The National Advisory Council for Biomedical Imaging and Bioengineering (NACBIB) was convened for its 59th meeting on May 17, 2022, by Zoom for the Open Session and Closed Session. Dr. Bruce Tromberg, Director of the National Institute of Biomedical Imaging and Bioengineering (NIBIB) presided as Council chairperson. In accordance with Public Law 92-463, the meeting was open to the public from 12:00 p.m. to 2:59 p.m. for review and discussion of program development, needs, and policy. The meeting was closed to the public from 3:13 p.m. to 4:00 p.m. for the consideration of grant applications.

**Council members present:**
- Dr. Samuel Achilefu, Washington University School of Medicine, St. Louis, MO
- Dr. Gilda Barabino, Olin College, Needham, MA
- Dr. Jennifer Barton, University of Arizona, Tucson, AZ
- Dr. Simon Cherry, University of California, Davis, Davis, CA
- Dr. Tejal Desai, University of California, San Francisco, San Francisco, CA
- Dr. Maryellen Giger, University of Chicago, Chicago, IL
- Dr. Paula Hammond, Massachusetts Institute of Technology, Cambridge, MA
- Dr. Amy Herr, University of California, Berkeley, Berkeley, CA
- Dr. Ranu Jung, Florida International University, Miami, FL
- Dr. Kathryn Nightingale, Duke University, Durham, NC
- Dr. Manu Platt, Georgia Institute of Technology, Atlanta, GA
- Dr. Bruce Rosen, Massachusetts General Hospital, Charlestown, MA

**Ex officio member attending:**
- Dr. Zane Arp (*on behalf of Dr. Jeffrey Shuren*), U.S. Food and Drug Administration, Silver Spring, MD
- Dr. Vincent Ho, Uniformed Services University of the Health Sciences, Bethesda, MD
- Dr. Sohi Rastegar, National Science Foundation, Arlington, VA

**Ex officio members absent:**
- Mr. Xavier Becerra, Department of Health and Human Services, Washington, DC
- Dr. Lawrence Tabak, National Institutes of Health, Bethesda, MD
- Dr. Anne Plant, National Institute of Standards and Technology, Gaithersburg, MD
- Dr. Jeffrey Shuren, U.S. Food and Drug Administration, Silver Spring, MD

**Chairperson:**
Dr. Bruce Tromberg

**Executive Secretary:**
Dr. David T. George

**Also Present:**
Approximately 222 observers attended the open session, including NIBIB staff, and members of the public.

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1 For the record, it is noted that members absent themselves from the meeting when the Council is discussing applications (a) from their respective institutions or (b) in which a conflict of interest may occur. This procedure only applies to applications that are discussed individually, not to “en bloc” actions.
Dr. David T. George called to order the 59th meeting of the National Advisory Council for Biomedical Imaging and Bioengineering. He reminded attendees that the morning session of the meeting was open to the public and welcomed attendees.

I. NIBIB Special Council Lecture: Dr. Susan Margulies, National Science Foundation (NSF) Assistant Director for Engineering – Transforming the World Through Engineering: Opportunities for Partnership with NIBIB

Dr. Margulies gave a brief overview of the NSF mission and structure, noting that its mission statement includes the words “national health”. She discussed that NSF funds researchers at all stages of their careers starting as early as in high school and at all levels of the innovation cycle from basic to translational research.

Dr. Margulies went on to describe the foci of the different NSF divisions of the Directorate for Engineering. The NSF Engineering Strategic Plan mission is to “Transform our world for a better tomorrow by driving discovery, inspiring innovation, enriching education, and accelerating access.” Its vision is that “NSF Engineering will be a global leader in identifying and catalyzing fundamental engineering research, innovation, and education.” She continued by noting some of what the NSF believes to be its greatest engineering strengths and highlighted them as opportunities to partner with NIBIB.

Dr. Margulies highlighted the NSF Directorate for Technology, Innovation and Partnerships (TIP) programs and noted that their goal is to fund projects to overcome the “valley of death,” or the areas of “proof-of-concept/early-stage prototypes/prototype development” where private investment has not yet been established following government funding. She also gave some examples of NSF funding throughout the decades that later resulted in significant impacts in technology we use today.

Some of the areas of funding that Dr. Margulies identified as opportunities for collaboration with NIBIB were:

- Emerging biotechnologies
- Advanced biomanufacturing
- Environment and human health
- Engineering education
- Experiential learning

Suggested mechanisms of collaboration were:

- Center-to-center collaboration between Bioengineering Research Partnerships (BRPs) and Engineering Research Centers (ERCs)
- Co-funding of ERCs
- Co-funding of core and solicitation proposals
- Membership in Industry-University Cooperative Research Centers (IUCRCs)
- Non-Academic Research Internships for Graduate Students (INTERN) with a potential for partnership with NIH/NIBIB Biomedical Engineering and Technology Acceleration (BETA)
- Research Experiences for Undergraduates (REU), Research Experience and Mentoring (REM), Research Experiences for Teachers (RET) in Engineering and Computer Science, Skills Training in Advanced Research and Technology (START)
- Build ramps from NSF to NIH funding
- Create new co-funded solicitations.

Dr. Margulies also gave some specific examples from each of these areas that have current solicitations (FY22) that NIBIB could potentially join. Referencing the new umbrella Memorandum of Understanding (MOU) with NIBIB, Dr. Margulies showed a graph that demonstrated the growth in publications co-citing...
NSF and NIH funding sources.

Council members showed interest in Engineering Research Centers, biomanufacturing, and INTERN as potential areas of collaboration with NIBIB. There was also interest in some of the NSF-specific programs and mechanisms such as the regional innovation engines and research initiation awards. They also discussed the importance of IUCRCs and experiential learning.

II. Director’s Remarks: Dr. Bruce Tromberg

A. Council Member Farewells and Staff Updates

Dr. Tromberg thanked departing council members Dr. Paula Hammond, Dr. Maryellen Giger, and Dr. Bruce Rosen for their service.

Dr. Tromberg next recognized the following new NIBIB staff members: Dr. Tianhong Wong, a scientific review officer in the Office of Scientific Review; Dr. Tina Gatlin, a program director in the Division of Interdisciplinary Training; and Dr. Kari Ashmont, a translational team lead in the Office of Program Evaluation and Strategic Partnerships. Dr. Tromberg also congratulated the following NIBIB staff members for their transition to federal positions with NIBIB: Dr. Karen Olsen, a communications specialist in the Office of Science Policy and Communications; and Mr. Tareq Al-Shargabi, a health specialist in the Office of Program Evaluation and Strategic Partnerships (OPESP). Finally, Dr. Tromberg congratulated Mr. Todd Merchak for his promotion to director of OPESP.

Dr. Tromberg transitioned to intramural research program updates. He congratulated Dr. Kaitlyn Sadtler, chief of the NIBIB Section on Immunoengineering, who was named to the World Economic Forum of Young Global Leaders, Class of 2022. Additionally, a postdoctoral fellow in Dr. Sadtler’s lab, Dr. Parinaz Fathi, successfully competed for an NIH Independent Research Scholar principal investigator appointment. In this position, Dr. Fathi will setup a Unit for Nanoengineering and Microphysiological Systems in the NIBIB Section on Immunoengineering.

Lastly, Dr. Tromberg thanked staff who have recently departed NIBIB. Program Directors Dr. Ilana Goldberg, Dr. Joan Greve, and Dr. Anthony Kirilusha have transitioned to the National Heart, Lung, and Blood Institute (NHLBI); the National Cancer Institute (NCI); and the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), respectively. Additional departing staff include Ms. Carol Perry in the Office of Financial Management, Ms. Rosemary Wong in the Division of Health Informatics Technology, and Ms. Gelia Holloway in the Office of Scientific Review.

B. Budget

NIBIB Deputy Director Dr. Jill Heemskerk provided a summary of NIBIB budget updates and COVID-19 supplemental funding.

**NIBIB Budget Updates:** Dr. Heemskerk noted that NIH received $45.2 billion in FY22, representing a 5% increase in funding above FY21. The budget for NIBIB in FY22 was $425 million, representing a 3.4% increase compared with FY21. Dr. Heemskerk said that the FY22 R01 payline was in the 19th percentile, and that the R01 payline for new investigators was in the 24th percentile.

Given the increased funding level in FY22, Dr. Heemskerk noted that reductions were made to fewer types of competing awards compared with the prior fiscal year, including no cuts to non-competing awards. Full details about the FY22 financial management plan can be found [here](#).

**Supplemental COVID-19 Funding:** In FY22, $682 million was earmarked for COVID-19-specific funding,
representing 1.5 times the appropriated base funding for NIBIB. Dr. Heemskerk noted that, for the last three fiscal years, NIBIB has essentially been operating as two institutes in one with this substantial supplemental over funding.

Dr. Heemskerk chronicled the emergency supplemental COVID-19 funding, which started with $500 million received in FY20 to establish the Rapid Acceleration of Diagnostics (RADx®) Tech program. This program leveraged the existing Point of Care Technology Research Network (POCTRN). By expanding this network, a validation core, a clinical studies core, and a deployment core were established, with the goal of quickly developing diagnostic tests for COVID-19. This network has the unique capability to rapidly solicit, review, and fund diagnostic testing applications; test, validate, and de-risk technologies in development; and provide expert guidance on regulatory authorization, manufacturing, and commercialization of technologies. This network has now grown to encompass over 900 contributors, ranging from sectors in government, academia, non-profit, and industry.

Dr. Heemskerk detailed how the $500 million in initial funding has grown to a total of $1.7 billion over the last three fiscal years.

- One program within the Rapid Acceleration of Diagnostics (RADx) initiative, RADx Tech, has received $950 million in this time frame. Further, the RADx Advanced Technology Platforms (ATP) program, designed to expand laboratory testing in the country, received $230 million.

- Additional funding came from the Biomedical Advanced Research and Development Authority (BARDA, $308 million) and from the Office of the Assistant Secretary for Preparedness Response (ASPR, $42 million).

- Dr. Heemskerk mentioned that, as the years passed, needs arose that weren’t necessarily predicted at the outset of the pandemic, and that RADx was a unique government resource that could quickly address these issues as they arose.
  - As diagnostic tests became available, a program focused on their distribution, called the Say Yes! COVID Test ($11 million), was initiated. This program helped to inform the Biden administration’s test distribution program that is currently underway.
  - As new SARS-CoV-2 variants emerged, and the validity of diagnostic tests were brought into question, the Variant Task Force ($20 million) was formed to evaluate existing COVID-19 tests to ensure that they remained able to detect the virus.
  - In light of the omicron surge, when COVID-19 tests became scarce, the Independent Test Assessment Program (ITAP, $70 million) was established. This collaboration with the U.S. Food and Drug Administration (FDA) facilitated the acceleration of emergency use authorizations (EUAs) for diagnostic tests.
  - Lastly, as free COVID-19 tests were distributed across the country, it was revealed that there remained an unmet need for tests that could be used independently by people with low vision, motor disability, and/or cognitive disabilities. As such, the accessible testing program ($30 million) was launched. In this program, RADx will aim to modify existing tests to make them more accessible, along with plans to launch a new “innovation funnel” to develop novel tests with a user-centric approach that will be accessible for all users.

C. Program Announcements, Opportunities, and Updates

Dr. Tromberg next provided a summary of program announcements, opportunities, and updates.
DEBUT Challenge: The submission deadline for the Design by Biomedical Undergraduate Teams (DEBUT) Challenge is May 31, 2022. Dr. Tromberg highlighted the $130,000 in prize money this year and noted that some of the winners will also receive commercialization training. The hope is to continue to expand and increase both the number and size of the awards for this program. Dr. Tromberg asked council members to encourage their colleagues to apply. Dr. Zeynep Erim is leading the NIBIB effort.

NIH Technology Accelerator Challenge: Dr. Tromberg described the NIH Technology Accelerator Challenge (NTAC), a partnership between NIBIB and the Gates Foundation that aims to stimulate the design of new diagnostic technologies to transform public and global health and to accelerate the full development of those products urgently needed for use in low-resource settings.

In 2021 the challenge topic is maternal health, with a focus on low-cost, point-of-care molecular, cellular, and/or metabolic sensing and diagnostic technologies to reduce maternal morbidity and mortality. The four major areas of interest are in infection, hypertensive disease, placental issues, and hemorrhage. Applications are currently under review, and awards will be announced in mid-July.

Point of Care Technology Research Network (POCTRN) Reissuance: Dr. Tromberg highlighted the recent notice of intent to publish that describes a reissuance of POCTRN. The purpose of POCTRN is to drive the development and application of point-of-care technologies through collaboration and commercialization, with POCTRN centers forming a national research network of multidisciplinary partnerships. POCTRN includes multiple institutes, centers, and offices (ICOs) across NIH. The estimated publication date of the funding opportunity announcement is July 25, 2022, with the first estimated application due date falling on September 26, 2022. Dr. Tiffani Lash is leading the NIBIB effort.

Bioengineering Partnerships with Industry: Dr. Tromberg talked about the recently published announcement detailing a newly reconfigured bioengineering partnerships with industry (BPI) program. The BPI announcement solicits applications from research partnerships formed by academic and industrial investigators to accelerate the development and adoption of promising bioengineering tools and technologies that address important biomedical problems. Partnering institutes include the National Eye Institute (NEI), the National Institute on Aging (NIA), and NCI. Application due dates are at the end of May and September, 2022-2024. Dr. George Zubal is leading the NIBIB effort.

Updates in Diversity, Equity, Inclusion, and Accessibility Areas: Dr. Tromberg provided updates in areas related to diversity, equity, inclusion and accessibility (DEIA).

- NIH UNITE: The NIH UNITE initiative has formed 15 implementation teams to advance ideas, such as the Institutional Excellence in DEIA Prize, for which there has been a recently published request for information; responses should be submitted by July 28, 2022. Further, all NIH ICOs are participating in the recruitment of DEIA scientific program offers. Additional updates can be found on the UNITE website. Dr. Erim is leading the NIBIB effort.

- Funding opportunities: Dr. Tromberg highlighted two R01 funding opportunities, Technology Development to Reduce Health Disparities and New Investigators to Promote Workforce Diversity in Genomics, Bioinformatics, or Bioengineering and Biomedical Imaging Research; both had application deadlines in February 2022, with additional application dates pending. Dr. Tromberg also highlighted an R21 funding opportunity, Small Grants for New Investigators to Promote Diversity in Health-related Research, which still has active due dates: February 16, June 16, and October 16, 2022.

- Entrepreneurship: The Consortia for Improving Medicine with Innovation & Technology (CIMIT) recently led a course, called Commercialization Readiness Assessment and Accelerator for Solutions in Healthcare (CRAASH). There were seven diverse teams in the CRAASH course, which required there to be at least one core member per team coming from an underrepresented group. Five of the
eight mentors for this course were also from underrepresented groups. All participants provided positive feedback about the course, and next steps include building on the experiences and feedback to design a diversity-focused entrepreneurship training program. Dr. Lash is leading the NIBIB effort.

- Office of Research on Women’s Health (ORWH) symposium: On May 11-12, 2022, ORWH held a symposium called Reimagining Women in the Bioengineering, Technology, and Data Science Ecosystem: A Partnership-building Initiative. The ultimate goals of the initiative are to design a scientific research ecosystem that maximizes opportunities for women from diverse backgrounds through all career stages; develop and sustain a scientific workforce that can adapt to multiple sectors; and build teams across sectors and create cross-sector opportunities for mentorship and sponsorship. The organizing committee for the symposium included Dr. Joan Greve and Dr. Lash. Featured speakers included Dr. Janine Clayton from ORWH, Acting NIH Director Dr. Larry Tabak, and NIBIB council member Dr. Gilda Barabino. Dr. Tromberg noted that he had the pleasure of moderating the event for the first day.

- Supporting the growth of biomedical engineering (BME) at historically black colleges and universities (HBCUs): Dr. Tromberg began his discussion by pointing out the remarkable growth of undergraduate BME programs across the country following the establishment of NIBIB in 2000. However, of the over 175 institutions with accredited undergraduate BME degrees, only three are HBCUs, representing an opportunity to stimulate BME programs at these institutions. As such, in collaboration with the Foundation for NIH, a strategy is being developed to establish a public-private partnership for the programmatic support of HBCU BME growth. Next actions include a roundtable with NIBIB DEIA co-chairs and HBCU leaders to understand unique BME needs and priorities.

D. NIBIB Pandemic Response

Dr. Tromberg next talked about the three major areas of NIBIB investment related to pandemic response, along with some ongoing challenges.

Imaging and Artificial Intelligence: Dr. Tromberg first spoke about the Medical Imaging and Data Resource Center (MIDRC). As of April 15, 2022, there have been over 120,000 images ingested into this resource, with approximately 30,000 images representing approximately 11,000 patients being released into the open commons. Dr. Tromberg noted that there are about 150 data users from over 100 institutions and that 13 publications have culminated from this effort. He also noted that there has been significant progress in interoperability, with ongoing pilots with NHLBI, the National Center for Advancing Translational Sciences (NCATS), and the Argonne National Lab. Council member Dr. Giger is the principal investigator of MIDRC, and NIBIB Data and Technology Advancement (DATA) National Service Scholar Dr. Rui Sá has been contributing to this effort.

In Vitro Diagnostics: Dr. Tromberg next gave an overview of the impact of RADx Tech. As of March 2022, the cumulative capacity of RADx-supported tests and test products is 2.3 billion, with 260 million tests and test products being produced in March 2022 alone. Further, as of March 2022, the RADx initiative has led to 44 EUAs; nine of these EUAs were for over-the-counter (OTC) tests, with one of these OTC tests being a reverse transcription loop-mediated isothermal amplification (RT-LAMP) assay. Dr. Tromberg described how the RADx initiative is driving a major paradigm shift: In April 2020, the U.S. was performing less than 8 million tests, with all of these tests being performed in the laboratory. Conversely, in February 2022, the U.S. was performing more than 1 billion tests, and the majority of these were OTC tests. Additional information about RADx-supported projects can be found on the website dashboard.

Digital Health Platforms: Considering the rapid increase in OTC testing, Dr. Tromberg noted that there is a lack of COVID-19 test reporting. To combat this issue, NIBIB has created a digital platform: the RADx Mobile Application Reporting through Standards (MARS). This platform takes testing information from a mobile app, applies standard data elements, routes the information through the Association of Public Health
Laboratories to data hubs, which transmits the information to both state and federal health databases. iHealth tests, which recently have accounted for 300 million tests per month in the U.S., now have an option to report test results through this platform; roughly 30,000 iHealth test results have been reported. Drs. Krishna Juluru and Andrew Weitz are leading the RADx-MARS effort.

Another issue that Dr. Tromberg raised regarding OTC tests is their ability to detect different SARS-CoV-2 variants. NIBIB has been supporting a longitudinal serial antigen study to evaluate how well different rapid antigen tests can detect the delta and omicron variants as compared with polymerase chain reaction (PCR) testing. Results from this study show that rapid antigen tests can detect the two different variants with comparable sensitivity, and that the different rapid antigen tests evaluated (BD Veritor™ At-Home COVID-19 Test, Quidel QuickVue At-Home OTC COVID-19 Test, and Abbott BinaxNOW COVID-19 Antigen Self Test) had comparable performance. Dr. Tromberg highlighted the fact that rapid antigen tests are more accurate at higher viral loads, underscoring the importance of serial testing. He also discussed the apparent difference in performance between different rapid antigen tests in terms of their EUA. He suggested that test performance is more a reflection of the population of weak positive samples that were included in the clinical study rather than analytical differences between different rapid antigen tests.

**Ongoing challenges:** Wrapping up his discussion about the pandemic response, Dr. Tromberg turned to some ongoing challenges.

- OTC “Test to Treat” networks: Dr. Tromberg noted that the telemedicine infrastructure combined with the large-scale distribution of OTC tests represents an opportunity for at-home, diagnostic-led precision medicine. While “Test to Treat” sites for COVID-19 are currently available at some point-of-care locations, this concept should be translatable to the at-home setting.

- Improved performance and accessibility of tests: As mentioned previously in this council meeting, projects to improve the accessibility of COVID-19 tests are currently underway. Additionally, Dr. Tromberg noted that there are several RADx-supported tests that have improved performance compared with lateral flow assay (LFA) rapid antigen tests. These next-generation tests under development include those that can detect individual analytes as well as multiplex tests with variant detection capabilities.

- Regulatory challenges: Dr. Tromberg highlighted the issue of test manufacturers transitioning from EUAs to full clearance to have long-term impact.

- Pandemic preparedness: Dr. Tromberg noted that there remains uncertainty with respect to COVID-19 funding across the government, representing challenges for ongoing programs.

**E. ARPA-H**

Dr. Tromberg concluded his presentation with a brief update about ARPA-H (for Advanced Research Projects Agency for Health). He reviewed a timeline of events, highlighting key ARPA-H milestones; noted major elements of the ARPA-H model, highlighting the overlap with NIBIB program management; and projected a timeline of future activities, noting that it is anticipated that approximately 100 full-time employees will be hired over the course of the next year for this new agency.

**F. Discussion**

Dr. Manu Platt and Dr. Kathryn Nightingale asked about the reporting of OTC COVID-19 tests: if the data was anonymized, if the reporting could be automatic, and if there are discussions about including incentives for reporting testing results. Dr. Tromberg noted that reporting testing results are voluntary, the data is anonymized, and that the use of incentives were evaluated in the Say Yes! COVID Test pilot study. Dr.
Nightingale also asked if there were plans to develop guidance for companies to streamline the transition between EUAs and full FDA authorization for COVID-19 tests. Dr. Tromberg said that there are active meetings about this topic, and that the goal is to identify the most efficient pathways for this process. He noted that full authorization has higher thresholds to be met, and that these thresholds are particularly challenging as COVID-19 disease prevalence drops. He also noted that in vitro diagnostics are treated differently in terms of the 510(k) process compared with traditional medical devices.

Dr. Giger gave a public thank you to NIBIB for the leadership and support of MIDRC, as her tenure is coming to an end. She also noted that the final number of current imaging studies that Dr. Tromberg mentioned in his presentation can be increased by 5,000.

III. BRAIN Initiative® Update: Dr. Bruce Rosen

Dr. Rosen gave a budget overview from the beginning of the Brain Research Through Advancing Innovative Neurotechnologies® (BRAIN) Initiative through 2026. It is projected that BRAIN will have received $5.8B by 2026 and Dr. Rosen noted that it is impressive that BRAIN has reached its budget target of $500M per year.

Past BRAIN workshops held over the past year that might be of interest to the NIBIB community were mentioned.

Specifically noting the Brain Behavior Quantification & Synchronization Workshop, Dr. Rosen brought to the Council’s attention ongoing needs, including the technological (miniaturization; closed loop systems; sensors for acquiring data from multiple modalities; data synchronization and fusion across modalities), as well as the computational (theoretical frameworks; data infrastructure; and ML/AI approaches). From the Brain Across the Lifespan Workshop, Dr. Rosen mentioned the importance of tools and methods to measure changing brain cellular identity, connectivity, and activity over time as well as the emphasis on approaches that can be scaled across longer time periods and for more subjects; translate from animals to humans, including fetal and neonatal; and connect neurodevelopment to neurodegeneration.

Dr. Rosen also briefly discussed BRAIN Initiative Workspace to Organize the Knowledge Space (BRAINWORKS), the BIA Toolmakers Resource, and the BRAIN Initiative Challenge: Ethical Considerations of BRAIN Technologies. He also mentioned that BRAIN, like many other NIH initiatives, has continued its commitment to expanding equity and diversity.

The following FOAs maybe be of interest to the NIBIB community:
- Technology and Resource Dissemination (due Feb, Oct 2022)
- Translational Devices (due Feb, June 2022)
- Research Education and Training (due Feb 2022)
- Ethics Integration (Rolling until April 2022)
- BRAIN Initiative Connectivity across Scales (BRAIN CONNECTS) (due Summer 2022)
  - Comprehensive Centers for Human and Non-Human Primate Brain
  - Comprehensive Centers for Mouse Brain
  - Specialized Projects for Scalable Technologies

The BRAIN Initiative is now focusing on three new transformative projects (as suggested by the BRAIN 2.0 report) including a comprehensive human brain cell atlas, a whole mammalian brain microconnectivity map, and tools for precision access to brain cell types.

Finally, the 8th Annual BRAIN Initiative Meeting will be held June 21-22, 2022.

IV. Adjournment

The open session of the NACBIB meeting was adjourned at 2:59 p.m.
V. Closed Portion of the Meeting

This portion of the meeting was closed to the public in accordance with the determination that it was concerned with matters exempt from mandatory disclosure under sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., and section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. Appendix 2).

Members absented themselves from the meeting during discussion of and voting on applications from their own institutions, or other applications in which there was a potential conflict of interest, real or apparent.

VI. Review of Applications

The National Advisory Council for Biomedical Imaging and Bioengineering considered 875 research and training applications requesting $2,716,628,450 in total costs. The Council recommended 875 applications with a total cost of $2,716,628,450.

ADJOURNMENT

The meeting was adjourned at 4:00 p.m. on May 17, 2022.

Certification:

We certify that, to the best of our knowledge, the foregoing minutes are accurate and complete.²

David T. George, Ph.D.
Executive Secretary
National Advisory Council for Biomedical Imaging and Bioengineering
Associate Director for Research Administration
National Institute of Biomedical Imaging and Bioengineering

Bruce Tromberg, Ph.D.
Chairperson,
National Advisory Council for Biomedical Imaging and Bioengineering
Director,
National Institute of Biomedical Imaging and Bioengineering

² These minutes will be approved formally by the Council at the next meeting on September 13, 2022, and corrections or notations will be stated in the minutes of that meeting.