications of false positives and negatives.
- Dr. Minasian addressed concerns about whether MCD tests could lead to overdiagnosis of indolent cancers, exacerbate disparities in accessibility to follow-up diagnostics, or discourage standard screening practices in the face of negative tests.
- Dr. Minasian noted the current regulatory and reimbursement status of MCD assays. So far, none have received FDA market authorization or Centers for Medicare & Medicaid Services (CMS) reimbursement. There are no clinical practice guidelines due to insufficient data.
- Dr. Minasian reviewed the literature on the predictive performance of cell-free nucleic acid assays, noting that most are better at detecting late-stage cancers than early-stage and have varying sensitivities for different cancer types.
- Dr. Minasian emphasized the goal of cancer screening to reduce mortality and questioned whether MCD assays will be effective in early-stage detection to significantly impact cancer death rates. She referenced studies like the prostate, lung, colorectal, and ovarian (PLCO) cancer

screening trial as well as a UK ovarian cancer screening study to illustrate the challenges in demonstrating mortality reduction through screening. This led to the United States Preventive Services Task Force's recommendation against screening average-risk women for ovarian cancer due to insufficient evidence of mortality benefit.

- Dr. Minasian explained how NCI is addressing the need to generate evidence for the effectiveness and application of multi-cancer detection assays. One goal is to create an evidence base to understand how these assays work, whether they are effective, and how they can be used either alone or in combination, as they measure different biomarkers. CSRN was launched to evaluate emerging technologies for cancer screening, involving collaboration with assay developers, FDA, CMS, Veterans Affairs (VA), Department of Defense (DoD), and the Indian Health Service. CSRN aims to conduct multicenter cancer screening trials in diverse populations to make results generalizable to the American population, evaluate emerging modalities for cancer screening, and improve implementation of cancer screening.
- Dr. Minasian shared updates on the Vanguard Study, which is planned to randomize participants to a control arm or one of two multi-cancer detection (MCD) assays to assess participant willingness for randomization and other objectives like adherence, feasibility, reliability of blood specimen testing, and identification of facilitators and barriers to recruitment and retention. An assay selection process was initiated with a request for information to potential assay developers, leading to discussions about the technology and selection criteria for the Vanguard Study. A virtual workshop was held to further engage with assay developers, and the Alliance for Clinical Trials in Oncology created an MCD Biobank to provide blood specimens for assay testing, helping to evaluate the assays in a blinded fashion. The process concluded with reviewing applications from assay developers, ranking the assays, and narrowing them down to a smaller group for potential inclusion in the Vanguard Study.
- Dr. Minasian outlined the next steps in the evaluation and implementation of MCD assays through the CSRN. Assay developers are voluntarily participating in the evaluation process without compensation from NCI; specimens have been distributed to them for assay testing. One company has already returned assay results, and data cleaning is underway. Due to technological differences, some companies could not use the originally provided specimens. Alternative specimens, suitable for detecting protein biomarkers rather than circulating tumor DNA, have been sent to these companies. Most companies have received their specimens and are analyzing the data. They have been provided with blinded information to ensure unbiased results. Once all data are received and analyzed, the assays will be ranked, and recommendations will be made to NCI leadership regarding which assays to select for further study.
- Dr. Minasian noted that the CSRN has formally launched; the coordinating and communication center has begun to populate working groups focused on various aspects such as ethics and equity, statistical design, diagnostic pathways, and recruitment and retention. An in-person meeting is planned for May 2024 to finalize the study protocol, which is expected to be submitted to the central IRB by the end of summer 2024. The goal is to launch the Vanguard pilot study before the end of 2024.

*Discussion*

- Ms. Ellis expressed gratitude to Dr. Minasian for explaining the complexity of the MCD study and acknowledged the extensive work involved. She noted the absence of discussion on asymptomatic individuals, highlighting the distinction between early detection and screening. Ms. Ellis expressed a collective desire for simpler cancer detection methods for future generations to reduce suffering among loved ones. She raised concerns about the transition from single cancer tests to multi-cancer detection tools, especially regarding the proprietary nature of some algorithms. Dr. Minasian clarified that the Vanguard Study's initial goal is to assess the feasibility of randomization, with successful accrual indicating progress. The Vanguard Study is currently a pilot study, so it does not focus on mortality; however, it is funded for four years, allowing for potential adjustments based on its success.
- Ms. Ellis inquired about the integration of rural sites into the network and the potential of MCD screenings to address care inequities. Dr. Minasian expressed concerns about access and follow-up care for individuals with positive tests, especially in rural areas.
- Ms. Ellis questioned the recruitment plans for capturing underinsured or underserved populations near major cancer centers. Dr. Minasian explained the various scenarios, including VA and DoD participants, and Kaiser's potential to absorb costs. She emphasized the Vanguard Study's focus on understanding barriers to follow-up care and patient concerns. The Vanguard Study, set for a sample size of 24,000, aims to manage follow-up care costs within the pilot setting, anticipating broader implications for future diagnostic workups if the approach is authorized or approved.
- Ms. Kristen Santiago shared excitement about the MCD technology and its potential impact on cancer detection. She emphasized the significance of quality-of-life considerations in cancer detection and treatment, suggesting that early detection could lead to better symptom management and decision-making for patients, even if it does not directly impact mortality rates.
- Dr. Willmarth raised questions about the potential benefits of early cancer detection, particularly in the context of treatment options and their impact on mortality. She inquired whether earlier interventions could lead to improved outcomes for patients diagnosed through screening methods. Dr. Minasian clarified that the evolving treatment landscape, such as the introduction of PARP inhibitors in ovarian cancer treatment, and how advancements in therapy could complement early detection efforts to improve patient outcomes. She emphasized the need for continuous improvement in both detection and treatment to achieve significant progress in cancer care.

**Legislative and Budget Update**

*Ms. Holly Gibbons*

Ms. Gibbons provided an update on the ongoing FY 2024 appropriations process, FY 2025 appropriations process and next steps, and recent congressional activities.

- Ms. Gibbons began by emphasizing that Congress is negotiating the FY 2024 appropriations; they hope to finalize the Labor–Health and Human Services (HHS) bill—including NIH and NCI funding—by March 22, 2024. The FY 2025 appropriations process is about to begin. The President's budget is expected to release on March 11, 2024.
- Ms. Gibbons noted Congressional retirements; approximately 45 House members and 7 Senators have announced plans to leave office. Congressmen relevant to NCI include Representatives

Derek Kilmer, Brian Higgins, Anna Eshoo, and Barbara Lee.

- Ms. Gibbons shared that Dr. Taylor Sundby and Dr. Vikrant Sahasrabuddhe presented at congressional briefings on neurofibromatosis research and cervical cancer prevention, respectively. NCI continues to facilitate participation in educational briefings or roundtables on the Hill to highlight important cancer research.
- Ms. Gibbons noted that Dr. Rathmell participated in the One Voice Against Cancer (OVAC) annual meeting and a congressional reception honoring NIH Director Dr. Monica Bertagnolli. Dr. Rathmell also met with key members of the House and Senate Appropriations Committees, including Representatives Rosa DeLauro and Senators John Boozman, Jack Reed, Shelley Moore Capito, and Jerry Moran. She continued to foster relationships and discuss NCI's priorities and activities.

*Discussion*

- Ms. Ellis inquired whether Congress would complete the FY 2024 budget process. Ms. Gibbons expressed optimism about Congress finalizing FY 2024 appropriations soon, citing recent progress with legislative packages. However, she noted that it is not uncommon for NCI and other agencies to begin fiscal years under continuing resolutions, as timely appropriations are rare. Ms. Ellis added that the established parameters of a 1% increase over FY 2024 levels will facilitate a smoother appropriations process but acknowledged the unpredictability of congressional action.

**Update from the President's Cancer Panel on the National Cancer Plan**

*Dr. Elizabeth Jaffee*

Dr. Jaffee provided an update on the initial assessment of the National Cancer Plan.

- Dr. Jaffee began by stressing the importance of collaboration, stakeholder engagement, and adapting to the evolving needs of cancer patients in the development and monitoring of the National Cancer Plan. The National Cancer Plan is a dynamic document intended to grow with the needs of current and future cancer patients. It aims to be inclusive and adaptive, encouraging ongoing input from a broad range of stakeholders. Annual public meetings and feedback from social media were established to gather insights, programs, activities, and achievements.
- The National Cancer Plan is comprised of eight broad goals including cancer prevention, early detection, effective treatment, eliminating inequities, delivering optimal care, engaging everyone, maximizing data utility, and optimizing the workforce.
- The President's Cancer Advisory Panel, established by the National Cancer Act of 1971, reports directly to the President and plays a role in monitoring the execution of the National Cancer Program.
- The new National Cancer Plan aligns with the 50$^{th}$ anniversary of the National Cancer Act and the goals of President Biden's Cancer Moonshot, which aims to facilitate collaboration and make progress in ending cancer. Initial assessments involved engaging the community to review activities addressing the National Cancer Plan's goals, identifying challenges and opportunities for acceleration, and fostering collaborations among stakeholders.

- Dr. Jaffee noted five key priorities for immediate action including to (1) increase investment in biomedical research; (2) ensure access to high-quality insurance coverage for all; (3) build a sustainable, robust, and diverse workforce; (4) promote dynamic and sustainable community engagement; and (5) prioritize data sharing and integration to accelerate research.
- Dr. Jaffee shared next steps including to assess progress and identify opportunities for enhancing the effectiveness of the National Cancer Plan's goals. This involves engaging all stakeholders through annual public meetings; the next one is scheduled for September 2024. The meeting aims to provide equitable representation to all sectors of the cancer community, encourage and monitor real-time public submissions and discussions to foster diverse group engagement, and rapidly identify areas for improvement.
- Dr. Jaffee also explained the Reducing Cancer Care Inequities: Leveraging Technology to Enhance Patient Navigation initiative, which leverages technology to enhance patient navigation from the initial cancer diagnosis through the entire continuum of care. This initiative has already led to national meetings and the development of a report to the President outlining the challenges and potential solutions for using technology to improve patient navigation.

*Discussion*

- Dr. Willmarth raised concerns about the challenges in accessing data from pharmaceutical companies, particularly from negative trials or detailed data from positive trials. Dr. Jaffee agreed on the need for effective incentives to encourage data sharing. She suggested that all parties, including manufacturers, need to benefit in order to be motivated to share data. Dr. Jaffee highlighted the importance of not hindering a manufacturer's drug development pathways with data-sharing regulations. She proposed extending drug exclusivity periods as a possible incentive for pharmaceutical companies to share data earlier.
- Mr. Jones pointed out the value of real-world evidence and data, which is often held by data management companies that do not share it beyond their network. He advocated for crowdsourcing as a potential way to uncover insights from such data if it were made more accessible. Dr. Jaffee acknowledged the need for rules and incentives to encourage the private sector to share data. She suggested that the government, possibly through initiatives led by the White House, could play a role in creating these incentives.
- Dr. Buenger underscored the importance of multistakeholder meetings to build trust and understanding between the private sector and other stakeholders in the context of the National Cancer Plan. She mentioned her experience representing a coalition of childhood cancer organizations and noted the benefits of having good relationships with industry partners, including efforts in Europe, in improving collaboration despite data silos. Dr. Jaffee agreed with Dr. Buenger's points and mentioned that one of the recommendations to the White House was to convene multistakeholder meetings to enhance collaboration in data sharing and workforce development within the cancer community. Dr. Jaffee reiterated the plans for the next public meeting in September to include community-based groups and pharmaceutical companies to discuss these issues. She also highlighted past efforts during the Cancer Moonshot initiative, led by then Vice President Biden, as an example of successful multistakeholder engagement.
- Ms. Santiago expressed concern about ensuring that the National Cancer Plan's initiatives and energy do not stagnate or merely end up as another document without tangible progress. She

suggested focusing on payment and incentives to drive behavior change, emphasizing the role of the advocacy community in this effort. Dr. Jaffee appreciated Ms. Santiago's insights and emphasized the commitment from various stakeholders, including the past and current NCI Directors, to prevent the National Cancer Plan from being sidelined. She encouraged the advocacy community to provide suggestions for incentives to promote collaboration across different sectors and to share ideas on how to maintain momentum in implementing the National Cancer Plan's goals.

**Artificial Intelligence and Cancer Research**

*Dr. Juli Klemm*

Dr. Klemm presented the ongoing progress and next steps of artificial intelligence (AI) in cancer research.

- Dr. Klemm began by providing an in-depth explanation of AI in the context of cancer research and clinical practice. AI encompasses computer systems capable of learning patterns in data, emulating human intelligence. This broad technology can be applied across the cancer continuum, including screening, diagnosis, drug discovery, surveillance, and healthcare delivery. Recent progress in AI for cancer research has been driven by advancements in algorithms, hardware, and access to vast volumes of cancer-related data, including imaging, genomics, and clinical information.
- Dr. Klemm explained that AI can be divided into predictive and generative categories. Predictive AI learns patterns to make predictions on new, unseen data. For example, an AI model can be trained to differentiate benign skin lesions from malignant melanoma. Generative AI, on the other hand, creates new content based on existing data patterns, such as a chatbot generating a plain language summary of a clinical report.
- Dr. Klemm clarified that predictive AI has shown significant results, particularly in medical imaging, by improving accuracy and reproducibility in image analysis. For instance, an AI model developed by a team at Northwestern University outperformed pathologists in predicting survival outcomes for breast cancer patients using histopathology slide images, focusing on non-tumor aspects like stromal and immune features. Predictive AI has also been effective in extracting information from clinical documents. An NCI-funded study developed a model to extract data from unstructured pathology reports for cancer registries, potentially speeding up a manual process and improving timeliness in cancer registry reporting.
- Dr. Klemm noted a significant challenge with AI methods is their lack of interpretability, often functioning as "black boxes" without clear insight into what drives their predictions. A team at University of California San Diego is addressing this issue by combining conventional AI models with biologically constrained models to predict tumor cell line sensitivity to compounds and identify the biological pathways influencing drug responses.
- Dr. Klemm added that generative AI, particularly through large language models (LLMs), is gaining significant attention. LLMs can generate human-like language and interact in ways that are useful in biomedical research and patient care, such as summarizing complex information and assisting with medical education. However, the rapid advancement and application of AI in biomedicine raises questions about the technology's safety, trustworthiness, accuracy, and how sensitive data are managed within AI applications.

- Dr. Klemm addressed the ethical considerations surrounding the use of patient data for training AI models, emphasizing the need for responsible AI development. She highlighted the federal government's steps toward this goal, including a recent executive order from the White House aimed at guiding ethical AI development across government sectors. HHS is developing a strategic AI plan in response, with NCI staff involvement.
- Dr. Klemm noted ongoing efforts to develop and implement ethical and trustworthy AI including National Institute of Standards and Technology (NIST)'s AI Risk Management Framework, which prompts organizations to consider the impacts of AI systems. The National Academy of Medicine is also developing a healthcare AI code of conduct to ensure safe and ethical AI applications in health and biomedical science. The NIH Office of Data Science Strategy leads the initiative to establish guidelines for ethical AI, with NCI's active participation through community engagement events and workshops focused on equitable and patient-engaged AI. These efforts underline the importance of ongoing dialogue with stakeholders to balance safety with scientific progress.
- Dr. Klemm discussed the significance of diversity and representativeness in the AI workforce and research data. NIH's Artificial Intelligence/Machine Learning Consortium to Advance Health Equity and Researcher Diversity (AIM-AHEAD) Program seeks to increase participation from underrepresented groups in AI development and address health disparities through AI applications. NCI supports AI research through various programs and has established the Trans-NCI Artificial Intelligence Working Group to coordinate AI activities and partnerships, considering patient community concerns. NCI has launched Cancer AI Conversations, a series of webinars addressing AI applications in cancer and has created several webpages to inform the research community about relevant NCI funding opportunities and events.
- Dr. Klemm shared examples of NCI-funded research including studies on extracting social determinants of health from electronic health records and using federated learning for tumor boundary detection in glioblastoma. These examples showcase AI's role in advancing the goals of the National Cancer Plan, particularly in maximizing data utility to end cancer.

*Discussion*

- Dr. Buenger expressed curiosity about AlphaFold's potential in drug discovery—an AI system developed by Google DeepMind that predicts a protein's 3D structure from its amino acid sequence. She noted its initial excitement and subsequent skepticism. Dr. Klemm acknowledged the complexity of the question and mentioned NCI's interest in exploring AI's role to target previously undruggable cancer targets. A planned workshop involving NCI, Department of Energy, and FDA aims to leverage AI for innovative drug targeting strategies, emphasizing the importance of structural biology and biological pathway understanding in drug development.
- Dr. Willmarth raised concerns about AI-generated grant applications and the need for grantmakers to address potential issues, especially on validating AI results and marking AI-generated content for transparency. Dr. Klemm noted AI's role in addressing workforce challenges such as chatbots aiding medical students. She emphasized AI as a tool for efficiency, provided there is human oversight and validation.
- Dr. Buenger expressed concerns about AI models learning from biased data and the need for ethical guidelines to prevent perpetuation of stereotypes, particularly in medicine. Dr. Klemm

acknowledged the importance of balanced data in medical decision-making models and efforts to identify and minimize biases in AI models.

- Ms. Ellis inquired about the transparency of AI models in healthcare and the ability of patients to inquire about the algorithms used in their care. Dr. Klemm encouraged patients to ask questions and emphasized ongoing research to make AI models more explainable, ensuring that technological features recognized by predictive AI are understandable and appropriate. Patients should be thoroughly involved in discussions about AI ethics and guidelines.

**Closing Remarks and Board Administration**

*Ms. Amy Williams and Ms. Annie Ellis*

Mr. Jones made a motion to approve the minutes of the 90th NCRA meeting. Mr. Riter seconded the motion. The motion passed unanimously.

Ms. Ellis thanked NCRA members for their time, attention, and feedback and thanked OAR staff. She noted the next NCRA meeting will be held virtually on June 26, 2024.

The meeting was adjourned at 2:16 p.m. ET.

**Certification**

I hereby certify that foregoing minutes are accurate and complete.

June 27, 2024
Date

\s\
Annie Ellis
Chair
NCI Council of Research Advocates

June 27, 2024
Date

\s\
Amy Williams
Executive Secretary
NCI Council of Research Advocates