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 6, 2023

The National Advisory Neurological Disorders and Stroke (NANDS) Council was convened for its 220th meeting on September 6, 2023, in person and via Zoom. 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 6, 2023: 9:30 a.m. to 3:15 p.m. for the review and discussion of program development, needs, and policy; and

Closed: September 6, 2023: 3:30 p.m. to 5:58 p.m. for the consideration of individual grant applications.

Council members present:	Ad Hoc Council Members:
Dr. Allan Basbaum	Dr. Yishi Jin
Dr. Amy Brin	Dr. Jane Larkindale
Dr. Robert Brown Jr.	Dr. Jin-Moo Lee
Dr. Claudia Lucchinetti	Dr. Hank Paulson
Dr. Kenneth Maynard	
Dr. John Maunsell	Ex officio members present:
Dr. Louise McCullough	Dr. David Brody
Dr. Gina Poe	Dr. Christopher Bever, Jr.
Dr. Ekemini Riley	
Dr. Timothy Ryan	
Dr. Sameer Sheth	
Ms. Christin Veasley	

Council Roster (Attachment 1)
NINDS employees in attendance (Attachment 2)
Federal employees in attendance (Attachment 3)

The meeting was held at the Neuroscience Center and virtually via Zoom.

[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.

Members of the public present for portions of the open meeting included Perry Kirkman, Purdue University.

I. Call to Order and Opening Remarks

Dr. Koroshetz welcomed Council members, visitors, and staff to the 220th meeting of the National Advisory Neurological Disorders and Stroke Council.

II. Report of the Director, Division of Extramural Activities, NINDS - *Dr. Robert Finkelstein*

A. Approval of Council Minutes—Dr. Finkelstein requested, and the Council voted approval of the May 31 – June 1, 2023, Council meeting minutes.

B. The following future Council meeting dates were confirmed:

Wednesday and Thursday, February 14-15, 2024
Wednesday and Thursday, May 15-16, 2024
Wednesday and Thursday, September 4-5, 2024
Wednesday and Thursday, February 12-13, 2025
Wednesday and Thursday, May 14-15, 2025
Wednesday and Thursday, September 3-4, 2025

C. Other Items

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 Tim Ryan, Amy Brin, and Louise McCullough for handling this responsibility for this meeting and the fiscal year. For the current Council round, 89 applications were eligible to be expedited. A portion of these awards already have been issued, and the others will be issued shortly 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. Koroshetz announced that President Biden has nominated National Cancer Institute (NCI) Director Dr. Monica Bertagnolli, for NIH Director, which is a presidentially appointed position. Until the nomination is confirmed by the U.S. Senate, Dr. Lawrence Tabak will continue to serve as the Acting Director of NIH and Dr. Bertagnolli remains the NCI Director.

In addition, Dr. Jeanne Marrazzo was appointed as director of the National Institute of Allergy and Infectious Diseases (NIAID); Dr. Karina Walter as NIH Tribal Health Research Office (THRO) Director; Dr. Jean Simoni as Behavioral and Social Sciences Research Associate Director and Office of Behavioral and Social Sciences Research (OBSSR) Director; and Dr. Jeff Diamond as NINDS Scientific Director.

Dr. Koroshetz announced that Dr. Robert Finkelstein will retire from his position as Director of the NINDS Division of Extramural Activities. He will remain in the position through the end of 2023.

Accelerating Access to Critical Therapies (ACT) for Amyotrophic Lateral Sclerosis (ALS) – ACT for ALS provisions that are directly relevant to NIH include grants for research therapies for ALS to fund scientific research using data from expanded access studies for individuals not otherwise eligible for clinical trials (i.e., Section 2 of the ACT for ALS). The RFA-NS-23-012 was reissued with a budget of $75 million in Fiscal Year (FY) 2023 to implement Section 2 of the ACT for ALS. Applications were reviewed by the NINDS Scientific Review Branch via a special emphasis panel, and the funding plan was approved by the NINDS Council via a special Council meeting on August 24, 2023.

The ALS Clinical and Expanded Access Research Consortium was launched as a component of the public-private partnership (PPP) to provide a large-scale, readily accessible infrastructure for the collection and sharing of a wide range of data, as well as biospecimens, from people living with ALS and at risk for developing ALS. The Accelerating Medicines Partnership® ALS (AMP® ALS), ALS Knowledge Platform, and the Critical Path for Rare Neurodegenerative Disease (CP-RND) will continue providing data to flow to the PPP. The PPP includes industry funding and partnership with the promise of streamlined and collaborative ALS biomarker and therapy development as well as the advancement of regulatory science.

Helping to End Addiction Long-term (HEAL) INITIATIVE® — On October 1, 2023, HEAL will graduate to an Institute/Center (IC)-led governance model, integrating HEAL operations into NINDS and National Institute on Drug Abuse (NIDA) but maintaining collaborative NIH-wide leadership. In this second phase, HEAL 2.0 will continue supporting transformative, synergistic, and cross-cutting research to address the national opioid overdose crises and the development and testing of non-addictive pain therapies. HEAL 2.0 will broaden the pain research collaboration by prioritizing research aimed at addressing the opioid crisis by more effectively managing pain and reducing the likelihood of addiction and opioid use disorder. NINDS will leverage the NIH Pain Consortium and engage a broader set of IC Directors focused on HEAL- supported pain research, including NINDS, NIDA, National Center for Complementary and Integrative Health (NCCIH), National Institute of Dental and Craniofacial Research (NIDCR), National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institute of Biomedical Imaging and Bioengineering (NIBIB), National Center for Advancing Translational Sciences (NCATS), National Institute of Nursing Research (NINR), NIH Clinical Center, and the National Library of Medicine (NLM).

NINDS Health Equity Planning Effort — The NANDSC Health Equity Working Group published a paper on August 15, 2023 in *Neurology* which outlines a strategic planning process with high-level recommendations and a guide to achieving health equity.

NINDS Neural Exposome Strategic Planning — Dr. Koroshetz described the mission and goals of the strategic plan that highlight considerations NINDS should make with respect to neural exposome research. A Council working group has been established to identify research priorities and plans to present a draft report to the May 2024 NANDSC Meeting. An internal NINDS Strategic Plan Development Committee has been formed to generate an implementation plan. It aims to present this document at the September 2024 NANDSC Meeting.

NIH 2023 Data Management and Sharing (DMS) Policy — The DMS Policy is a critical step in a culture change toward open science and data that meet FAIR (findability, accessibility, interoperability, and reusability) principles; it is effective for all research project applications submitted after January 25, 2023. NINDS program staff will evaluate the DMS plans to confirm that they include all data types, tools, software, computer code, data standards, a monitoring and managing plan in place at a funded institution and reflect any related requirements of the Request for Application (RFA) or Notice of Funding Opportunity (NOFO) to which the application responds. Grants specialists will confirm that budget items include only allowable charges. Dr. Koroshetz noted that this will a be continuous learning process for both applicants and NINDS program staff, and he further emphasized that time will be needed to identify best practices across all elements of DMS Plans. Additional guidelines on data sharing information for all applicants and awardees can be found on the NINDS website.

17th Annual NINDS Nonprofit Forum: Progress through Partnership — NINDS held its 17th Annual Nonprofit Forum on July 24 – 25, 2023, in Bethesda, MD. The more than 340 participants included patient and caregiver members from nonprofit groups (over 100 groups represented), NINDS staff and leadership, and representatives from other federal agencies and from industry. Terry Pirovolakis, Founder and CEO of Elpida Therapeutics presented on bespoke gene therapy and shared his experiences and goals to change the way rare diseases—such as spastic paraplegia type 50 (SPG50), a slow progressing neurodegenerative disorder—are approached at the national level.

Forum panelists announced Food and Drug Administration (FDA) approval of several novel treatments for various neurological disorders: Daybue (trofinetide), the first FDA-approved treatment for Rett Syndrome; Skyclarys (omaveloxolone), the first FDA-approved treatment for Friedreich Ataxia; Qalosody (tofersen), the FDA-accelerated approval for treatment of *SOD1-ALS*; and Relyvrio (sodium phenylbutyrate and taurursodiol), a new FDA-approved treatment for ALS.

Upcoming NIH Meetings — The Advancing Digital Endpoints and Digital Health Technologies for Neurological and Neuromuscular Disorders Workshop will be held virtually on September 18, September 20, and October 10, 2023. The Anti-Beta-Amyloid Passive Immunotherapy for Alzheimer's Dementia and Related Imaging Abnormalities (ARIA): What's Next? Workshop, is scheduled on September 28–29, at Bethesda, MD. The HEAL Pain Partnering Meeting will be held virtually on October 4–5. The ACT for ALS and ALS Strategic Priorities Community Update will be held virtually on November 6. The Society for Neuroscience Annual Meeting will take place on November 11 – 15, 2023 in Washington, DC.

Budget for FY 2024 — The President's NINDS base budget for FY 2024 is set at $2.163 billion, slightly less than the $2.167 billion allocated in FY 2023. The Senate proposes to maintain funding for the Brain Research Through Advancing Innovative Neurotechnologies® (BRAIN) Initiative. Given the fiscal uncertainty for FY 2024, NINDS extramural division directors have strategized to reduce FY 2024 projections by $37 million. NINDS proposes an initial payline of 11th percentile and 22nd percentile for early-stage investigators (ESIs). Until the budget is finalized, NINDS will defer significant investments, including large-scale clinical trials, R35s, and High Program Priority awards. Increasing the existing 17.5% administrative cut will also be considered.

Plans for FY 2025 and Beyond — Managing grant sizes has been pivotal to ensure a steady number of researchers funded by NINDS. NINDS introduced a 17.5% administrative cut in awards during a

period of increased NIH funding. NIH and NINDS policy measures to control grant size include administrative cuts, modular grants, and special requirements for applications with budgets exceeding $500,000 per year. However, fewer modular grant applications are being submitted and more proposal budgets are coming in below the $500,000 threshold. In addition, NINDS is funding more grants, and the mean R01 budget has increased by ~$26,000 (due to inflation). Without taking additional measures, NINDS will fund fewer grants. If NINDS receives a reduced budget, the Institute is considering several options: (1) move paylines below 11th percentile and sustain Division-level cuts; (2) incentivize submission of less expensive grants by lowering the "Awaiting Receipt of Application (ARA)" funding level to ~$450,000 (estimated savings $11.4 million) and implementing a "split" payline based on application budgets and (3) reduce the Special Council Review (SCR) policy threshold (e.g. to $1 million total costs).

IV. Discussion of Director's Report

Dr. Koroshetz elaborated on the innovative approaches taken to mobilize diverse mechanisms of support for research and trials and emphasized that each disease presents its unique challenges and funding models.

Several Council members raised concerns about continued soaring prices of newly developed drugs, especially those stemming from PPPs. A Council member asked how NINDS and the broader NIH could influence tempering these costs. The Bayh-Dole Act stipulates that investigators and their institutions retain intellectual property resulting from NIH-funded research; once funded externally, NIH lacks pricing control. However, on the intramural side, there may be avenues to exert more influence. The march-in rights provision permits the government to intervene if a product developed through government-funded research is not utilized aptly, although these rights have never been exercised.

Council members underscored the importance of animal models in drug research and development. Although they have been instrumental in numerous instances, certain ultra-rare diseases lack suitable mouse models, a significant challenge that pushes researchers to explore alternative methods. Dr. Finkelstein highlighted the complexities associated with drug development and underscored that practical implementation of drug development theories can span decades. Ongoing multifaceted challenges include ensuring the drug's proper delivery within the body, averting toxicity, and ensuring optimal pharmacodynamics.

Council members expressed concerns about potential negative effects of the proposed policy changes designed to manage grant size. The proposed SCR policy change could deter individuals from seeking grants, especially those awaiting responses to other grant applications. This can be problematic for those relying on grants for their projects, especially postdoctoral researchers. Though there are exceptions for particularly expensive projects, concerns remain for programs with sizable grants of around $500,000 to $750,000. If such grants are not renewed, it might leave the programs vulnerable. Moreover, the total cost does not factor in pending grants; that is, a project with a $750,000 grant, which might have another grant pending, could be at risk if the primary grant is not secured.

Although the focus has been on grant amounts, the quality and outcomes of the funded work are not deeply discussed. For instance, although many spend time completing their Research

Performance Progress Reports (RPPRs), only a tiny percentage of RPPRs influence funding decisions for the next year. In addition, the feasibility of having NIH staff meticulously review continuing RPPRs was questioned. A mechanism could be put in place to retract funds from projects that are not progressing as expected.

Different funding models like grants, cooperative agreements, and contracts were discussed. Implementing cooperative agreements more broadly, like the Department of Defense method, would allow for stricter milestones. However, this would be labor-intensive and might not be suitable for basic research driven by serendipity and interest.

Adjusting the payline could have negative outcomes, especially for new investigators or ESIs. Prioritizing a higher payline is essential, but many suggestions seem dollar-focused rather than value-based.

A Council member acknowledged the new $1 million SCR threshold for its support of ESIs with innovative projects but expressed concerns about its impact on institutions with high indirect returns. Other Council members considered modifying the modular budget or the SCR, seeking equitable funding distribution. Despite NIH's lack of control over rates, multiple Council members emphasized protecting and prioritizing ESI funding due to the notable decline in ESI paylines. A Council member noted that split paylines seem sensible, given the data indicating that people are applying up to their limits. Other Council members wondered whether eliminating paying any of the SCRs could permit maintenance of a 14th percentile payline.

Several Council members suggested introducing graded administrative cuts, especially for those who exceed a certain percentile score. This could be challenging for existing multi-year grants; increasing administrative cuts could harm projects that are already underway. Some Council members discussed taking funds from the outyears of non-competing grants, but other members expressed disinterest due to the pre-existing commitments researchers may have made based on those funds.

V. Optimizing the Open Session

Dr. Robert Finkelstein, Director, Division of Extramural Activities

Dr. Finkelstein reviewed the eight recommendations from the Council Closed Session Working Group (Section VIII. Closed Session Updates) from the December 2020 NANDSC Meeting that improved the closed session, to inspire ideas on ways to optimize the open session. Dr. Finkelstein and Dr. Koroshetz proposed developing an Agenda Working Group comprising at least three council members (e.g., a clinical researcher, a basic science researcher, a public member) and a few NINDS program staff. The primary role of this working group would be to solicit topic suggestions from both the council and staff. These suggestions could then be categorized and arranged into a prioritized list for discussion during the open session. For each NANDSC meeting, one or two significant topics might be selected for an in-depth discussion. Planning these discussions in advance would allow staff to prepare the necessary background information. Such a plan would remain flexible, adjusting to real-time events as needed, like the pivot to COVID

discussions when the pandemic emerged. The overall aim is to ensure that the sessions are impactful, addressing crucial issues that influence NINDS and the broader NIH.

Discussion

Multiple Council members commended the idea, underscoring its importance for future NANDSC meetings. One Council member suggested having more than three members along with at least three staff members. Council members are keen to volunteer and should champion personal causes, ensuring meetings are lively and interactive.

A Council member asked whether instead of having a dedicated working group, can Council members simply send ideas for future agendas? Although Council members prioritize community concerns, the Council Agenda Working Group format can vary, from emails seeking topics of interest to selected Council members acting as intermediaries. However, forming a burdensome, rigid group should be avoided. Instead, the Council should use suggestions to guide the agenda.

Several Council members raised concerns about a perceived gap in understanding how the Council operates from outsiders' perspectives. Even if Council members are impartial, it might appear biased to the public. Hence, any new group formed should transparently elucidate the Council's operations to ensure everyone knows how decisions are made at NIH.

In addition, allowing the broader community, including scientists and patient advocates, to propose topics should be explored. Open sessions typically contain constants like the Director's report. For proactive operations, an annual review of the NINDS funding statistics by Council members could spot trends, prompting strategic adjustments. It could be beneficial to endow the Council with more responsibilities, making the role more engaging. The goal is to refine Council operations, ensuring it remains dynamic, meaningful, and captivating.

VI. AD/ADRD Update and Funding Strategy

Dr. Rod Corriveau, Director, Alzheimer's Disease-Related Dementias Program

Dr. Corriveau described the mission, structure, governance, and oversight of the NINDS ADRD Program, which is a direct response to the 2012 National Plan to Address AD. AD and AD-related dementias (ADRD) continues to be a major public health issue affecting the health and finances of individuals, families, and the overall population. NINDS continues to collaborate with the National Institute on Aging (NIA) to establish research priorities and fund biomedical research to decrease the burden of dementia on individuals, families, and communities.

Notably, the NIH ADRD research funding increased by 6.1-fold (to $730 M) from 2015 to 2022. The additional funds since FY 2016 allowed NINDS to lead and establish major ADRD Research Programs including MarkVCID, a consortium of U.S. academic medical centers designed to understand the vascular contributions to cognitive impairment and dementia (VCID); CONNECT-TBI, a program with 12 research institutions studying traumatic brain injury (TBI) links to AD/ADRD; and Center for Alzheimer's Disease Research (CARD), a dedicated intramural center collaboration with NIA.

The NIH ADRD Summits shape national ADRD research priorities. The 2022 ADRD Summit approved 11 research milestones that became part of the 2022 National Plan. These milestones aim to advance fundamental knowledge including normal function and basic science of protein, genes,

physiology, and foundational knowledge of societal factors related to dementia. Expert panelists emphasized health equity in AD/ADRD as a major AD/ADRD research gap and identified other unmet needs, including pragmatic approaches and solutions (e.g., pragmatic clinical trials); precise biomarkers crucial to identify underlying disease processes in individuals (e.g., TDP-43, alpha-synuclein); and personalized prevention and treatment approaches (e.g., Determinants of Incident Stroke Cognitive Outcomes and Vascular Effects on RecoverY [DISCOVERY], MarkVCID), and health equity (e.g., REasons for Geographic and Racial Differences in Stroke [REGARDS]). Since the first ADRD Summit in 2013, NINDS has issued more than 70 FOAs, including 14 in FY 2023, inviting applications to fill critical needs. For example, PAR-23-140 invites applications aimed at increasing understanding of cellular and molecular mechanisms that can be targeted to protect the blood-brain barrier, and thus brain blood vessels, during therapeutic interventions that target beta-amyloid.

Dr. Corriveau invited council members to attend the Anti-Beta-Amyloid Passive Immunotherapy for Alzheimer's Dementia and Amyloid Related Imaging Abnormalities (ARIA): What's Next? Workshop, scheduled on September 28–29, 2023, to participate in discussions on advancements in anti-beta-amyloid passive immunotherapy for AD and ARIA. In addition, Dr. Corriveau outlined NINDS ADRD funding paylines and highlighted FY 2024 NINDS ADRD NOFOs.

Discussion

NINDS and NIA oversee research portfolios related to AD/ADRD. NIA holds the more extensive portfolio. Dr. Linda McGavern spearheads NINDS's efforts, including the mixed etiology dementias (MEDs) portfolio. Given the significant overlap between AD and MED, NIA and NINDS collaborate closely.

A Council member pointed out the prevalence of MED. Recent autopsy results consistently show its presence, underscoring the importance of focusing on this area. Many MED diagnoses are categorized as AD, making the distinction between NIA and NINDS projects intricate.

Multiple Council members raised concerns about funding for AD/ADRD research. Historically, the appropriations for NINDS and AD/ADRD have been separate. A portion of NINDS funds does support AD/ADRD projects, but Congress's stipulation emphasizes that these funds should augment research rather than maintain ongoing programs.

Council members are also keenly interested in the distribution of funding between academic entities and joint ventures between academia and industry. An annual allocation of approximately $2.3 million is set aside for Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) related to AD/ADRD. In contrast, NIA earmarks $14.6 million annually for similar endeavors with small businesses.

Reflecting on the ADRD initiative's success in attracting new researchers, Dr. Corriveau highlighted the Advanced Research Projects Agency for Health (ARPA-H) as an alternative funding source. Although ARPA-H is under the NIH umbrella, the agency maintains some autonomy. Researchers should leverage ARPA-H because of its attractive funding, budget, and close connections with NIA and NINDS.

The Council recognized the practical challenges associated with certain therapies, notably anti-amyloid treatments. With these therapies becoming more mainstream, it is imperative to address potential impacts on patients, particularly concerning vascular contributions.

A Council member expressed concerns about how research projects are prioritized based on their direct relevance to AD/ADRD versus fundamental neuroscience research. Dr. Corriveau clarified that though relevance to ADRD is essential, the quality and scientific merit of a proposal are equally important. The strategic use of keywords in applications could also influence how a project is tagged as ADRD-related.

Several Council members reaffirmed the value of fundamental neuroscience (FN) research. Many Council members voiced the necessity for the NIH to effectively convey the significance of FN research to the broader community. Although these fundamental studies might not align directly with AD/ADRD-specific grants, they hold the potential for groundbreaking insights into ADRD. The challenge remains to innovate in basic research while ensuring its relevance to the broader objectives of ADRD understanding and treatment.

VII. Fundamental Neuroscience Working Group Update

Dr. Lyn Jakeman, Director of the Division of Neuroscience in Extramural Programs, NINDS
Dr. Yishi Jin, Professor of Neurobiology, University of California San Diego
Dr. Tim Ryan, Professor of Biochemistry, Weill Cornell Medical College

Dr. Jakeman provided an update on the Council Fundamental Neuroscience Working Group (FNWG) that was formed to provide scientific recommendations to the NANDSC on how best to advance FN research. Led by FNWG Co-Chairs Drs. Jin and Ryan, a diverse group of FN researchers (1) looked to the future of FN by identifying critical gaps, key unanswered questions, and new opportunities in FN research; (2) evaluated effectiveness and potential of current NINDS programs to support the breadth of FN research; and (3) proposed and prioritized concepts and strategies with the potential to enhance the overall impact of NINDS FN research over the next five to 10 years.

Recommendations

The FNWG formed seven subgroups: development; genomic organization and regulation; inter-tissue interaction; metabolism; lipid stasis; atomic organization of machinery; and subcellular organization of machinery. Each subgroup considered the following key questions for each topic area: (1) What are the critical knowledge gaps? (2) How can we foster FN mechanistic investigation? (3) What are the technology choke points? and (4) What are the perceived funding difficulties?

The FNWG reported six recommendations:

1. Prioritize research into macromolecular cartography, including the organization of key protein machineries on the 1-1000 nm scale.
2. Enable quantitative approaches to characterize protein and molecule turnover timescales and location *in vivo* to advance understanding of molecular interactions their contribution to cellular stability and plasticity.

3. Support quantitative approaches for capturing and imaging cell movement and cell-cell interaction during development of any nervous system.
4. Ensure adequate resourcing of tool development for *in vivo* measurement of cellular activity.
5. Promote interdisciplinary team science and collaborations with technical expertise across diverse disciplines.
6. Support mentoring of the next generation of FN researchers.

Drs. Jin and Ryan underscored the significance of descriptive analyses as a critical element of biology and emphasized that, together with the technical advances in the past decade, these endeavors will help spur progress to propel neuroscience toward fundamental mechanistic understanding of the cellular and molecular machineries that make up the nervous system.

Discussion

A Council member expressed admiration for the FNWG's thoughtful presentation but raised concerns about the top-down approach, which may not align perfectly with the nature of basic neuroscience that organically emerges. The unpredictability of breakthroughs and discoveries in neuroscience and how they contribute to the mission of organizations like NIH was highlighted. The main contention was that fundamental neuroscience might not necessarily need a leading director or captain; rather, it requires more widespread support, particularly in areas not strictly related to translation.

The BRAIN Initiative revolutionized the approach to systems neuroscience, including the rapid expansion of neuroscience circuitry that focused primarily on the molecular neuroscience. A Council member asked which FN research areas need the most advancement. Some Council members favored hypothesis-seeking research, stating that the field should not always be about testing pre-existing hypotheses. There were concerns about the current outlook of grant evaluations, particularly the often-negative view of descriptive research. However, Drs. Jin and Ryan noted how descriptive science sometimes precedes and aids hypothesis-driven investigations.

Council members discussed tool development in neuroscience, for which the BRAIN Initiative has been lauded. A critical question arose about the allocation of funds: Should most funds be directed toward discovery research or tool development?

Over the past 25 years, there has been a precipitous decrease in the fraction of the NINDS budget spent on fundamental basic research. More recently, funding levels have stabilized. This decline raised concerns however, especially when viewed in the context of the rising number of larger-profile initiatives. Dr. Ryan emphasized the need for support for core infrastructure and technical expertise.

Council members strongly advocated for academic freedom in research pursuits; such autonomy is fundamental for scientific advancement. Although there is undeniable value in funding clinical trials and translational research, Drs. Jin and Ryan underscored that basic research steered by the interests of scientists is the driving force behind many major scientific breakthroughs.

Council members concurred that the objective of basic neuroscience research should not solely be on tool development but should also encompass broader aspects of FN. FNWG's efforts were commended, though there were suggestions to reconsider the name "Fundamental Neuroscience" for broader inclusivity.

The Council voted unanimously to approve the FNWG's report recommendations.

X. Initiatives for Concept Clearance

One concept was presented for discussion.

Concept 1: Research Grant for Junior Faculty Clinician-Scientists

Dr. Stephen Korn, Director, NINDS Office of Training and Workforce Development

Dr. Korn proposed creating a research grant mechanism designed to help junior faculty develop a research project that will lead to an independent R01 or equivalently funded research program (i.e., similar to a K award both in quality and expectations). Applicants must (1) be in a position that will allow 75% effort for research for the duration of the award; (2) collaborate with an established investigator (either as co-PI or with strong collaborative arrangement); (3) not be eligible for a K award at time of application; and (4) have no history of non-fellowship NIH funding as PI.

Discussion

Council members emphasized challenges faced by clinician scientists due to a 75% effort requirement, which can be financially straining, especially when compensating active clinicians only with a K-level support. Established clinicians like neurosurgeons usually commit 50% of their time, and others, like vascular interventionists, must commit 75%. This disparity often dissuades many from research pursuits due to pay differences. Although there is strong support for expanded research opportunities, other Council members underscored the need for specific mechanisms to support underrepresented individuals in medicine.

Council voted to approve the proposed concept.

Additional Concepts

2. Reissue NIH StrokeNet Clinical Trials and Biomarker Studies for Stroke Treatment, Recovery, and Prevention (UG3/UH3 Clinical Trial Optional) *Lead: Scott Janis*
3. Reissue: NINDS Human Genetics Resource Center Contract Re-Competition *Lead: Ran Zhang*
4. Reissue: Support for Research Excellence (SuRE) Program *Lead: Lauren Ullrich*
5. Reissue: Program to support Residents and Fellows (UE5 Clinical Trial Not Allowed) *Lead: Michael Tennekoon*
6. Reissue: NINDS Research Education Opportunities (R25 Clinical Trial Not Allowed) *Lead: Tish Weigand*
7. Research Grant for Junior Faculty Clinician-Scientists *Lead: Tish Weigand*
8. Reissue: Translational Neural Devices (R61/R33 - Clinical Trial Optional) *Lead: Nick Langhals*

9. Reissue: BRAIN Initiative: Next-Generation Invasive Devices for Recording and Modulation in the Human Central Nervous System (UH2/UH3 Clinical Trial Optional) *Lead: Megan Frankowski*
10. Reissue: BRAIN Initiative: Clinical Studies to Advance Next-Generation Invasive Devices for Recording and Modulation in the Human Central Nervous System (UH3 Clinical Trial Optional) *Lead: Megan Frankowski*
11. Reissue: Analytical Validation of Biomarkers for Neurological and Neuromuscular Disorders (U01 and U44) *Lead: Carol Taylor-Burds*
12. Reissue: Clinical Validation of Biomarkers for Neurological and Neuromuscular Disorders (U01 and U44) *Lead: Carol Taylor-Burds*
13. Reissue: CCRP Initiative: NIH Countermeasures Against Chemical Threats (CounterACT) Basic Research on Chemical Threats that Affect the Nervous System (R01 Clinical Trial Not Allowed)
14. BRAIN Initiative: Preclinical Proof of Concept for Novel Recording and Modulation Technologies in the Human CNS (R18) *Lead: Brooks Gross*
15. Safety and Efficacy of Amyloid-Beta Directed Antibody Therapy in Mild Cognitive Impairment and Dementia with Evidence of Both Amyloid-Beta and Lewy Body Dementias *Lead: Rebecca Hommer*

The Council voted to approve proposed concepts 2–15.

IX. Adjournment

The meeting was adjourned at 3:23 p.m. on Wednesday, September 6, 2023.

XI. Review of Conflict of Interest, Confidentiality, and Council Consideration of Pending Applications

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 1009(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. §§ 1001-1014).

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.

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 356 research career development and institutional training grant applications with primary assignment to NINDS, and 235 of them (66 percent) were scored in the amount of $30.9 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 $15.4 million (114 grants).

Research Project and Center Awards – The Council reviewed a total of 1,348 research project and center applications with primary assignment to NINDS, and 770 of them (57 percent) were scored/percentiled in the amount of $313.2 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 $84.9 million (221 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: Olga Boudker, Ph.D., (Weill Cornell Medical College), Kevin Brennan, M.D. (University of Utah School of Medicine) and Gordon MG Shephard, M.D, Ph.D. (Northwestern University).

Small Business Innovation Research and Small Business Technology Transfer Award Programs – The Council reviewed a total of 167 Small Business Innovation Research (SBIR) and Small Technology Transfer Award (STTR) grant applications with primary assignment to NINDS, and 104 of them (62 percent) were scored in the amount of $55.9 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 $6.1 million (13 grants).

Board of Scientific Counselors Report

Dr. Jeffrey Diamond, Scientific Director, NINDS Intramural Research Program

XII. Adjournment

The meeting was adjourned at 5:58 p.m. on Wednesday, September 6, 2023.

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

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

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.

National Advisory Neurological Disorders and Stroke (NANDS) Council
Fall 2023 Meeting
September 6, 2023
Attachment 1

Walter J. Koroshetz, M.D. (Chairperson)
Director, National Institute of Neurological Disorders and Stroke
National Institutes of Health
Bethesda, MD 20892
(Ex Officio member)

Allan I. Basbaum, Ph.D.* (2023)
Professor and Chair
Department of Anatomy
University of California, San Francisco
School of Medicine
San Francisco, CA 94158

Amy E. Brin, MSN, MA, PCNS-BC(2025)
Executive Director/CEO
Child Neurology Foundation
Lexington, KY 40508

Robert H. Brown, Jr., M.D., D.Phil. (2025)
Director Program in Neurotherapeutics
University of Massachusetts Chan Medical School
Worcester, MA 01655

Claudia F. Lucchinetti, M.D.* (2023)
Eugene and Marcia Applebaum Professor of Neuroscience
Chair, Department of Neurology
Director, Center for Clinical and Translational Science
Dean, Clinical and Translational Research
Mayo Clinic Alix School of Medicine
Rochester, MN 55905

John H.R. Maunsell, Ph.D. (2025)
Albert D. Lasker Professor
Department of Neurobiology
University of Chicago
Chicago, IL 60637

Kenneth I. Maynard, Ph.D.* (2023)
Director, Global Program Team Effectiveness
R&D Center of Operational Performance
Takeda Development Center Americas, Inc.
Cambridge, MA 02139

Louise D. McCullough, M.D., Ph.D. (2025)
Professor and Chair
Department of Neurology
McGovern Medical School
University of Texas Health Science Center at Houston
Houston, TX 77030

Gina R. Poe, Ph.D. (2024)
Professor
Department of Integrative Biology and Physiology
University of California, Los Angeles
Los Angeles, CA 90095

Ekemini Riley, Ph.D. (2024)
Founder and CEO
Coalition for Aligning Science, LLC
Managing Director
Aligning Science Across Parkinson's Disease
Chevy Chase, MD 20815

Timothy A. Ryan, Ph.D. (2024)
Professor
Department of Biochemistry

Weill Cornell Medical College
New York, NY 10021

Sameer A. Sheth, M.D., Ph.D. (2024)
Associate Professor and Vice Chair of Clinical Research
Department of Neurosurgery
Baylor College of Medicine
Houston, TX 77030

Christin L. Veasley* (2023)
Co-Founder and Director
Chronic Pain Research Alliance
North Kingstown, RI 02852

Terms end July 31 of the designated year.
**Serving on an administrative extension to participate in the Fall 2023 Council Meeting*

Ex Officio Members

Xavier Becerra
Secretary
Department of Health and Human Services
Washington, DC 20201

Christopher T. Bever, Jr., M.D.
Director, Biomedical and Laboratory Research
Office of Research and Development
Department of Veterans Affairs
Washington, DC 20003

David L. Brody, M.D., Ph.D.
Professor of Neurology
Uniformed Services University of the Health Science
Director, Center for Neuroscience and Regenerative Medicine
Director, USU/NIH Traumatic Brain Injury Research Center
Bethesda, MD 20892

Lawrence A. Tabak, D.D.S., Ph.D.
Acting Director, NIH
National Institutes of Health
Bethesda, MD 20892

Executive Secretary

Robert Finkelstein, Ph.D.
Director, Division of Extramural Activities
National Institute of Neurological Disorders and Stroke
National Institutes of Health
Bethesda, MD 20892

Subject Matter Experts

Yishi Jin, Ph.D.
Distinguished Professor
Co-Director, The Kavli Institute of Brain and Mind
Department of Neurobiology
School of Biological Sciences
University of California, San Diego
La Jolla, CA 92093

Jane Larkindale, D.Phil.
Vice President
PepGen Inc.
Cambridge, MA 02142

Jin-Moo Lee, M.D., Ph.D., FAHA
Andrew B. & Gretchen P. Jones Professor
Professor, Department of Radiology
Professor, Department of Biomedical Engineering
Professor, Division of Biology and Biomedical Sciences
Washington University School of Medicine
St. Louis, MO 63110

Henry L. Paulson, M.D., Ph.D.
Lucile Groff Professor of Neurology
Department of Neurology
University of Michigan
Ann Arbor, MI 48109

National Advisory Neurological Disorders and Stroke Council
Fall 2023 Meeting
September 6, 2023
Attachment 2

NINDS employees present for portions of the meeting included:

Amy Adams
Deanna Adkins
Mir Ahamed Hossain
Stephen Akomah
Tamara Allard
Ram Arudchandran
Herson Astacio
Eric Atkinson
Taryn Aubrecht
Hibah Awwad
Debra Babcock
Julia Bachman
Farah Bader
Tina Baker
Linda Bambrick
Elena Barnaeva
Jennifer Barnes
Janna Belser-Ehrlich
Mary Bennett
Karrah Benson
Kaitlyn Benson
Richard Benson
William Benzing
Clayton Bingham
Victoria Bitzer-Wales
Melissa Bojos
Carolyn Bondar
Naomi Booker
Francesca Bosetti
Chris Boshoff
Giulia Bova
Vicki Brings
Steve Britt
Jeremy Brown
Ryan Calabrese
Roger Campbell
Emily Caporello
Scarlette Cella
Stacey Chambers
Denise Chatman
Thomas Cheever
Andrew Chen
Bo-Shiun Chen
Daofen Chen
David Cheng
David Cheng Melendez
Sophie Cho
Molly Cluster
Mary Coats
Ninds Conf
Christopher Conrad
Rebekah Corlew
Jeff Cozart
Devon Crawford
Cheryl Cudzilo
Adi Cymerblit-Sabba
Charles Cywin
William Daley
Sara Dauber
Karen David
Dana Day
Michele Dean
Alexander Denker
Vedangi Desai
Neel Dhruv
Jeff Diamond
Damon Disabato
Sara Dodson
Anthony Domenichiello
Adele Doperalski
Argenia Doss
Kristin Dupre
Jaclyn Durkin
Debbie Eng
Judy Fabrikant
Christina Fang
Robin Felder
Cassandra Fields
Claudia Figueroa-Romero
Monica Flemming
Nhi Floyd
Megan Frankowski
Natalie Frazin
Patrick Frost Bellgowan
Pat Frost Bellgowan
Joachim Galil
Lina Garcia
Shannon Garnett
Hermon Gebrehiwet
Annette Gilchrist
Marie Gill
Ashley Givens
Jordan Gladman
Jim Gnadt
Maureen Gormley
Brooks Gross
Radd Guarin
Amelie Gubitz
Mai Habib
Joseph Hall
Maureen Hambrecht
Kristi Hardy

Adam Hartman
Brandon Hartsell
Ali Hassani
Brian Haugen
Janet He
Lanier Heyburn
Rebecca Hommer
Mariah Hoye
Nina Hsu
Eric Hudak
Xantippe Humphries
Grace Hwang
Smriti Iyengar
Lyn Jakeman
Scott Janis
Li Jia
Kari Johnson
Lataisia Jones
Kevin Jones
Michelle Jones-London
Cory Kelly
Olivia Kent
Noam Keren
Brenda Kibler
Jenny Kim
Laura Kimberly
Brian Klein
Yasmin Kloth
Jim Koenig
Carol Kong
Stephen Korn
Steve Korn
Svetlana Kotliarova
Jonathan Kreisler
Pascal Laeng
Christine Lam
Nick Langhals
Crystal Lantz
Timothy Lavaute
Crystal Lee
Janelle Letzen
Catherine Levy
Cara Long
Rosa Lopez
Quynh Ly
Timothy Lyden
William Lyons
Laura Mamounas
Gary Marlowe
Marguerite Matthews
Amber Mccartney
Linda Mcgavern
Barbara Mcmakin
Carolina Mendoza-Puccini
Mirela Milescu
Daniel Miller
Pantea Moghimi
Sandra Molina
Joseph Monaco
Jordan Moore
Jill Morris
John Ngai
Cristina Nigro
Glen Nuckolls
Michael Obodozie
John Ogawa
Joan Ohayon
Jiaqi Oreilly
Leslie Osborne
Michael Oshinsky
David Owens
Kathy Partlow
K. Paul Rezaizadeh
Mary Pelleymounter
Marlene Peters-Lawrence
Leah Pogorzala
Joanne Pomponio
Linda Porter
Pragya Prakash
Rebecca Price
Michele Pucak
Mei Qin
Elizabeth Quartey
Shamsi Raeissi
Shanta Rajaram
Srikanth Ranganathan
Yogendra Raol
Alva Recinos
Matthew Rice
Bob Riddle
Sarah Robinson Schwartz
Sabrina Rodriguez
Xing Rong
Rebecca Roof
Becky Roof
Martin Sabandal
Cheryse Sankar
Lumy Sawaki-Adams
Joel Saydoff
Iqbal Sayeed
Alisa Schaefer
Paul Scott
Gretchen Scott
Nilkantha Sen
Shalini Sharma
Kelly Sheppard
Frank Shewmaker
Arvind Shukla
Andrew Siddons
Beth-Anne Sieber
Adissa Silue
Maryann Sofranko
Shardell Spriggs
Bernard Srambical Wilfred
Rukmareddy Sripathi
Natalia Strunnikova
Abhi Subedi
Luis Sullivan
Tao Sun
Maripierre Surpris
Christine Swanson-Fischer
Elizabeth Sypek
Edmund Talley
Amir Tamiz
James Taylor
Anna Taylor
Carol Taylor-Burds
Michael Tennekoon
Shruthi Thomas
Christine Torborg
Delany Torres Salazar
Natalie Trzcinski
Amy Tsou
Eric Tucker
William Tyler
Lauren Ullrich
George Umanah
Nsini Umoh
Ursula Utz
Nasim Vahidi
Joanna Vivalda
Tam Vo
Cheryl Wall
Laura Wandner

Tish Weigand
Rachel Weinberg
Matthew White
Elyse White
Vicky Whittemore
Shellie Wilburn
Gina Williams
Sarah Woller
Ling Wong
Alynda Wood
Tracy Wood
Clinton Wright
Patrick Wright
Guangying Wu
Monique Young
Ran Zhang
Wei-Qin Zhao
Arlene Zheng

National Advisory Neurological Disorders and Stroke Council
Fall 2023 Meeting
September 6, 2023
Attachment 3

Other federal employees present for portions of the meeting included:

Roger Bannister, CSR
Alexei D. Kondratyev, CSR
Ashley M. Kopec, CSR
Alena Savonenko, CSR
Elyse Schauwecker, CSR
Mary Schueler, CSR
Laurent Taupenot, CSR
Anne-Sophie Wattiez, CSR
Mariam Zaka, CSR