DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
NATIONAL ADVISORY NEUROLOGICAL DISORDERS AND STROKE COUNCIL

Summary of Meeting[1]
September 7-8, 2022

The National Advisory Neurological Disorders and Stroke (NANDS) Council was convened for its 217th meeting on September 7-8, 2022, via Zoom remote meeting. Dr. Walter Koroshetz, Director of the National Institute of Neurological Disorders and Stroke (NINDS), served as Chairperson.

In accordance with Public Law 92-463, the meeting was:

Open: September 7, 2022: 1:03 p.m. to 4:51 p.m. for the review and discussion of program development, needs, and policy; and
Closed: September 8, 2022: 1:01 p.m. to 4:38 p.m. for the consideration of individual grant applications.

Council members present:
Dr. Amy Brin
Dr. Robert Brown Jr.
Dr. S. Thomas Carmichael
Dr. Nita Farahany (Wednesday only)
Dr. Aaron Gitler
Dr. Arnold Kriegstein
Dr. Claudia Lucchinetti
Dr. Kenneth Maynard
Dr. John Maunsell
Dr. Louise McCullough
Ms. Eileen Murray
Dr. Gina Poe
Dr. Ekemini Riley
Dr. Timothy Ryan
Dr. N. Edwin Trevathan
Ms. Christin Veasley

Ex officio members present:
Dr. David Brody
Dr. Christopher Bever, Jr.

Council Roster (Attachment 1)

The entire meeting was held virtually over Zoom and all observers including members of the public attended virtually.

Some members of the public present for portions of the open meeting included:

Dr. Natalia Rost, Chief and Professor of Neurology, Harvard Medical School

Federal attendees are listed at the end of these minutes.

[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 real or apparent conflict of interest might occur.

I. Call to Order and Opening Remarks

Dr. Koroshetz welcomed Council members, visitors, and staff to the 217th meeting of the National Advisory Neurological Disorders and Stroke Council.

II. Report of the Director, Division of Extramural Activities, NINDS

Dr. Robert Finkelstein

Approval of Council Minutes—Dr. Finkelstein requested, and the Council voted approval of the May 18-19, 2022, Council meeting minutes.

The following future Council meeting dates were confirmed:

Wed & Thurs, February 1-2, 2023
Wed & Thurs, May 31, 2023-June 1, 2023
Wed & Thurs, September 6-7, 2023
Wed & Thurs, February 14-15, 2024
Wed & Thurs, May 15-16, 2024
Wed & Thurs, September 4-5, 2024

Expedited Review Process – Each Council round, a subset of Council members approves applications in advance of the meeting with scores within the payline. This expedited review process focuses on applications for which there are no unresolved issues. Dr. Finkelstein thanked Council members Ekemini Riley, Ken Maynard and John Maunsell for handling this responsibility for this meeting and the fiscal year. For the current Council round, 141 applications were eligible to be expedited. A portion of these awards already have been issued, and the others will be issued after Council.

Extramural Announcements

All extramural introductions were posted to the NINDS Electronic Council Book (ECB).

III. Report of the Director, NINDS

Dr. Walter Koroshetz, Director, NINDS

NIH and NINDS Leadership Changes—Dr. Nina F. Schor has been appointed as the new NIH Acting Deputy Director for Intramural Research (DDIR), replacing Dr. Michael M. Gottesman, who served in this position for the past 29 years. Dr. Jeffrey S. Diamond has been named Acting Scientific Director for the NINDS Intramural Research Program, and Dr. Amy Bany Adams, NINDS Deputy Director for Scientific Management and Operations, has been appointed NINDS Acting Principal Deputy Director following Dr. Schor's departure.

President Biden has appointed Dr. Monica M. Bertagnolli as 16th Director of the National Cancer Institute. In December, Dr. Anthony S. Fauci will step down from his positions as Director of the National Institute of Allergy and Infectious Diseases (NIAID), Chief of the NIAID Laboratory of Immunoregulation, and Chief Medical Advisor to President Biden. During his 54 years at NIH, Dr. Fauci served as Director of NIAID for 38 years, advising seven U.S. Presidents.

Budget—For the start of Fiscal Year (FY) 2023, the federal government is expected to operate under a Continuing Resolution (CR); thus NINDS is planning to maintain funding at FY 2022 levels until an FY 2023 budget is passed. Proposed FY2023 budgets include a 10 percent increase (House Mark) and a 3.1 percent increase (Senate Mark) to the NINDS base. Additional Brain Research Through Advancing Innovative Neurotechnologies® (BRAIN) and Helping to End Addiction Long Term® (HEAL) appropriations would increase the NINDS budget by 8.6 percent (House) and 5.9 percent (Senate). A $200 million increase to the Alzheimer's Initiative proposed by the House would bring NINDS administration of this Initiative to $294 million.

NINDS projected FY 2023 noncompeting funds are calculated to be $1,106.2 million, with competing funds projected at $367.1 million. NINDS intends to maintain an interim payline at the 14th percentile during the CR.

Advanced Research Projects Agency for Health (ARPA-H)— Acting Deputy Director Dr. Adam H. Russell is establishing the Agency's infrastructure and filling administrative positions. President Biden intends to appoint an Agency Director in the near future.

Increasing Access to Data and Publications—On August 25, 2022, President Biden signed a new open-access policy that will require all U.S. agencies to ensure access to federally funded research without delay following publication. NIH is collaborating with stakeholders to develop a plan to operationalize this policy for NIH-funded research; this plan must be made available within 6 months.

NIH Data Management and Sharing Policy Applications received after Jan. 25 2023 must include a plan for sharing both published and nonpublished scientific data.

Undiagnosed Diseases Network—The NIH Common Fund Undiagnosed Diseases Network (UDN) is a nationwide network of NIH intramural and extramural sites that use a team science approach to apply clinical advances toward diagnoses. In FY 2023, the UDN will transition from NIH Common Fund to NINDS funding. In FY 2022, NINDS released two UDN-related funding announcements: a data management coordinating center to provide infrastructure, data management, and clinical research support for a new network of clinical sites and a limited 1-year competition for continuation of clinical sites. With sufficient funding in FY 2023, the clinical sites will be expanded to broaden access for under-insured participants and health disparity populations.

Responding to Long COVID—In August, the U.S. Department of Health and Human Services (DHHS) released two reports on a federal response to post-acute sequelae of COVID (PASC): Services and Supports for Longer-Term Impacts of COVID 19 and National Research Action Plan on Long COVID. PASC include neurologic problems with concentration, memory, pain, autonomic dysfunction, and sleep disorders.

The RECOVER Initiative involves longitudinal cohort studies (40,000 controls and individuals suffering from post-acute sequelae); electronic health record (EHR) and health system studies (60 million records from more than 4 million COVID cases); and adaptive platform, multitherapeutic clinical trials (CTs) that test a range of interventions and use diverse methods to address symptoms, symptom clusters, and underlying mechanisms of pathobiology. RECOVER has awarded over $37 million for more than 40 research projects focused on advancing knowledge of how COVID affects different body tissues and organs.

Two recent reports identified circulating extracellular vesicles as a biomarker of persistent SARS-CoV-2 antigenemia in PASC (Craddock V et al. and Swank Z et al.) Investigators are trying to validate these studies in the RECOVER cohort. Plans are under way for an antiviral CT among people with evidence of consistent antigenemia.

Shortage of Nonhuman Primates in Research—Testing of COVID treatments and vaccines intensified demand for nonhuman primate (NHP) models, and demand soon may outpace supply at primate research centers or similar NIH facilities. NIH is investing in NHP resources with a focus on ensuring compassionate and ethical care. An ad hoc committee of the National Academies of Sciences, Engineering, and Medicine is examining the current role of and future needs for NHP in biomedical research.

ALS Strategic Plan and ACT for ALS Provisions—An NINDS Council Working Group is drafting a new ALS Strategic Plan to develop priorities to accelerate research on the biology underlying amyotrophic lateral sclerosis (ALS); translate fundamental research into therapies; optimize clinical research; improve quality of life through research; and identify opportunities for collaboration. A public workshop set for October 26 and 27 will provide opportunities for discussion and comment and inform recommendations that will be reviewed during the February 2023 NINDS Council meeting.

In December 2021, President Biden signed the Accelerating Access to Critical Therapies (ACT for ALS) Act that provided a $25 million appropriation to NIH for implementation of the Act, which allows people with ALS who are ineligible for CTs to receive investigational drugs or biological products under expanded access. NINDS was charged with soliciting and reviewing grants and developing a funding plan. NINDS has been working with the Food and Drug Administration (FDA) to develop a public-private partnership focused on advancing regulatory science that will lead to effective treatments for ALS.

Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) Research Strategic Plan—NINDS is launching a strategic planning process to identify gaps and research opportunities to advance ME/CFS research. A serious, complex, chronic, and systemic disease, ME/CFS is associated with neurological, immunological, autonomic, and energy metabolism dysfunction. A first step in the planning process will be the establishment of a Working Group comprising NINDS Council members, ME/CFS investigators, healthcare providers, advocates, and individuals with ME/CFS.

Recent Meetings—Dr. Koroshetz highlighted recent meetings, including the 3rd Annual NIH HEAL Initiative® Investigator Meeting, the 17th Annual NIH Pain Consortium Symposium, the NINDS 2022 Nonprofit Forum that brought together advocacy organizations representing over 70 different disease groups, and the 8th Annual BRAIN Initiative® Meeting.

Platform for Future Council Meetings—Upcoming Council meetings are being planned with a goal of balancing opportunities for in-person connections with the inclusiveness of virtual meetings. Current plans call for the January 2023 meeting to be remote, followed by an in-person meeting in May. The platform for September will be selected depending on Council quorum.

IV. Discussion of Director's Report

Council members commented on the limited ARPA-H activity until a full-time Director is hired and asked about funding sources for implementation of the ALS Strategic Plan. Dr. Koroshetz

noted that the ACT for ALS Act calls for FDA to start a grant program, which is somewhat different from that agency's usual activity.

Update: BRAIN Initiative Plan for Enhancing Diverse Perspectives

Dr. John Ngai, Director, BRAIN Initiative®

In Spring 2021, The BRAIN Initiative® began including a new component in most funding opportunity announcements (FOAs) requiring that applications include a Plan for Enhancing Diverse Perspectives (PEDP). Dr. Ngai described the results of a preliminary analysis of the first eight Requests for Applications (RFAs) that included the PEDP requirement. He shared preliminary outcomes from a small subset PEDPs. An analysis of a more robust dataset will be brought to the BRAIN Multi-Council Working Group to inform NINDS and NIH of its impact.

V. NIH Policy for Data Management and Sharing

Dr. Mike Lauer, Deputy Director, Office of the NIH Director

Dr. Lauer provided an update on the implementation of the NIH Data Management and Planning Policy. Data sharing is of interest at the highest level of government, and related policies have evolved and expanded from the 2003 NIH policy to the policy and guidance released in October 2020 that will be effective for applications received from January 25, 2023, onward. Designed to advance rigorous and reproducible research and promote public trust in research, the new policy raises the level, extent, and depth of data sharing.

Recent articles have demonstrated that a lack of access to data inhibits the ability to reproduce research findings. For example, researchers from a study of reproducibility in cancer biology reported being unable to obtain data for 68 percent of 193 experiments published in 53 high-impact papers; a study of researcher compliance with data availability statements found that "Many researchers were not compliant with their published data sharing statement." However, there is also evidence that data sharing is happening and yielding scientific results. For example, a 2017 study on Use of the National Heart, Lung, and Blood Institute Data Repository found that patient-level data from 88 of 100 available CTs were requested at least once, and a total of 277 articles were published on the basis of data from 47 trials. Results of a Pew Research Center study indicate that people are more likely to trust scientific research findings if data are openly available to the public.

The policy includes two requirements: grantees must (1) submit a Data Management and Sharing "Plan" for all NIH-funded research and (2) comply with the plan approved by the Institute, Center, or Office (ICO). Data sharing should be the default practice and maximized; prospectively planned for at all stages of the research process; and responsibly implemented in a way that protects privacy, rights, and confidentiality and abides by existing laws, regulations, and policies. Legitimate limitations on sharing of data include restrictions imposed by informed consent language; insufficiency of available protections of participant privacy or safety; explicit federal, state, local, or tribal law, regulation, or policy; restrictions by existing or anticipated agreements with other parties; and impracticability of digitizing datasets with reasonable efforts.

All data should be managed, but not all data need to be shared. *Scientific data* refers to published or unpublished "factual material…of sufficient quality to validate and replicate

research findings." Data should be accessible as soon as possible; that is, no later than publication or end of award.

The sharing.nih.gov website is the central source for guidance on data management and sharing, understanding the policy, applicability of the policy, and data repositories, as well as planning and budget. resources

Elements of a data management and sharing plan include data type; related tools, software, and code; data standards; data storage (e.g., which repository); data preservation, access, timelines; access, distribution, and reuse considerations; and data management oversight (i.e., how plan compliance will be monitored and by whom). Investigators are encouraged to use established repositories; a list is available on the website.

Allowable costs include reasonable costs for data curation, development of supporting documentation, local data management, and preserving/sharing of data through repositories. By contrast, infrastructure costs typically included in indirect costs and costs associated with routine conduct of research are not allowable costs.

The extramural plan submission and review process includes submission, assessment, and compliance. The data management and sharing plan should be no more than two pages long; an optional format page will be available on the NIH forms and applications examples page. Peer reviewers comment on but do not score the budget; plans are assessed by NIH program staff and can be revised. Compliance with the plan is incorporated into Terms and Conditions, is monitored at regular reporting intervals, and may factor into future funding decisions.

Discussion

Council members commented on consent language for large cohorts assembled in the past that limit data sharing. Dr. Lauer reported that NIH has developed suggested consent language for broad data sharing that will help prospective data collection.

Concerns were expressed about the potential for statistical errors resulting from repeated use of datasets. Dr. Lauer noted that the use of digital markers for datasets will be encouraged as a means for tracking how many times the dataset has been reused and measure its influence; such a marker could be linked to a grant, institution, or individual scientist.

Questions were raised about budgetary consequences of policy implementation. Dr. Lauer expects policy implementation to have modest budgetary consequences, except for those studies putting together petabytes of data. Council members observed that fees for open-access publications are a barrier to publication; fees range from $1,000 to $10,000. Dr. Lauer clarified that NIH requires public access, not open access. Some groups are calling for all government-funded research to be published through open access. About one-third of papers published by NIH-funded authors are open access—30,000 to 40,000 papers a year at an average cost of $3,000.

Although the current data sharing policy allows for a 12-month delay between publication and public access, a recent White House memo stipulated no delays for access. Dr. Lauer noted that implementation of the memo calls for submission of a plan to the White House Office of Science and Technology Policy (OSTP) in February 2023. There will be opportunities for public comment.

VI. Publication of Null Results

Dr. Shai Silberberg, Director, Office of Research Quality (ORQ), NINDS

Dr. Silberberg provided an overview of significance and consequences of publication bias and outlined a strategy for addressing publication bias in biomedical research and encouraging publication of null results.

The NIH Policy for Data Management and Sharing defines *scientific data* as "the recording of factual materials commonly accepted in the scientific community as of sufficient quality to validate and replicate research findings." In determining that the data are of sufficient quality, one assumes that the data have been obtained using rigorous methods and annotated, and that no data have been omitted. The NIH policy focuses on the scientific data that underlie the research findings. By extension, that includes sharing results that do not support a hypothesis (i.e., negative or null results).

The value of sharing null results has long been recognized within the scientific community. In a recent Government Accountability Office (GAO) report to the Senate Committee on Commerce, Science, and Transportation, experts recommended encouraging publication of null research results.

The negative consequences of failure to share null results are well known. For example, if investigators are unaware that an experiment yielded null results, they might repeat the same experiment and fail to publish, and the same experiment might be repeated by still others.

In her *1990 Journal of the American Medical Association* paper on risk factors for publication bias, Dr. Kay Dickersin described publication bias as "the tendency … of investigators, reviewers, and editors to submit or accept manuscripts for publication based on the direction or strength of the study findings." Consequences of publication bias on the biomedical enterprise include misleading or exaggerated effect sizes in meta-analysis; underpowered future studies; and baseless CTs.

Dr. Silberberg summarized evidence of the extent of publication bias. A 2021 ORQ analysis found that only 12 out of 175 neuroscience journals evaluated explicitly support publication of null or negative articles. A study on positive-outcome bias found that reviewers treat null results more harshly. Few publications report studies with no significant effects. Another ORQ analysis showed that the eight journals dedicated to publishing null results did not fare well; they published 470 articles between 2002 and 2018 compared with 65,758 research articles published by the *Proceedings of the National Academy of Sciences* alone during same period. The National Library of Medicine online micropublication accepted single validated results (i.e., positive or negative) with no publication fees and required that underlying data be shared; as of August 2022, only 47 out of the 504 publications reported null results. Eliminating publication costs and indexing in PubMed are not enough to encourage submission of null results.

Dr. Silberberg suggests that addressing the problem of publication bias will require a culture change, one in which NIH can play an important role. He proposes a three-pronged approach: increase value of null results; reduce barriers to publication of null results; and incentivize submission and review of null results.

1. **Increase value of null results**. A strong message that NIH views publication of null results as mission critical could go a long way toward increasing the value of null results. Specifically, NIH might establish and fund a platform dedicated to publication of null results. To enhance legitimacy and quality control of null results, submissions would be linked to well-annotated

underlying data, and peer review would be limited to study methods. The platform would feature a user-friendly search function to encourage use of the resource. NIH-funded investigators would be asked to include information in their annual reports about where null results are described and shared.

2. **Reduce barriers to publication of null results.** Submissions to the platform would be limited to rigorously conducted, well-annotated single experiments. The need to "tell a story" would be eliminated. Free, fast, standardized submission and publication would be enabled, and selection of reviewers who are experts in the methods used would be automated.
3. **Incentivize submission and review of null results.** When evaluating productivity, NIH grant reviews should consider null results included in the biosketch. Digital object identifiers (DOIs) should be attached to reviews that are included in major biomedical databases as citable objects. Listing of citable peer review contributions in the biosketch should be encouraged.

Discussion

Council members commented on the following:

- It was recommended that the platform include a semi-automated way to indicate statistical power.
- Finding reviewers to review negative or nonsignificant findings would be a challenge.
- Publication of negative results may have been undercounted; for example, a typical genome-wide association study produces many negative results. *Neurotrauma Reports,* the open-access companion to *Journal of Neurotrauma*, publishes quite a few null results.
- Preregistered experiments will produce more negative results than discovery experiments.
- The proposed effort could lead to publication of null results from experiments that have minimal value.
- Hiring a professional scientific writer to draft the interesting results would enable investigators to publish the null results instead of focusing solely on the positive results.

VII. Alzheimer's Disease-Related Dementias (ADRD) Program: ADRD Summit 2022 Report

Dr. Roderick Corriveau, Program Director, Alzheimer's Disease-Related Dementias Program
Dr. Natalia Rost, Chief and Professor of Neurology, Harvard Medical School, and Scientific Chair, 2022 ADRD Summit

Dr. Corriveau presented an overview of ADRD research history, including the 2011 National Alzheimer's Project Act (NAPA) and development of the first National Plan to address Alzheimer's Disease. Goal 1 of the National Plan is to prevent and effectively treat AD/ADRD by 2025.

ADRD are types of dementias that share cognitive and pathological features with AD and/or commonly co-occur with typical AD pathology. They include Lewy Body Dementia (LBD), Frontotemporal Degeneration (FTD), Vascular Cognitive Impairment and Dementia (VCID), and mixed multiple etiology dementias (MED).

Congress adds funds to NIH for AD/ADRD research. Since 2015, resources have increased more than fivefold. The National Institute on Aging (NIA) leads the NIH response to the National Plan,

which includes summits that set national research priorities and identify the most urgent research needed to meet the National Plan goal. NINDS leads the NIH, LBD, FTD, VCID, and ADRD summits. NIA and NINDS collaborate closely on funding opportunities, paylines, and triennial AD, ADRD, and Care Summits.

Dr. Corriveau highlighted a recent investigator-initiated scientific advance toward a therapeutic approach in ALS and FTD. Motivated by promising biochemical and phenotypic results in model-based studies, investigators provided preliminary evidence that repeated intrathecal infusions of ION363 resulted in a marked reduction in the burden of Fused in sarcoma (FUS) aggregates that are a hallmark of disease, an important step toward successful treatment.

Added funds since 2016 have enabled NINDS to establish and lead major ADRD research programs and consortia, including FTD Center Without Walls, FTD Sequencing Consortium, ALLFTD Natural History Study (with NIA), CONNECT-Traumatic Brain Injury, and intramural Center for Alzheimer's Disease Research (CARD) (with NIA). A recent science advance arising from the Structural Biology of ADRD Proteinopathies and the LBD Center Without Walls identified TMEM106B, a new misfolded protein associated with multiple AD/ADRD diagnoses. This association indicates a shared fibrillization pathway that may initiate or accelerate neurodegeneration.

The TMEM106B finding reinforces an emerging view of AD and ADRD that acknowledges and aims to address multiple pathways toward dementia. The traditional perception of a relationship between brain pathologies and clinical dementia diagnoses is the exception rather than the rule; rather, more than one disease process typically is present in an individual's brain. Increased recognition of the dominance of mixed pathologies should help advance toward effective treatments.

Dr. Corriveau highlighted activities of ADRD programs, including the National Consortium to Develop and Validate CT-Ready VCID Biomarkers (imaging and fluid biomarkers). NINDS has a research supplement to promote diversity in health-related research. NINDS ADRD programs that address health equity include DetectCID, which is leading the effort to improve quality of patient evaluations for detection of cognitive impairment in everyday clinical settings, with an emphasis on populations that experience health disparities; Determinants of Incident stroke Cognitive Outcomes and Vascular Effects on RecoverY (DISCOVERY); Diverse VCID, a large prospective study conducting in-depth MRI characterization of white matter lesions and comorbidities; MarkVCID, a multisite national consortium that is developing and validating VCID biomarkers for dementia CTs; and the Mind Your Risks campaign that stresses the importance of controlling blood pressure to prevent stroke and dementia.

Information about 28 AD/ADRD funding announcements (14 each for FY 2022 and FY 2023) covering disease mechanisms, training, CTs, clinical research, and translation can be found at https://www.ninds.nih.gov/current-research/focus-disorders/alzheimers-related-dementias. Applications for investigator-initiated AD/ADRD research may be submitted to the NIH parent R01 and NINDS R21 (PA-21-219).

Dr. Rost presented a report on the 2022 ADRD Summit held March 22–23 (distributed to Council prior to the meeting). This report, if approved by the NANDS Council, will be delivered to the DHHS NAPA Council. The NAPA Council then will consider including Summit recommendations in the next annual update of the National Plan. Dr. Rost described serving as Scientific Chair for the

Summit as a great opportunity to gain understanding of the transparency of the process by which the priorities in AD/ADRD research are set.

More than 1,500 individuals registered for the virtual Summit, and 400 to 700 participants logged on during most sessions, with broad engagement across the academic, clinical, government, industry, nonprofit, and public sectors. Presenters included 128 panelists and 44 individual speakers. Presentations covered a broad range of traditional Summit topics such as Health Equity in AD/ADRD as well as special MED topics—Post-Traumatic Brain Injury (TBI) ADRD; Limbic-Predominant Age-Related TDP-43 Encephalopathy (LATE TDP-43) in Common Late-Onset Dementias; and Impact of COVID-19 on AD/ADRD Risk and Outcomes.

An important feature of ADRD Summits is open, transparent engagement with stakeholders. Significant time was dedicated to an open-microphone question, answer, and comment period, which fostered robust dialogue between scientists and other stakeholders. A special video testimonial, "Voices of AD/ADRD," was introduced on the second day to raise awareness of the disease burden on patients with AD/ADRD and their caregivers.

Dr. Rost highlighted critical advances in each topic area. In FTD, these include biomarker development, translation to CT, and attempts to address a broad spectrum of the disease. The VCID field has prioritized biomarkers to untangle complex phenotypes, novel models, and translation of basic research findings into clinical science. Central efforts in LBD have included clinical characterization and interventions, pathogenesis, and mechanisms of toxicity. The MED field has focused on detection, diagnosis, and interventions as well as data harmonization. Priorities in post-TBI ADRD advancements have included collaboration, harmonization, and phenotype characterization. Researchers in TDP-43 have worked on a definition and two landmark disease models. In emerging science, COVID-19 impact and AD/ADRD risk and outcomes were reviewed.

Although there was a consensus that great progress has been made since 2019, more progress is needed to accelerate clinical translation of emerging science. The following cross-cutting themes emerged in scientific presentations and discussions:

- Health equity in AD/ADRD as an imperative and continuing unmet need, with an emphasis on broadening inclusivity among study participants, the workforce engaged in research, and communities
- The need for research and implementation of pragmatic approaches and solutions in AD/ADRD, including pragmatic CTs
- The urgent need for precise biomarkers to identify underlying disease processes in healthy individuals and those with diagnosed AD/ADRD or prodromal syndromes
- Innovative approaches to personalized prevention and treatment that address health equity and diverse populations by design
- In clinical research, prevention, presymptomatic vigilance, and concerted efforts to support the immediate needs of individuals living with cognitive impairment and dementia
- In basic research, novel strategies and tools and/or seeking synergies and maximizing divergence in disease pathways.

Dr. Rost highlighted priority 1-level recommendations from each scientific working group.

- Health Equity in AD/ADRD
  1. Advance equity in AD/ADRD research via inclusion science to improve representative sampling and retention of diverse communities.
  2. Increase training support and capacity of an AD/ADRD scientific workforce of persons historically under-represented in biomedical, behavioral, and social sciences.
- Frontotemporal Degeneration (FTD)
  1. Understand FTD epidemiology and genetics in diverse populations, including how socioeconomic and ethnocultural status affects disease risk and manifestations.
  2. Advance understanding of FTD and identify therapeutic targets through the creation, validation, and use of pre-clinical and translational tools and resources.
- Vascular Contributions to Cognitive Impairment and Dementia (VCID)
  1. Basic Mechanisms and Experimental Models: Establish and refine experimental models and technologies to identify disease-relevant mechanisms underlying VCID.
  2. Human Studies: Develop and validate markers of VCID in diverse populations using 1) cognitive, physical, or other functional assessments, and 2) biomarkers of key vascular processes, including in the most common scenario where VCID is accompanied by AD in human studies.
- Lewy Body Dementias (LBD)
  1. Clinical Characterization and Intervention: Prepare for and initiate clinical trials that aim to alleviate or slow the course of LBD symptoms, and delay or prevent the onset of disease.
  2. Pathogenesis and Mechanisms of Toxicity: Delineate genetic loci and their functions contributing to the onset and progression of LBDs using genetic, transcriptomic, epigenetic, and environmental characterization analyses.
- Multiple Etiology Dementias (MED)
  1. Detection and Diagnosis of Cognitive Impairment and MED: Evaluate pragmatic approaches to objectively detect cognitive impairment and link to quality care when a patient, care partner, or clinician reports cognitive, behavioral, or functional changes.
  2. Interventions and Treatments for MED: Conduct clinical studies on approved or promising interventions and treatments to mitigate risk for cognitive decline.
- MED Special Topic: Post-TBI AD/ADRD
  1. Promote collaboration among TBI and dementia researchers through working groups, retrospective and prospective data and measurement harmonization, and interdisciplinary research.
- MED Special Topic: LATE (TDP-43 in Common Late-Onset Dementias)
  1. Define LATE (pathologic, clinical, genetic, molecular) classification and diagnostic boundaries across FTLD-TDP, AD, and other dementia related pathologies and their

syndromes to enhance diagnosis, research, and awareness assuring diversity, inclusion, and equity.

- MED Special Topic: Impact of COVID-19 on AD/ADRD Risk and Outcomes
  1. Establish research infrastructure enabling clinical, epidemiological, and basic research studies of COVID-19 impact on AD/ADRD risk and outcomes, prioritizing disproportionally affected populations and clinical trials readiness.

Videocasts of the Day 1 and Day 2 Summit are available on the NIH webcast archive.

Discussion

A motion to accept the report was made, seconded, and carried.

VIII. Initiatives Requiring Concept Clearance

Three concepts were presented for discussion.

Concept 1: NIH Neuroscience Development for Advancing the Careers of a Diverse Research Workforce (R25) (Reissue of PAR-20-240)
Marguerite Matthews, Division of Extramural Activities, Office of Programs to Enhance Neuroscience Diversity, NINDS

The proposed concept would employ an R25 mechanism to support professional and networking opportunities for underrepresented neuroscience graduate students, postdoctoral researchers, and junior faculty and enhance institutional commitment to workforce diversity and inclusion.

Concept 2: Renewal of Sudden Death in Young Case Registry
Vicky Whittemore, Division of Neuroscience, NINDS

The proposed renewal would (1) continue funding for case ascertainment within this unique population-based surveillance registry for sudden death in children up to age 20 and (2) increase funding to expand biospecimen collection at time of autopsy to expand sudden unexpected death in epilepsy (SUDEP) research resources.

Concept 3: Joint Resources for Human Single-Cell Omics Data from BRAIN and Blueprint ICs
Daniel Miller, Division of Neuroscience, NINDS

The proposed concept would initiate harmonization and joint storage of Blueprint and IC datasets via pilot projects for joint analysis, storage, and convening of disease-focused and BRAIN-funded investigators at an NIH workshop to identify barriers and opportunities and help establish common data standards.

Dr. Koroshetz noted that with increased sharing of data, the new challenge is making sense of it, which requires in-depth thinking about increasing searchability, usability, and harmonization to enable appropriate comparisons.

Additional Concepts

4. Reissue: PAR-20-101: Genomic Expert Curation Panels Lead*: Vicky Whittemore*
5. Reissue: PAR-20-076: Jointly Sponsored T32 Lead: *Delany Torres Salazar*

6. Reissue: RFA-NS20-006: BRAIN Initiative®: Biology and Biophysics of Neural Stimulation and Recording Technologies (R01 Clinical Trials Optional) Lead*: Sahana Kukke*

The council voted to approve the six proposed concepts.

IX. Review of Conflict of Interest, Confidentiality, and Council Procedures; Council Consideration of Pending Applications

This portion of the meeting was closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5, U.S. Code and Section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. Appendix 2).

Conflict of Interest – Regulations concerning conflict of interest were reviewed. Council members were reminded that materials furnished for review purposes and discussion during the closed portions of the meeting are considered privileged information. All Council members present signed a statement certifying that they had not been involved in any conflict-of-interest situations during the review of grant applications.

Confidentiality – During the closed session, any information that is discussed and the outcome of any recommendation are considered privileged information. They may not be discussed outside of the closed session. If an applicant requests support for his or her application from a Council member, the Council member must respond that he/she is not permitted to discuss the application. Any inquiry should be referred to Dr. Robert Finkelstein, NINDS Advisory Council Executive Secretary, who then will refer the question to the appropriate staff member for response.

Research Training and Career Development Programs – The Council reviewed a total of 359 research career development and institutional training grant applications with primary assignment to NINDS, and 236 of them (66 percent) were scored in the amount of $23.1 million first-year direct costs. It is anticipated that, of the research career development and institutional training grant applications competing at this Council, NINDS will be able to pay first-year direct costs of approximately $12.8 million (115 grants).

Research Project and Center Awards – The Council reviewed a total of 1,437 research project and center applications with primary assignment to NINDS, and 842 of them (59 percent) were scored/percentiled in the amount of $340.4 million first-year direct costs. It is anticipated that, of the research grants competing at this Council, NINDS will be able to pay first-year direct costs of approximately $118.1 million (308 grants).

Senator Jacob Javits Neuroscience Investigator Awards – The Senator Jacob Javits Neuroscience Investigator Awards are made to distinguished investigators who have a record of scientific excellence and productivity, who are actively pursuing an area of research of strategic importance, and who can be expected to continue to be highly productive for a seven-year period. Candidates are nominated and selected at each Council meeting. Council approved three Javits nominations at this meeting: Reza Shadmehr, Ph.D., M.S. (Johns Hopkins University), Christina Sigurdson, D.V.M., Ph.D. (University of California-San Diego) and Helen Scharfman, Ph.D. (Nathan S. Kline Institute).

Small Business Innovation Research and Small Business Technology Transfer Award Programs – The Council reviewed a total of 130 Small Business Innovation Research (SBIR) and Small Technology Transfer Award (STTR) grant applications with primary assignment to NINDS, and 76 of them (58 percent) were scored in the amount of $34.9 million first-year direct costs. It is anticipated that, of the SBIR and STTR applications competing at this Council, NINDS will be able to pay first-year direct costs of approximately $6.3 million (12 grants).

X. Adjournment

The meeting was adjourned at 4:38 p.m. on Thursday, September 8, 2022.

NINDS employees present for portions of the meeting included:

Open Session:

DeAnna Adkins
Mir Ahamed
Rachel Anderson
Ram Arudchandran
Taryn Aubrecht
Hibah Awwad
Debra Babcock
Julia Bachman
Linda Bambrick
Amy Bany Adams
Elena Barnaeva
Jennifer Barnes
Patrick Bellgowan
Janna Belser-Ehrlich
Jonathan Bennett
Karrah Benson
Marci Bollt
Carolyn Bondar
Naomi Booker
Francesca Bosetti
Chris Boshoff
Jeremy Brown
Erin Bryant
Ryan Calabrese
Roger Campbell
Emily Caporello
Thomas Carmichael
Maria Charlier
Thomas Cheever
Daofen Chen
Bo-Shiun Chen
Sophie Cho
Ben Churn
Rod Corriveau
Devon Crawford
Charles Cywin
William Daley
Sara Dauber
Vedangi Desai
Neel Dhruv
Dana DiScenza
Sara Dodson
Adele Doperalski
Argenia Doss
Kristin Dupre
Anahid Ebrahimi
Debbie Eng
Judy Fabrikant
Carlos Faraco
Robin Felder
Robert Finkelstein
Jane Fountain
Megan Frankowski
Deborah Freaner
Alissa Gallagher
Lina Garcia
Shannon Garnett
Hermon Gebrehiwet
Marie Gill

Jordan Gladman
Amelie Gubitz
Kristina Hardy
Adam Hartman
Brandon Hartsell
Brian Haugen
Jane Hettinger
Lanier Heyburn
Rebecca Hommer
Mariah Hoye
Nina Hsu
Eric Hudak
Xantippe Humphries
Smriti Iyengar
Lyn Jakeman
Scott Janis
David Jett
Lataisia Jones
Michelle Jones-London
Cory Kelly
Brenda Kibler
Jenny Kim
Brien Klein
Yasmin Kloth
Jim Koenig
Stephen Korn
Walter Koroshetz
Pascal Laeng
Nick Langhals
Crystal Lantz
Mike Lauer
Crystal Lee
Miriam Leenders
Janelle Letzen
Erica Littlejohn
Car Long
Tim Lyden
Ernie Lyons
Laura Mamounas
Heidi Matos
Marguerite Matthews
Amber McCartney
Linda McGavern
Barbara McMakin
Carolina Mendoza-Puccini
Mirela Milescu
Daniel Miller
DP Mohapatra
Karen Molina
Marilyn Moore-Hoon
John Ngai
Cristina Nigro
Glen Nuckolls
Jiaqi O'Reilly
John Ogawa
Joan Ohayon
Ana Olariu
Oreisa O'Neil
Michael Oshinsky
Dave Owens
Tatiana Pasternak
K. Paul Rezaizadeh
Michele Pearson
Mary Ann Pelleymounter
Leah Pogorzala
Linda Porter
Kevin Powell
Pragya Prakash
Rebecca Price
CJ Puttaswamy
Carlo Quintanilla
Shamsi Raeissi
Shanta Rajaram
Ranga Rangarajan
Yogendra Raol
Alva Recinos
Matthew Rice
Ryan Richardson
Robert Riddle
Sarah Robinson Schwartz
Xing Rong
Becky Roof
Ellen Rosenberg
Natalia Rost
Cheryse Sankar
Joel Saydoff
Alisa Schaefer
Lindsey Scott
Paul Scott
Nilkantha Sen

Arvind Shukla
Beth-Anne Sieber
Shai Silberberg
Adissa Silue
Mario Skiadopoulos
Shardell Spriggs
Rukma Sripathi
Natalia Strunnikova
Abhi Subedi
Tao Sun
Maripierre Surpris
Christine Swanson-Fischer
Brooke Sydnor
Elizabeth Sypek
Amir Tamiz
Anna Taylor
Carol Taylor-Burds
Michael Tennekoon
Shruthi Thomas
Christine Torborg
Delany Torres
Laurie Torchinksy
Natalie Trzcinski
Eric Tucker
William Tyler
Lauren Ullrich
George Umanah
Nsini Umoh
Ursula Utz
Nasim Vahidi
Joanna Vivalda
Tam Vo
Laura Wandner
Rachel Weinberg
Keith Whitaker
Matthew White
Samantha White
Vicky Whittemore
Shellie Wilburn
Sarah Woller
Ling Wong
Tracy Wood
Clinton Wright
Xiling Yin
Ariel Zane

Closed Session:

DeAnna Adkins
Mir Ahamed
Ram Arudchandran
Taryn Aubrecht
Hibah Awwad
Debra Babcock
Julia Bachman
Kelly Baker
Linda Bambrick
Amy Bany Adams
Elena Barnaeva
Jennifer Barnes
Patrick Bellgowan
Karrah Benson
Richard Benson
William Benzing
Victoria Bitzer-Wales
Marci Bolt
Carolyn Bondar
Naomi Booker
Francesca Bosetti
Jeremy Brown
Erin Bryant
Ryan Calabrese
Roger Campbell
Emily Caporello
Tom Carmichael
Stacey Chambers
Chi Chang
Maria Charlier
Denise Chatman
Thomas Cheever
Andrew Chen
Daofen Chen
Bo-Shiun Chen
Sophie Cho
Ben Churn
Rebekah Corlew

Rod Corriveau
Devon Crawford
Charles Cywin
William Daley
Sara Dauber
Vedangi Desai
Neel Dhruv
Alicia Diggs
Dana DiScenza
Sara Dodson
Adele Doperalski
Argenia Doss
Kristin Dupre
Anahid Ebrahimi
Debbie Eng
Judy Fabrikant
Carlos Faraco
Robin Felder
Cassandra Fields
Robert Finkelstein
Jane Fountain
Megan Frankowski
Lina Garcia
Hermon Gebrehiwet
Maryam Ghaleh
Marie Gill
Jordan Gladman
Brooks Gross
Amelie Gubitz
Maureen Hambrecht
Kristina Hardy
Adam Hartman
Brian Haugen
Janet He
Jane Hettinger
Lanier Heyburn
Rebecca Hommer
Mariah Hoye
Nina Hsu
Eric Hudak
Xantippe Humphries
Smriti Iyengar
Lyn Jakeman
Scott Janis
David Jett
Li Jia
Brenda Kibler
Jenny Kim
Eunyoung Kim
Brian Klein
Stephen Korn
Walter Koroshetz
Sahana Kukke
Pascal Laeng
Christine Lam
Mark Langer
Nick Langhals
Crystal Lantz
Timothy LaVaute
Crystal Lee
Miriam Leenders
Janelle Letzen
Catherine Levy
Erica Littlejohn
Cara Long
Rosa Lopez
Quynh Ly
Tim Lyden
Ernie Lyons
Laura Mamounas
Gary Marlowe
Heidi Matos
Amber McCartney
Louise McCullough
Linda McGavern
Barbara McMakin
Carolina Mendoza-Puccini
Mirela Milescu
Daniel Miller
DP Mohapatra
Jill Morris
Cristina Nigro
Glen Nuckolls
Jiaqi O'Reilly
Joan Ohayon
Ana Olariu
Michael Oshinsky
Tatiana Pasternak
K. Paul Rezaizadeh
Michele Pearson
Marlene Peters-Lawrence
Mary Ann Pelleymounter

Erna Petrich
Leah Pogorzala
Pragya Prakash
Rebecca Price
Shamsi Raeissi
Yogendra Raol
Alva Recinos
Matthew Rice
Ryan Richardson
Robert Riddle
Sarah Robinson
Becky Roof
Cheryse Sankar
Alena Savonenko
Joel Saydoff
Alisa Schaefer
Paul Scott
Linsey Scott
Nilkantha Sen
Shalini Sharma
Kelly Sheppard
Arvind Shukla
Beth-Anne Sieber
Shai Silberberg
Adissa Silue
Mario Skiadopoulos
Shardell Spriggs
Bernard Srambical
Abhi Subedi
Luis Sullivan
Tao Sun
Maripierre Surpris
Christine Swanson-Fischer
Brooke Sydnor
Elizabeth Sypek
Edmund Talley
Anna Taylor
Carol Taylor-Burds
Michael Tennekoon
Shruthi Thomas
Christine Torborg
Delany Torres
Natalie Trzcinski
Eric Tucker
William Tyler
Lauren Ullrich
George Umanah
Nsini Umoh
Ursula Utz
Nasim Vahidi
Mad Vahidi
Joanna Vivalda
Tam Vo
Laura Wandner
Keith Whitaker
Samantha White
Vicky Whittemore
Shellie Wilburn
Sarah Woller
Ling Wong
Clinton Wright
Xiling Yin
Ariel Zane

Other federal employees present for portions of the meeting included:

Wei-Qin Zhao, CSR
Roger Bannister, CSR
Kathy Partlow, CSR
Laurent Taupenot, CSR
Alexei Kondratyev, CSR
Anne-Sophie Wattiez, CSR
Carole Jelsema, CSR
Aleksey Kazantsev, CSR
Suzan Nadi, CSR
Elyse Schauwecker, CSR

Bernard Srambical-Wilfred, CSR

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

12/16/2022
Date

_____
Robert Finkelstein, Ph.D.
Executive Secretary
National Advisory Neurological Disorders and Stroke Council

Director, Division of Extramural Activities
National Institute of Neurological Disorders and Stroke

12/16/2022
Date

_____
Walter Koroshetz, M.D.
Chairperson
National Advisory Neurological Disorders and Stroke Council

Director
National Institute of Neurological Disorders and Stroke

These minutes will be formally considered by the Council at its next meeting. Corrections or notations will be incorporated in the minutes of that meeting.