DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH
NATIONAL CENTER FOR COMPLEMENTARY AND INTEGRATIVE HEALTH
NATIONAL ADVISORY COUNCIL FOR
COMPLEMENTARY AND INTEGRATIVE HEALTH
Minutes of the Eighty-Seventh Meeting
May 17, 2024

NACCIH Members Present

Dr. Helene Benveniste, New Haven, CT
Dr. Per Gunnar Brolinson, Blacksburg, VA
Dr. Nadja Cech, Greensboro, NC
Dr. Daniel Dickerson, Los Angeles, CA
Dr. Girardin Jean-Louis, Miami, FL
Dr. Benjamin Kligler, Washington, DC*
Dr. James Russell Linderman, Bethesda, MD*
Dr. Judith Schlaeger, Chicago, IL**
Dr. Erica Sibinga, Baltimore, MD
Dr. Kathleen Sluka, Iowa City, IA**
Dr. Amala Soumyanath, Portland, OR
Dr. Tor Wager, Hanover, NH**

NACCIH Members Present Virtually

Dr. Robert Coghill, Cincinnati, OH
Dr. Margaret Haney, New York, NY
Dr. Helen Lavretsky, Los Angeles, CA
Dr. Corinne Maurice, Montreal, QC**
Dr. Mark Young, Bozeman, MT**

NACCIH Members Not Present

Prof. Rhonda Magee, San Francisco, CA
Dr. Karen Sherman, Seattle, WA

*Ex Officio Member
**Ad-hoc Member

I. Closed Session

The first portion of the eighty-seventh meeting of the National Advisory Council for Complementary and Integrative Health (NACCIH) 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.C., and Section 1009(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. §§ 1001-1014). A total of

181 applications were assigned to the National Center for Complementary and Integrative Health (NCCIH). Applications that were noncompetitive, not discussed, or were not recommended for further consideration by the scientific review groups were not considered by Council. Council agreed with staff recommendations on 98 scored applications, which requested $57,991,730 in total costs.

II. Call to Order of Open Session; NCCIH Director's Welcome and NCCIH Report

Dr. Martina Schmidt, director of the NCCIH Division of Extramural Activities (DEA), convened the open session at 11:10 a.m. ET. This meeting was held in person and broadcast live for all attendees, including Council members, NCCIH staff, and the public, and was recorded. Dr. Schmidt introduced Dr. Helene M. Langevin, director of NCCIH, who welcomed everyone attending in person and via broadcast. The January 19, 2024, meeting minutes were approved unanimously. Dr. Langevin reminded Council members that a new format for the Director's Report had been introduced at the last Council meeting to focus on NCCIH highlights. Additional information on these topics can be found in the Electronic Council Book (ECB).

Dr. Langevin announced the recent passing of Eve Reider, Ph.D., a former NCCIH program director, who also worked at the National Institute on Drug Abuse (NIDA) and the National Institute of Mental Health (NIMH). Dr. Reider was a valued member of the NCCIH staff and won an NCCIH Director's Merit Award for her leadership in establishing the trans-agency NIH, U.S. Department of Defense (DOD), and U.S. Department of Veterans Affairs (VA) Pain Management Collaboratory. Emmeline Edwards, Ph.D., director of NCCIH's Division of Extramural Research (DER), will represent NCCIH at the Society for Prevention Research 32nd Annual Meeting Roundtable, Remembering and Celebrating the Legacy of Eve E. Reider, Ph.D.

Dr. Langevin announced Kathleen M. Neuzil, M.D., as the new director of the NIH Fogarty International Center. Dr. Neuzil is the first woman to hold this position since the founding of the Fogarty Center in 1968. She will address cross-cutting issues such as maternal immunization, optimizing vaccine use, and ensuring sustainable vaccine uptake in low-resource settings. She also has a strong commitment to mentoring the next generation of scientists and leaders in the field.

Joshua Gordon, M.D., Ph.D., director of NIMH, is returning to Columbia University as chair of the Department of Psychiatry. Shelli Aveneoli, Ph.D., will be the acting NIMH director.

Changes to grant applications and their peer review are underway, and NIH released a guide notice NOT-OD-24-084 in April that provides information and resources about these changes. NIH will hold webinars about the changes on June 5 and September 19, 2024.

A new initiative, the NIH Common Fund Program to Support Clinical Research in Primary Care Settings, recently launched. This program, which is spearheaded by NIH Director Monica M. Bertagnolli, M.D., and led by the NIH Office of the Director (OD), will support the development of networks to conduct research in primary care settings and clinics that focus on rural health and in Federally Qualified Health Centers. The program seeks to address the challenge of health

inequity in care and in research in underserved areas, where many people do not have access to university research centers and opportunities to participate in clinical research studies. Dr. Langevin noted this is especially relevant because of NCCIH's work in the NIH Pragmatic Trials Collaboratory for the past 10 years. The program will launch quickly with an established budget of $5 million in fiscal year (FY) 2024 and $25 million in FY 2025 and will anticipate ramping up to between $50 and $100 million per year after assessing feasibility and budget requirements.

Dr. Langevin brought to everyone's attention the NIH Cloud Lab is a no-cost 90-day program for researchers to try commercial cloud services to deposit data in an NIH-approved environment. This opportunity is for current researchers as well as anyone applying for NIH funding, as well as students.

Dr. Langevin announced the launch of the NCCIH Coalition for Whole Person Health. The coalition will lead advocacy efforts at the Federal level to promote and educate all stakeholders on the importance of NCCIH research and further research on integrative, interprofessional, patient-centered, and whole person care. U.S.-based 501(c)3 or 501(c)6 organizations interested in supporting complementary and integrative health research are encouraged to join. Contact Mary Beth Kester, director, Office of Policy, Planning, and Evaluation (OPPE), for more information.

Staff Updates

Dr. Langevin congratulated Miroslav "Misha" Bačkonja, M.D., who has been appointed the new NCCIH clinical director after serving two years as the acting clinical director. Since joining NCCIH, Dr. Bačkonja has launched several educational initiatives including a lecture series and has promoted coordination across the intramural research program.

Mei Qin, M.D., Ph.D., has joined NCCIH as a scientific review officer in the Office of Scientific Review (OSR), where she will be setting up special emphasis panels for applications received by NCCIH. Dr. Qin was previously at the NIH Center for Scientific Review.

Dr. Langevin shared the names of new staff and those who have moved on to new opportunities since the January Council meeting and expressed appreciation for all.

Dr. Langevin acknowledged that there was a long wait for the final FY 2024 NCCIH budget, but it is almost identical to the previous year's budget and can be acted upon now. Overall, Dr. Langevin said she is pleased with how well NCCIH has been doing, given the budget climate. She explained that since 2020, NCCIH has augmented the budget efficiently because of additional funding received from the Helping to End Addiction Long-term® Initiative, or NIH HEAL Initiative®, and from other NIH Institutes and Centers (ICs) through collaborative efforts.

NCCIH Research Spotlights

Dr. Langevin shared two recent papers published by the NIH Pragmatic Trials Collaboratory that highlight the importance of the Collaboratory's work in creating learning health care systems: Factors Affecting Post-trial Sustainment or De-implementation of Study Interventions: A Narrative Review and Post-trial Responsibilities in Pragmatic Clinical Trials: Fulfilling the

Promise of Research to Drive Real-World Change. Both papers discuss the effects of clinical trials on the post-trial experience in sustaining and implementing study interventions, and Dr. Langevin said they will be very important in guiding the new trans-NIH primary care network initiative that was mentioned earlier.

Dr. Langevin highlighted other publications of interest:

- A National Institutes of Health Approach for Advancing Research to Improve Youth Mental Health and Reduce Disparities, co-authored by NCCIH's Beda Jean-Francois, Ph.D., program director in the Clinical Research Branch. This paper appeared in a special issue of the *Journal of the American Academy of Child and Adolescent Psychiatry* on addressing bias, bigotry, racism, and mental health disparities through research, practice, and policy.
- Special Issue: Mechanisms of Manual Therapy, Volume 32, 2024 published by the U24 Research Network Group on Force-Based Manipulation, which NCCIH funded. NCCIH has funded several studies in the U24 networks, including music and health and mechanisms on manual therapies. Dr. Langevin praised the networks for bringing a community of researchers together to set the groundwork for a new field by doing meta-analysis, defining terms, and performing other work that is necessary to lift up a field that did not previously exist.

NIH/NCCIH Program News

Dr. Langevin reminded the Council of the new theme-based framework being used to better integrate and communicate NCCIH program news. She pointed out that the circles represent the different categories of NCCIH programs and activities and that many of these activities overlap. For example, she noted that activities in the Pain and Pain Management area might also embody activities falling under Mind and Body Connections, while Whole Person Research might involve Nutrition and Natural Products and Positive Health Processes. Dr. Langevin said that for these reasons, the primary category will appear in the upper right corner of each slide and the other categories will appear below.

Category 1. Pain and Pain Management

Dr. Langevin provided an update on activities related to pain and pain management, including the following:

- Inna Belfer, Ph.D., program director and deputy director of the Basic and Mechanistic Research in Complementary and Integrative Health Branch, will provide an overview of the Center's activities surrounding sickle cell disease research at the 18th Annual Sickle Cell Disease Research and Educational Symposium, on June 8, 2024, in Fort Lauderdale, Florida. The plenary session is titled Unmet Need: Mechanistic and Translational Studies of Sickle Cell Disease Pain as a Whole Person Health Challenge.
- NCCIH is planning on making an award to support a Research Network to Promote Multidisciplinary Mechanistic and Translational Studies of Sickle Cell Disease Pain, (U24, Clinical Trial Optional): RFA-AT-24-001. This network will develop compelling

research frameworks and model systems that will support interdisciplinary collaborations, initiate pilot projects to test novel mechanistic hypotheses in high-priority research areas of sickle cell disease and develop novel technologies and methodologies to study pain in the organ(s) typically impacted.

- Representatives from NCCIH will attend the International Association for the Study of Pain (IASP) 2024 World Congress on Pain in Amsterdam, Netherlands in August.
    - On August 6, Dr. Langevin will present a plenary session, A Whole Person Approach to Pain Research. Dr. Langevin said she will emphasize two gaps in pain research that NCCIH is working on closely, especially through the NIH HEAL Initiative. The first is the connection of the brain and the body in understanding pain and the second is endogenous pain resolution and the mechanisms that help us resolve pain.
    - On August 8, Dr. Langevin will join Mary Barbe, Ph.D., Carla Stecco, M.D., and Heather Tick, M.D. to present Promoting Musculoskeletal Health Beyond Symptom Management. Dr. Langevin will talk about whole joint health and how a better understanding of how each "joint unit" relates and interacts will yield new insights into treating pain.
    - Also on August 8, Dr. Belfer will present an update on glymphatic flow in chronic pain and discuss therapeutic opportunities focused on integrative health in the session, The Glymphatic System at the Crossroad of Integrative Health Approaches in Chronic Pain. Dr. Belfer will also present the current status of research on minor cannabinoids and terpenes and where that research may be headed during Symposium: A Translational, Global, and Historical Perspective on Terpenes and Minor Cannabinoids for Pain.
- NCCIH has signed onto a notice of funding opportunity (NOFO), Safety and Early Efficacy Studies of Psychedelic-Assisted Therapy for Chronic Pain in Older Adults (UG3/UH3 Clinical Trial Required), which was initiated by the National Institute on Aging (NIA).

Category 2. Mind and Body Connection

Dr. Langevin provided an update on activities related to mind and body connection, including the following:

- The 2024 Annual Force-Based Manipulation Investigator Meeting will be held on June 28. The keynote speaker, Dr. Valeria Vásquez, associate professor at the McGovern Medical School at University of Texas Health Houston, will present "Fine-Tuning Mechanosensitive Ion Channels: From Basic Science to Translational Research." A portion of the meeting, including the keynote presentation, is open to the public, and registration is now open.

Category 3. Positive Health Processes

Dr. Langevin explained that emotional well-being and health restoration are examples of positive health processes. She provided an update on the following activities:

- In March, NCCIH along with NIA and the *Eunice Kennedy Shriver* National Institute on Child Health and Human Development (NICHD) sponsored the 2024 Annual Emotional Well-Being Investigator Meeting. Eric Garland, Ph.D., professor at the University of Utah, presented the keynote, "Mindfulness-Oriented Recovery Enhancement Builds Emotional Well-Being by Restructuring Reward, Meaning, and Self." A recording of the open session of the meeting, including the keynote presentation, is available on the NCCIH website.
- Dr. Langevin noted that NCCIH signed onto the Office of Disease Prevention's NOFO on multi-sectoral preventive interventions that address social determinants of health in populations that experience health disparities. Jennifer Baumgartner, Ph.D., is the NCCIH contact.

Category 4. Nutrition and Natural Products

Dr. Langevin provided an update on activities related to nutrition and natural products, including the following:

- The 2024 NCCIH Cannabinoid Research Principal Investigators Meeting: Exploring the Mechanisms Underlying Analgesic Properties of Minor Cannabinoids and Terpenes will be held on June 4. Daniele Piomelli, Ph.D., University of California, Irvine will present the keynote, "Overview of Safety and Efficacy of Cannabis-Based Products in Animal Models and in Clinical Studies." Portions of the meeting, including the keynote presentation, will be open to the public.
- On June 10 and 11, NCCIH and the National Institute of Environmental Health Sciences (NIEHS) will sponsor the symposium, Complementary and Integrative Interventions To Prevent and Mitigate the Effects of Endocrine-Disrupting Chemicals. Dr. Langevin explained that there are many unknowns about the health effects of the countless chemicals that are present in daily life, and developing mitigating strategies to prevent or reduce negative impacts is important. NCCIH is especially interested in the role stress plays in health and how it can compound the effects of environmental stressors.

The NIH Consortium for Advancing Research on Botanical and Other Natural Products (CARBON) Program has issued three important NOFOs:

- Limited Competition: Research Resource for Natural Product Nuclear Magnetic Resonance Data (R24 Clinical Trial Not Allowed): RFA-AT-24-007 is open to the existing center to ensure continuity in this important resource. The NCCIH contact is Patrick Still, Ph.D.
- Leveraging Data at Scale to Understand Natural Product Impacts on Whole Person Health (R01 Clinical Trial Not Allowed): RFA-AT-24-008 is designed to support development, adaptation, and/or applications of computational tools to aggregate and analyze orthogonal chemical and/or biological data sets related to natural products with the aim of generating novel testable hypotheses regarding their biological activity and role in the context of whole person health research. Craig Hopp, Ph.D. is the NCCIH contact.

- Botanical Dietary Supplements Translational Research Teams (RM1 Clinical Trial Required): RFA-OD-24-014. This NOFO is intended to move toward developing science that will allow future large-scale clinical trials on natural products. This approach reflects the evolution of the NCCIH strategy from understanding natural products from a fundamental perspective toward implementing knowledge into translational and clinical research. NCCIH is working with the Office of Dietary Supplements (ODS), and Craig Hopp, Ph.D. is the NCCIH contact.

Category 5. Whole Person Research

Dr. Langevin provided an update on activities related to whole person research, including the following presentations at 2024 International Congress on Integrative Medicine and Health (ICIMH) in April:

- Dr. Langevin joined Alex Krist, M.D., M.P.H., of Virginia Commonwealth University for the plenary session, "Using the National Academies of Science, Engineering, and Medicine Report on Whole Health Care to Inform Research and Policy." NCCIH is interested in this report, which builds on expertise from the VA Whole Health program and explores how the implications of what we are learning on whole person health influences how health care is delivered in our country. Dr. Langevin said NCCIH is interested in how to measure whole health, understand patient-reported measures and objective measurements of health, and best combine the two to ensure the best-quality research is delivered so that these types of programs may move forward.
- Dr. Langevin and Emrin Horgusluoglu, Ph.D., program director in NCCIH's Basic and Mechanistic Research in Complementary and Integrative Health Branch, participated in the session, "New Strategies and Methodologies for Whole Person Research" with Patricia Herman, N.D., Ph.D., Jeffery Dusek, Ph.D., and Aaron Lee, M.D., M.S.C.I. Dr. Langevin and Dr. Herman presented the "Mrs. M" comparison of conventional care to whole person care in a fictional patient and examined the financial impact over 40 years of "Mrs. M's" life. A paper has been submitted and is currently under review. Additionally, Dr. Dusek presented data on a patient practice-based network that is collecting outcome measures from complementary and integrative health centers across the country. Dr. Langevin explained that NIH is placing an emphasis on building networks of primary care, and this exemplifies the next possible extension of this effort by incorporating this research into networks of complementary and integrative health care. Dr. Lee presented on the Bridge to Artificial Intelligence (Bridge2AI) project, which is an NIH Common Fund project that is studying patients with early diabetes diagnosis and capturing multiple measurements to cover their whole physiology and the changes to occur over time toward or away from health. The session covered many aspects of whole person health and illustrated how research in this area can be accomplished.

NCCIH was also involved several other presentations at ICIMH:

- Session: How Advancing the Science of Emotional Well-Being Can Improve Whole Person Health

- Session: NIH Open Access Repositories: How Can They Be Leveraged To Advance Whole Person Health Research?
- Post-Conference Workshop: Navigating Early Career Stage Transitions and Finding Funding for Career Development in Complementary and Integrative Health Research
- Post-Conference Workshop: Orientation to Dissemination and Implementation Science for Complementary and Integrative Health and Whole Person Health

Category 6. Workforce Development and Special Populations

Dr. Langevin provided an update on activities related to workforce development and special populations, including the following:

- The Notice for Intent to Publish (NOITP) a Funding Opportunity Announcement for REsearch Across Complementary and Integrative Health Institutions (REACH) Virtual Resource Centers (U24 Clinical Trial Not Allowed) NOT-AT-24-037 was granted last year to the RAND Corporation to create support for complementary and integrative health academic institutions when submitting grant applications. Lanay Mudd, Ph.D., is the program director.
- The Common Fund High Risk, High Reward Funding Opportunities support research that is "outside the box" and explores new paradigms and new approaches in how to think about health and therapies. The NIH Director's New Innovator Award Program (DP2 Clinical Trial Optional): RFA-RM-24-003, the NIH Director's Early Independence Awards (DP5 Clinical Trial Optional): RFA-RM-24-005, the NIH Director's Transformative Research Awards (R01 Clinical Trial Optional): RFA-RM-24-004, and the NIH Director's Pioneer Award Program (DP1 Clinical Trial Optional): RFA-RM-24-002 are opportunities to submit grant applications that are cutting edge.
- The NIH Pragmatic Trials Collaboratory Annual Workshop, "Going from Zero to 100: Generating Evidence Through Pragmatic Research to Address the Pressing Health Care Issues" will be held on July 15 and 16. This workshop will focus on how to address urgent health care issues through pragmatic research and encourage the learning health care system approach to improving care.

Category 7. Methods and Data Science

Dr. Langevin provided an update on activities related to methods and data science, including the following:

- Notice of Special Interest (NOSI): Supporting the Exploration of Cloud in NIH-supported Research: NOT-OD-24-078 is for larger cloud-based projects that may need additional services. This NOFO was published by the NIH Office of Data Science Strategy.

Dr. Langevin invited questions and comments from Council.

Discussion: Dr. Kligler asked for any updates on the trans-NIH whole person outcomes. Dr. Langevin said there was a concept clearance on issuing a funding opportunity for developing a knowledge base on whole person research. She stated that there will be new developments soon.

Dr. Langevin shared that the working group on whole person research has been extremely successful. Currently, 17 NIH ICs are involved. She praised Dr. Horgusluoglu and Dr. Elizabeth Ginexi for their outstanding work developing a funding opportunity with 17 different components of NIH on a topic as complex as whole person health, saying, "They have moved mountains." Dr. Kligler thanked NCCIH for taking this on as it reflects the movement in NIH toward a more expansive approach, beyond specific diseases.

Dr. Benveniste asked Dr. Langevin to share additional details on the budget, particularly regarding the NIH HEAL Initiative. Dr. Langevin said that certain large programs have been hit more than individual ICs. She explained that the U.S. Congress controls those decisions and decided to cut several large programs including the NIH HEAL Initiative, the All of Us Research Program, and the Brain Research Through Advancing Innovative Neurotechnologies® (BRAIN) Initiative, while the ICs were mostly spared. Dr. Langevin said there is hope that funding for the programs will be restored and acknowledged that we are fortunate to have these initiatives. She said the NIH HEAL Initiative has accelerated research on pain and opioid use disorder, and that success is phenomenal in creating a community of investigators and research that occurs outside of that initiative. Dr. Langevin noted that she would address this topic in greater detail in her next presentation.

Dr. Cech said she is excited to see the NOFOs in the Nutrition and Natural Products area and acknowledged it has been a tremendous effort to envision the future especially with the CARBON program at NCCIH. She said she is also pleased to see the R01 mechanism coming into place, which should provide a good opportunity for some investigators to obtain grants.

Dr. Langevin appreciated Dr. Cech's comments and said that NCCIH is very excited about these developments. She noted that Stefan Pasiakos, Ph.D., the director of ODS, is extremely interested in collaborating with NCCIH on clinical translation. Dr. Cech said that taking a step back from some of the initial trials and thinking about how to move in that direction is great progress. Dr. Langevin acknowledged that this topic is in a new place, and there are greater capabilities in terms of techniques, data management, and resources as well as the collaboration with other centers that have been funded through CARBON. Dr. Langevin pointed out that the Office of Nutrition Research, ODS, the National Institute on Nursing Research, and NCCIH are collaborating on a nutrition continuum that looks at everything from environmental aspects and food insecurity to social aspects of food and nutrition, components of food, and dietary supplements, taking into account all domains of whole person health—biological, behavioral, social, and environmental. Dr. Langevin said this collaboration across NIH is a good example of how the whole person health concept is helping people work together.

III. Council Working Group on Spiritual Health

Dr. Langevin introduced Helene Benveniste, M.D., Ph.D., to provide an update from the Advisory Council Working Group on Spiritual Health. Dr. Benveniste thanked Dr. Langevin, said it is an honor to be part of and chair the working group, and thanked the working group members and Dr. Schmidt for their hard work. Dr. Benveniste said a working group on spirituality is a natural evolution of NCCIH strategic planning based on interactions with the

community. She noted the VA has already embraced spirituality as an important area in their patient care model. Dr. Benveniste also pointed to Dr. Langevin's director's message in 2023, "Including Spirituality Into a Fuller Picture of Research on Whole Person Health" and noted spirituality was a focus area at the recent ICIMH conference. She said the topic is top of mind for many organizations and people, and the time is right to approach it more carefully.

Dr. Benveniste highlighted NCCIH's charge to the working group:

- How do spiritual practices and spiritual health fit in the concept of whole person health?
    - Should "spiritual" be a separate whole person health domain?
- What research gaps need to be addressed with respect to:
    - Spiritual practices (therapeutic input or independent variable)?
    - Spiritual health (therapeutic output or dependent variable)?
- What research methods are needed to address the gaps?
- Under what research category would spiritual health best fit?
    - Mind and body connection?
    - Positive health processes?
    - Whole person health?
    - More than one?

To help remind attendees of the whole person health concept, Dr. Benveniste shared an image from the NCCIH website (Whole Person Health: What You Need to Know) that illustrates the continuum from health to disease. She explained that the working group is focusing on the individual and the different domains that are integrated (biological, behavioral, social, and environmental) in this continuum. The question to the working group is whether spirituality should be a separate domain. Dr. Benveniste showed a slide of the NCCIH Portfolio Groupings and a slide of the nutritional/psychological/physical Venn diagram of complementary and integrative health, both of which demonstrate that NCCIH has already thought about spiritual practices in connection with therapeutic input domains and mind and body practices. Dr. Benveniste mentioned yoga as an example of something that can be a spiritual experience or an exercise, depending on an individual's intent.

Dr. Benveniste said the group agreed that before addressing some of the questions in their "charge" language needs to be harmonized first. The original charge to the group was to consider "spiritual health," but she said it became clear that the terms "spiritual health" versus "spiritual well-being" needed to be addressed. Dr. Benveniste shared that the group identified positive and negative connotations for each term.

Spiritual Well-Being

- The World Health Organization and VA are using this term, and there is a consensus by many people that this term should be used.
- There are general concepts among Native Americans about health, and the word "wellness" is a common term.
- Well-being has different facets.

- Well-being is less controversial.

Spiritual Health

- "Health" may be less judgmental.
- Mind and body intersect with spiritual health (already incorporated in NCCIH strategic plan).
- Health may be better aligned with NCCIH's mission and goals.

Dr. Benveniste said after a lengthy discussion, the group decided to embrace both and chose "spiritual health and well-being." Another term that needed to be clearly defined for the group's deliberations was "spirituality". Dr. Benveniste said the group found many working definitions of spirituality. The group agreed upon using a definition that has been endorsed by many people working in whole body health and palliative care, was broad, and reflected many of the concepts that had been discussed.

Spirituality is defined as a "dynamic and intrinsic aspect of humanity through which persons seek ultimate meaning, purpose, and transcendence, and experience relationship to self, family, others, community, society, nature, and the significant or sacred. Spirituality is expressed through beliefs, values, traditions, and practices." Puchalski CM, Vitillo R, Hull SK, et al. Improving the spiritual dimension of whole person care: reaching national and international consensus. *Journal of Palliative Medicine.* 2014;17(6):642-656.

Dr. Benveniste shared some thoughts from the group when discussing the question, "Are spiritual health and well-being part of whole person health?"

- The spiritual aspect of life exists, but whether or not people believe in spirituality, which can also be considered spiritual inclination, affects the way they function and their health.
- "Mind and body" and "spirit" are different entities, implying that spiritual health should be thought of in a different category from our physical and mental boundaries.
- Spiritual health represents an incredible variety of domains; spiritual states can lead to well-being as well as distress.
- Spirituality is part of whole person health; this is emphasized with mental health services.
- Some practices NCCIH is studying in connection with whole person health have spiritual aspects.
- Including spirituality as an element in whole person health could be problematic but including it as a covariate that can influence whole person heath may be reasonable and may describe how people live their lives.

Moving forward, Dr. Benveniste said the group will work on aspects of the charge that have not yet been addressed. She acknowledged there is much more to do. Dr. Benveniste also said the group leaned into the idea that spirituality should be considered a covariate rather than a full domain, and that would be the recommendation for the time being. Based on what will be learned, spiritual health might eventually be defined as a separate domain of whole person health . Dr. Benveniste also said the working group recognizes both the positive and negative aspects of spirituality and those need to be considered carefully. The working group will continue

to work and address their charge and have further recommendations at one of the next Council meetings.

Dr. Langevin thanked Dr. Benveniste and the group for providing a thorough update and recognized the work that has gone into the discussions. Dr. Langevin said she appreciated the variety of perspectives within the group. Dr. Benveniste agreed and noted the opinions are very diverse and representative of the broad population, and said the group is taking the charges very seriously.

Discussion: Dr. Wager asked if there is a way to divide the different facets, such as personal meaning and transcendence that is intrapersonal versus engaging in social practices with people who physically care for each other. Dr. Benveniste said the group has not gotten to that point yet, but it would be part of the study metrics to study and define these elements. Dr. Benveniste invited any members from the working group to comment.

Dr. Dickerson said he's very excited about the conversations the group has had so far. The subject is very complex and has different meanings. He noted that Native Americans routinely include and recognize spiritual health—from traditional practices to religion—as part of the whole person. Elders often emphasize that all people are spiritual beings, and they recommend that spiritual practices should be incorporated into health.

Dr. Kligler thanked the group for the work they're taking on. He noted the VA has done extensive focus groups and human-centered design qualitative work to define a well-being framework through the Veterans Experience Office with groups of veterans. Dr. Kligler said they asked participants to rate what it means to have a sense of whole person well-being and found mental, spiritual, and physical health were ranked at the top. Dr. Kligler said it was very clear from veterans' voices that spiritual health is crucial and must be recognized. Dr. Benveniste acknowledged the documentation and platform created by the VA have been important reference materials for the working group.

Dr. Soumyanath thanked Dr. Benveniste for providing a good summary of the discussions as well as for chairing the group. She asked if anyone could provide a summary of the public comments that have been submitted to NCCIH. Dr. Schmidt explained all the comments are uploaded in the Electronic Council Book (ECB).

Dr. Jean-Louis noted the working definition of spirituality and asked if the group will be tasked with developing a new definition and a scale that measures spirituality. Dr. Benveniste said the group is not tasked with creating a new definition. As for scales and metrics, the group will delve into the literature on different existing scales. Dr. Jean-Louis said it would be nice to see if there is some evidence for recommending a particular scale, and he looks forward to the next report.

Dr. Langevin commented that from the point of view of research, "spiritual health and well-being" versus "spiritual practices" could be thought of as output versus input. She suggested that "spiritual practices" could be the input variable or independent variable and the outcome might be "spiritual health and well-being," along with the idea that there could be covariates that influence the output of a given experiment or therapy. In that context, Dr. Langevin suggested

thinking about spirituality in a research setting to help narrow down some of the questions. She said she was curious about the comment of using "spiritual health" as a covariate and asked for clarification on how using "spiritual health" as a covariate would be different than as an outcome.

Dr. Benveniste said the approach needs to be stepwise. Under whole person health are biology, psychology, behavior, and environment, and in a way these different factors can be thought of as covariates. Dr. Langevin agreed. Dr. Benveniste said it is important to the group to begin with language harmonization, then determine a measurement, then see if it has an effect, regardless of practice, then consider inserting it as a full domain.

Dr. Langevin acknowledged this as a good approach and suggested that the issue of a domain was premature. Dr. Benveniste agreed that the other steps need to occur first, specifically better measures. She invited other members of the group to share their thoughts to ensure everything is being stated accurately. Dr. Brolinson agreed with the presentation and discussion.

Dr. Langevin noted that the initial feedback from the community indicated something was missing by not including spiritualty. The question "Should spirituality be a domain?" seemed to be the starting point. Dr. Langevin agreed that looking at spirituality as a domain should be put aside and instead the focus should first be on how to define and measure, spiritual health and wellbeing, and then the domain issue may become clearer. Dr. Benveniste reiterated that the group is learning more about the issue by following what the VA is doing. Dr. Langevin agreed and complimented the working group for the progress that has been made so far.

Dr. Lavretsky noted there are multiple groups trying to define spiritual health and well-being, including the NIH Religion, Spirituality, and Health Scientific Interest Group (RSH-SIG) and the VA, and the working group will try to synchronize with them.

Dr. Schmidt emphasized that the RSH-SIG is looking at what organizations and groups have done but has not been developing any recommendations. Dr. Langevin reiterated that NCCIH felt the issue needed to be addressed, and she confirmed there is a representative from NCCIH to the NIH interest group.

Dr. Linderman commented that the Consortium for Health and Military Performance has a spiritual domain in their holistic approach to health care and that spirituality is part of their ongoing discussions. He shared that in January 2025 the consortium will be holding a psychological, social, and spiritual summit featuring discussions on spirituality, and he welcomed anyone present to participate.

Dr. Schmidt said she feels the group is making great progress and is planning to reach out to other groups for their input. Dr. Benveniste said the group does not want to reinvent the wheel and is looking forward to hearing from outside experts.

Dr. Langevin thanked Dr. Benveniste and the group for their work.

IV. NCCIH Portfolio Analysis

Dr. Langevin introduced Angela Arensdorf, Ph.D., health science policy analyst, for the first of two presentations from the NCCIH Office of Policy, Planning, and Evaluation (OPPE). Dr. Arensdorf said that NCCIH is beginning to prepare for the next strategic plan, which is a Congressionally mandated document that must be updated every 5 years. The development of a new strategic plan is a long process that includes input from staff, stakeholders, and scientific advisors. Dr. Arensdorf explained that the plan sets strategic priorities to help advance the NCCIH mission. Two key questions are: "Where are the potential gaps in the portfolio?" and "What are the strategic priorities?" Other key questions are: "How is the research portfolio distributed across interest areas?" and "How can we capture the integrative nature of the portfolio and track it over time?"

Dr. Arensdorf said to help illustrate the portfolio, NCCIH staff created a network map that represents the FY 2023 extramural research portfolio, which she shared in a slide. Dr. Arensdorf explained the dots on the map represent grants that were administered or funded. The gray boxes correspond to the program themes from Dr. Langevin's presentation, and the branches between the dots indicate how they are interconnected. The colors of the dots reflect how many themes overlap. The intention of the map is to help visually orient everyone on the scope of the portfolio. Dr. Arensdorf pointed out that the position of the grants is important, and the clusters illustrate that these grants touch the same themes, representing how much NCCIH is investing in different areas.

Dr. Arensdorf shared examples of clusters to further explain the concept. She highlighted one grant (R01-AT-012-075) in the cluster that focuses on Nutrition and Natural Products. This project evaluates the pharmacology, synthesis, and target assignments associated with a natural product, and it does not overlap with any of the other themes. Dr. Arensdorf compared it to a second grant (R34-AT-011-772) that integrates two themes, Mind and Body and Pain and Pain Management; a third grant (R01-AT-010-757) that integrates three themes, Whole Person Research, Nutrition and Natural Products, and Pain and Pain Management; and a fourth grant (UG3-AT-012-521) that touches four themes, Whole Person Research, Mind and Body Connection, Positive Health Processes, and Nutrition and Natural Products.

Dr. Arensdorf said she hoped that the mapping helped to better illustrate the distribution and integration of the portfolio, identify gaps and opportunities, and track shifts in the portfolio over time.

Discussion: Dr. Wager asked how "whole person" is defined. Dr. Arensdorf said they code sub-areas, which roll into higher areas and result in a theme that is a grouping of smaller areas. The smaller areas for whole person research are integrated multisystem investigations, which means looking at one or more body systems or whole person domains interacting or influencing each other. The other is multisystem therapeutic output, which requires an intervention and then looks at the effects of two or more systems or domains. There are also multicomponent interventions, which look at the impact on multiple systems or the interaction between the two.

Dr. Langevin explained that "whole person" is truly integrative and moves toward understanding the whole puzzle by putting two or more pieces together.

Dr. Haney liked the visualization and asked what was in the "other" category. Dr. Arensdorf said the other bubbles represent workforce development and data methods—diversity programs and training that do not have a research focus. Dr. Haney asked if that would feed into what's missing, and Dr. Arensdorf confirmed it would.

Dr. Soumyanath asked if this has been done retrospectively, to see how things have changed over the past 5 years with the introduction of whole person health. Dr. Arensdorf acknowledged that she has looked at the data but does not have anything ready to present; however, she said they have seen shifts. She confirmed it is something that can be tracked over time.

Dr. Sibinga also liked the visualization and commented that all the circles aren't equal. She asked if there are further visual analytics that could be used; for example, whole person is very different from a natural product approach. She said she was struggling with the beauty of the visual but wanted to be careful to match it with content. Dr. Arensdorf confirmed that this is not the only analysis that occurs when evaluating the portfolio. She said it is a tool to help visualize the complexities and how much is being invested in a specific area.

Dr. Langevin reiterated that NCCIH is looking to move the portfolio to an integrative perspective, so future analyses may show that more natural products grants are connected to other things, such as resilience.

Dr. Soumyanath asked to address natural products and reductionist research. She said that natural products are multicomponent mixtures, which could have multiple effects; therefore, there is no reason natural product research should not also address the whole person. Dr. Arensdorf explained that can be seen in the network map, and some of the natural products grants overlapped with others.

Dr. Sluka said it is important not to lose sight that there is a time and place when the mechanisms must be understood first before taking an integrated approach. She stated in the case of natural products and some nonpharmacologic treatments, it is important to understand those first before following a whole person approach. Dr. Langevin agreed. She also stated NCCIH is very excited about this new tool that has been in the works for years and will be useful in establishing the next strategic plan.

V. NCCIH Strategic Planning Process Update

Dr. Langevin welcomed Mary Beth Kester, M.S., director of the OPPE, for her presentation on the planning process. Ms. Kester said the current strategic plan goes through FY 2025, and OPPE staff is working internally with the NCCIH DER and senior staff to conduct the portfolio analysis and think through the high-priority research topics. Ms. Kester said a request for information will be posted in the fall to get input on gaps, opportunities, and thoughts on the current plan. A draft plan will be posted to the NCCIH website in August 2025 for public comment, and the final strategic plan will be completed in early 2026. Ms. Kester said Council will have plenty of time to review and comment.

Dr. Langevin reiterated that there is potentially one year to review all the information that is collected.

VI. The NIH HEAL Initiative

Introducing the update on the NIH HEAL Initiative, Dr. Langevin said this is an important program, and NCCIH is very involved. Dr. Langevin noted that the initiative was created in response to the opioid overdose crisis, much of which was originally driven by prescription opioids, and has since evolved to include heroin, fentanyl, and other substances. She noted that pain management is at the center of the opioid overdose crisis. While prescriptions of opioids have stabilized, these drugs continue to be prescribed more than nonaddictive methods of pain treatment, including nonpharmacologic options. Dr. Langevin said initially the NIH HEAL Initiative had funding of $500 million ($0.5 billion) per year.

Dr. Langevin explained that the new leaders of the NIH HEAL Initiative are Nora Volkow, M.D, director of NIDA, and Walter Koroshetz, M.D., director of NINDS. Because many Institutes and Centers (ICs) are involved in pain research, many aspects, including developing funding opportunities, creating initiatives, reviewing applications, and administering awards after they are funded, are being distributed across 16 ICs.

Dr. Langevin said that the NIH HEAL Initiative pain portfolio will now be led by Dr. Koroshetz and two rotating co-chairs, Lindsey A. Criswell, M.D., M.P.H., D.Sc., director of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) and Dr. Langevin.

Dr. Langevin said the work is being divided among the 16 ICs to reflect research on how many different parts of the body and diseases are affected by pain. Dr. Langevin explained that the work is accomplished over the course of one year. The process begins as different program staff recommend ideas for initiatives. For example, NCCIH proposed the myofascial pain initiative and many other ICs were interested, including NIAMS and the National Institute of Dental and Craniofacial Research.

Dr. Langevin emphasized that this collaboration is what makes the NIH HEAL Initiative so important. The process begins with ideas that are first proposed to the NIH HEAL Initiative Steering Committee, which is composed of all interested ICs. This committee ranks the proposals then sends them to the initiative's Pain IC directors committee, which decides if a concept goes forward. Once a concept moves forward and requests for applications (RFAs) are shared amongst ICs, the process begins again. This allows time for people to react to the concept, develop a proposal, and submit the application, which Dr. Langevin acknowledged is a difficult process. Once grant applications are received, reviews are organized and applications are scored and presented to individual Councils. For example, NCCIH will review some proposals based on its areas of expertise and present them to council. The funding recommendations are made and the process is repeated with the NIH HEAL Initiative Steering Committee and the Pain IC directors committee, and the final funding decision is made by the NIH HEAL Initiative. Dr. Langevin said while the process is complex, it is less so than it was previously.

Dr. Langevin explained that the goal is to expand the process and publish the RFAs sooner because budgets must be spent before the beginning of the next fiscal year, which is October 1, which constrains the timeline. Dr. Langevin said they are making great progress on simplifying the process by publishing RFAs sooner, giving people more time to write and submit

applications, and allowing ample time for review before October 1. Dr. Langevin also acknowledged the large number of people involved in this initiative.

Dr. Langevin said a new strategic plan for the NIH HEAL Initiative is being developed that will allow for growth and provide an opportunity to look at some parts of the initiative portfolio that have not been fully or successfully addressed. Gaps in pain research due to a lack of funding opportunities or a lack of applications for funding need to be better addressed. Dr. Langevin said a large-scale portfolio analysis is needed.

Additionally, Dr. Langevin said there needs to be an understanding of how much pain research is happening within and outside of the NIH HEAL Initiative. Dr. Langevin said she is especially interested in areas of pain research that have not yet been well examined. This will be an opportunity for NCCIH to have input on the kind of research we want the initiative to consider, and a committee is being formed to make recommendations on these research priorities. Dr. Sluka agreed to be a co-chair of the committee with Dr. Rob Gereau. The committee will help to develop strategic research priorities for the initiative's pain research and look at the interface between the NIH HEAL Initiative and opioid use disorder (OUD).

Dr. Langevin pointed out that people with OUD have pain, and that needs to be considered. Any exposure to opioids for someone with a history of OUD is a problem, and managing their pain is challenging. Some populations, specifically Native Americans, are at the highest risk of OUD. For these reasons, the group will work closely with NIDA to develop special programs and initiatives.

Dr. Langevin showed a slide of the NIH HEAL Initiative Pain Strategic Planning Timeline and noted that it overlaps with the NCCIH Strategic Planning Timeline. NCCIH has already had much input into the initiative, which is important for shaping programs such as Pragmatic and Implementation Studies for the Management of Pain to Reduce Opioid Prescribing (PRISM) and Behavioral Research to Improve Medication-Based Treatment (BRIM), two initiatives that use pragmatic study design and implementation to look at pain management and OUD in the real world. PRISM and BRIM are flagship programs within the NIH HEAL Initiative. Dr. Langevin recognized David Shurtleff, M.D., deputy director of NCCIH, Wendy Weber, N.D., Ph.D., M.P.H., chief of NCCIH's Clinical Research in Complementary and Integrative Health Branch, and others who have been instrumental in shaping the direction of the NIH HEAL Initiative.

Discussion: Dr. Cech asked Dr. Langevin to identify some of the areas of pain research that haven't been looked at yet by the NIH HEAL Initiative. Dr. Langevin said there has been a shift in musculoskeletal pain. She explained that in the 1980s the focus was on fixing what was broken; for example, if people had back pain, they would have spine imaging and possibly surgery. Around 1990, there was a shift to consider emotional and psychological dimensions of pain, since much pain, especially chronic pain, involves sensitization mechanisms in the brain that perpetuate the pain. Dr. Langevin said the pendulum has swung further, and now there is very little research literature about the role of peripheral tissues in musculoskeletal pain. Currently, most pain research focuses on the nervous system and the psychosocial aspects of pain.

Dr. Langevin said she thinks, and has written about, the importance of bringing the two aspects of pain back together. She said the NIH HEAL Initiative is looking for better biomarkers and imaging for soft tissues. Although X-rays provide adequate images of bones, they do not provide good images of ligaments, fascia, and muscle. Dr. Langevin said another program within the initiative, Restoring Joint Health and Function to Reduce Pain (RE-JOIN), looks at the whole joint, including the capsules, ligaments, and fascia, and maps the sensory information of all these tissues. Dr. Langevin also mentioned the Back Pain Consortium Research Program (BACPAC), which is developing and testing models for back pain that will incorporate data from other programs to improve understanding of back pain beyond the facet joint and intervertebral disc. She said things are already moving in an integrative direction, partly because of NCCIH's input. Dr. Langevin said another direction is endogenous pain resolution. She explained we tend to think of analgesics when we think of pain management to temporarily reduce the pain, and therefore, acupuncture is considered an analgesic. There are cases in which people who stop acupuncture treatments after several months and do not experience pain recurrence. This is health restoration, where the body has healed and analgesics are no longer needed; however, little is known about this mechanism. It involves the whole person, including behavioral changes, resolution of phenomena that may occur in tissues and possibly the nervous system, and perhaps societal influences. Dr. Langevin said this is why taking a whole person approach needs to be considered to understand built-in mechanisms that people have that allow them to feel better. Dr. Langevin also said this topic is what she will be talking about at IASP in August.

Dr. Wager commented that the NIH HEAL Initiative seems to be very patient focused and asked if there is a place for research on pain itself. Dr. Langevin said the initiative is not entirely patient focused but was originally more focused on developing better drugs that are not addictive. She explained there was a pipeline for target development and identification of compounds that might interact with various receptors. While this continues, there is also some focus on devices as well as pragmatic research. Most research that focuses on pain mechanisms is not under the NIH HEAL Initiative but is funded by ICs such as NINDS and NIAMS. She also pointed out that the RE-JOIN program is looking at sensory mapping of neurons in joints.

Dr. Wager said there is basic mechanistic research in animals and in humans, and as a result there is an increased understanding about the sensory experience of pain. He said some of the reasons people develop chronic pain is because learning mechanisms are dysregulated, which is one example of human research that doesn't seem to have a home because it isn't about a particular condition. Instead, it's about the process of learning and adaptation to pain. Dr. Langevin appreciated and agreed with Dr. Wager's comments. She explained that initially, there were two teams, a basic team focused on developing therapeutic drugs, and clinical team focused on trials. Dr. Langevin said the kind of research Dr. Wager is describing falls between the two. Now there are four teams, one of them is called Integrative Pain Mechanisms. Not having a home for a team was an obstacle for a concept, so now it should be easier and less prescriptive, and having a team dedicated to that problem will be important.

Dr. Shurtleff added that the NIH HEAL Initiative was started as a response to a public health emergency, and the tendency was to focus on the approaches to address the emergency. The programs are now evolving and changing and this will help redefine the initiative.

Dr. Langevin acknowledged that conducting pain research and being a practitioner who treats pain are challenging, and it's hard to attract investigators. Much of the evolution is a response to needs.

Dr. Sluka said there is concern that because of the NIH HEAL Initiative there may be less money going into pain research, but that's not accurate. She said there's a small increase in funding for pain research outside the initiative in addition to having the NIH HEAL Initiative funding. Dr. Sluka said that is encouraging to see, and she believes there will be a group that will think through what the big initiatives should be and where they should go to hopefully improve pain management over the long term. However, many of the management programs are going through the NIH HEAL Initiative rather than standard study sections, which opens money for other research.

Dr. Langevin said that Congress appropriated $5 million last year and this year to NCCIH specifically for pain research in addition to the budget and in addition to what has been granted for the NIH HEAL Initiative.

VII. **NCCIH's Updated Clinical Trial Funding Opportunities**

Dr. Weber explained the NCCIH Clinical Research Branch provides portfolio management for NCCIH research studies that focus on clinical outcomes, developing and refining interventions, and testing for efficacy, eventually leading to pragmatic trials. Dr. Weber said that her presentation would focus on the clinical outcome studies, which include health services research as well as many trials and intervention development.

Dr. Weber said the goals for this program and the research that is supported must align with the NCCIH Strategic Plan. Research should be conducted at the appropriate stage based on what is currently known about interventions and what is used in clinical conditions. Investigators must use rigorous methods that are appropriate for the stage of research and test hypotheses that will guide future research. Additionally, appropriate budgets, realistic timeframes, and the scope of work that can be done within an individual application must be clear. The ultimate goal is to support impactful trials, which can include fully powered studies with results that may influence guidelines or health care policies, as well as important feasibility work that may inform the design of a fully powered trial.

Dr. Weber shared the Research Framework graphic and said that NCCIH worked across the branches to build this framework, from very basic research through clinical trials to dissemination and implementation science. She explained that within each circle is a question associated with the kind of research conducted at each stage. Research may be focused in one of the circles or it may move along the pipeline. Both the Clinical Research and Basic Research

Branches try to ensure there are funding opportunities for each different stage of research, and that the NOFOs that match to each different stage of research are mapped.

Dr. Weber announced that the NCCIH Clinical Trials Funding Opportunities webpage has been updated with a navigation menu to make it easier to find information, including the full suite of funding opportunities. Eleven funding opportunities have recently been reissued to support the entire sequence of stages of research for both Mind and Body Clinical Trials and Natural Products Clinical Trials. The frequently asked questions, additional resources, and other areas of interest have all been updated to make it easier for users to find the funding opportunity that matches the stage of research they are interested in. A new drop-down menu has been added to the left side to make the pages more user friendly.

Dr. Weber said that as the funding opportunities have been reissued, the Division of Extramural Research (DER) has worked closely with the Office of Scientific Review (OSR) in the Division of Extramural Activities (DEA) to ensure priorities align with the NCCIH Strategic Plan. She noted there is a new Plan for Enhancing Diverse Perspectives (PEDP) that will help diversify the workforce and the teams that work on research studies. The NOFOs now ask investigators for plans on how they will achieve diversity to be included in their applications. This approach is being implemented across NIH. Dr. Weber explained that NCCIH has tried to clarify the nonresponsiveness criteria, including not allowing waitlist controls, to enhance rigor. Most often trials use a usual care control if they are addressing effectiveness questions or time and attention controls if they are using efficacy designs. NCCIH also wants feasibility work to determine if it is actually feasible to keep people in studies compared to the comparison groups that will be used. Additionally, the language has been updated and clarified for multicomponent interventions to direct people toward the correct funding opportunity. These updates have been implemented across the suite of mind and body and natural products funding opportunities.

Dr. Weber reviewed specific changes to the mind and body NOFOs. There is now a section within each NOFO that focuses on design considerations, which includes information on waitlist and comparator arm selection to help investigators identify their research question and determine the comparison group. Dr. Weber also reviewed specific changes for the natural products NOFOs. All the updates to the clinical trial NOFOs are available on the drop-down menu on the NCCIH website. The first receipt date was February 2024, the next is in June, and the last receipt date is October 2026.

Dr. Weber said external outreach about these updates includes a Notice in the Guide with all NOFOs, an update on the website, direct email to grantees and applicants from the past 3 years, a video library rollout on the website, and a blog post to announce the video library.

Discussion: Dr. Brolinson asked if all the information is on the NCCIH website, and Dr. Weber confirmed it is.

Dr. Haney said she reviews many applications for studies with waitlist controls and asked why they are no longer allowed. Dr. Weber explained that some people who get put into the waitlist condition defer additional care to see what care they get in the study. Waitlists extend the duration of the trial and participants' time in the trial, which increases the cost to the funder

because the intervention must be provided to everyone. It also extends the timeline because after everyone finishes there must be time for the intervention to be delivered. Waitlist controls are not as rigorous as time and attention controls for efficacy studies, or for subjects to continue their normal routine in effectiveness studies. She noted some feasibility studies are done without a comparator group, but if feasibility data are not needed for the comparator group, often the feasibility study is done to determine if people are willing to be randomized to the two conditions that will eventually be used in the efficacy study.

Dr. Haney asked if this is done NIH wide, and Dr. Weber stated it is NCCIH specific and only for these NOFOs. She explained that within each funding opportunity there is a list of nonresponsiveness criteria, and NCCIH is trying to make people more aware of this because nonresponsive applications will not be reviewed. There are very different approaches across ICs, and in some rare conditions or diseases a waitlist may be appropriate. Dr. Weber said there are times when more complex designs are used, such as a stepped-wedge roll-out design that might be called a waitlist when actually it is usual care. She emphasized that talking to a program officer is important to ensure the correct terminology is being used.

Dr. Langevin said much time is spent thinking about how to effectively communicate the rules and expectations for grant applicants because it is difficult to navigate this information. She encouraged everyone to go to the NCCIH website and provide feedback to ensure is the materials are user friendly.

Dr. Sluka commented that this seems easy to follow, and she appreciates how clinical trials are being thought through. She said this approach is needed to promote rigor. Dr. Weber said investigators have said they can find funding for a small pilot study or for an R01, but they have a hard time finding funding for anything in between. She said many interventions, especially mind and body interventions, are complex to deliver, and to do a fully powered study requires enrolling participants across many sites. Dr. Weber noted that NCCIH has a specific R01 that's meant for conducting multisite feasibility trials to figure out how to get all the sites to deliver the intervention with fidelity. She said many trials have struggled with these activities, so establishing how they will be done is an important element. Another element in the suite is a specific funding opportunity for virtual or mobile health (mHealth) app-delivered interventions and studies that do all their data enrollment and collection without seeing patients in person.

Dr. Sluka asked if there is a data coordinating center that they can work with. Dr. Weber said people who are conducting fully powered multisite efficacy trials are asked to submit a set of applications consisting of a clinical coordinating center, and a data coordinating center that are linked but independent, so they keep all the data and can perform the site monitoring activities; this is similar to what many other ICs do.

Dr. Soumyanath asked what Dr. Weber would advise people on training grants about what is most beneficial or relevant on the website and if they should look elsewhere. Dr. Weber said there is a separate suite of NIH-wide NOFOs for trainees. Postdoctoral fellows, predoctoral fellows, F31s and F32s, by NIH policy cannot do stand-alone clinical trials. People should think about that earlier in the pipeline of the suite of funding opportunities. For example, the scope of

natural products research may be appropriate for R61 or mechanistic clinical trials, while a feasibility study may be considered for mind and body research. She reiterated that K awards have limited budgets, so scoping what can be done within the available timeframe and budget is important to discuss with applicants for those funding mechanisms.

Dr. Schlaeger asked if it is necessary to do efficacy trials before applying for an effectiveness trial. She said some people are reticent to go from an R34 to an R01 multisite feasibility study because they are concerned that they won't have efficacy data to then apply for an effectiveness trial. Dr. Weber explained the NOFOs that support effectiveness studies also support efficacy trials, so the UG3/UH3 and U24 pair can be used for either. The case has to be made to the reviewers and the funder of what question needs to be asked and what comparison group is appropriate for that research question. Dr. Weber gave some examples of questions and comparison groups. A list of the necessary preliminary data is in the NOFO.

Dr. Lavretsky asked about the rate of conversion from feasibility to R01 and effectiveness trials. Dr. Weber said NCCIH is tracking these data internally and may want to present to Council in the future. Applications for effectiveness trials are coming in as investigators finish multisite feasibility work, and researchers are going to the NIH HEAL Initiative and other places for funding of multisite efficacy studies. Dr. Weber said the last time the NOFOs were revised they were updated so people could cite feasibility work published by others who have done a similar intervention in a similar patient population.

Dr. Wager said that on the site it looks like mHealth would go to a special interest panel and asked about the logic to create that RFA. Dr. Weber explained that NCCIH has a special emphasis panel that reviews all the funding opportunities for the clinical trials suite. All the reviewers are oriented to the special review criteria. She said before the COVID-19 pandemic, NCCIH started to see more mHealth applications and realized the suite of funding opportunities didn't fit studies of this type. The larger multisite trials need an independent data coordinating center and a clinical coordinating center, but it became apparent that this didn't work for mHealth applications because they are not delivering clinical care. The R01 was created specifically for this type of application, and it fits much better with the way these trials are designed.

Dr. Wager said he was familiar with what is considered mind and body interventions but is not clear on what is **not** considered mind and body interventions and asked whether cognitive behavioral therapy (CBT) or neurostimulation would be included in the definition. Dr. Weber said that CBT for depression has already been very well researched, so it would have to be something new in that space. Dr. Weber said the best approach is to contact a program officer.

Dr. Langevin explained NCCIH has changed some language in broad categories of nutritional, psychological, and physical therapeutic input, whereas under the previous strategic plan the term "mind and body" was used to refer to mostly complementary therapies. Now, an intervention can primarily have a psychological input and include CBT or meditation; or a project may have a primary physical input, such as massage; or it may have a combination of psychological and physical inputs, such as yoga. Dr. Langevin said the boundaries have been broadened, which is

important so people don't feel like they have to fit their proposals into a specific list of things that may or may not be funded.

Dr. Schmidt added that all the funding opportunities which Dr. Weber has been discussing are program announcements (PARs), and only NCCIH is supporting them. She emphasized that reaching out to program officers to ensure the focus of a potential proposal is appropriate for NCCIH is critical. Dr. Langevin acknowledged there is a lot of detail and reiterated that communicating is important. She recommended reaching out if anyone has suggestions or finds something is unclear.

Dr. Schlaeger thanked everyone for articulating why a two-site feasibility study is needed compared to an efficacy study. Dr. Weber appreciated the comment and suggested that it could be a topic for one of the new videos. Dr. Schlaeger added that people who have been funded by other ICs may have a preconceived notion of how to approach applications, and this is very different. Dr. Weber said there has been an ongoing discussion of how little is known when looking at efficacy and small studies or "C trials." But doing feasibility trials well sets investigators up for success, and that's what people should focus on.

Dr. Sluka asked if this approach will be picked up by other ICs. Dr. Shurtleff said NCCIH has parsed out what it means to do good clinical research and not force it into an R01. He said going to the UG3/UH3 was a breakthrough because it gave people more time to plan for a study. Dr. Shurtleff said this is evolving and to Dr. Sluka's point, more ICs may follow. He also said the NIH director's work with the Primary Care Network may not have been proposed without knowing how to do well-organized clinical research.

Dr. Schleager said it's frustrating to investigators after doing the R34 or a feasibility study who then want to do an efficacy trial but instead must do another feasibility study. Dr. Shurtleff agreed it takes patience and discipline.

VIII. Update on Concept for Reissue of "REsearch Across Complementary and Integrative Health Institutions (REACH) Virtual Resource Centers"

Lanay Mudd, Ph.D., stated that the intent of the REACH Virtual Resource Centers is to make it easier for research scientists who are located at complementary and integrative health institutions to navigate NIH and obtain funding. She noted that on March 7, 2024, Council approved reissuing the funding opportunity to create a network of centers that can support a diverse array of research activities and trainings for clinician scientists. The previous initiative was in FY23 and funded one center at the RAND Corporation led by Drs. Patricia Herman and Ann Coulter. In their application, RAND partnered with 13 complementary and integrative health institutions and proposed a comprehensive resource center to support scientists and faculty located at all those institutions. Dr. Mudd provided a link to learn more about the RAND REACH Center.

Dr. Mudd said the goal is to expand and create a network of REACH Centers that can focus on different areas of science and use different methods to provide virtual resources. This aligns with

the NCCIH Strategic Plan's objective to enhance the complementary and integrative health research workforce.

Dr. Mudd explained that there are two strategies. The first is to support training and career development at the individual level to increase the diversity and number of individuals who are conducting rigorous research. Several populations were focused on, including clinician scientists. The second is to foster interdisciplinary collaborations at the individual and institutional levels.

Dr. Mudd said these partnerships are necessary because the environments at research-intensive institutions typically have strong research infrastructure, grantsmanship courses, interdisciplinary networks, and principal investigators with a history of NIH funding who can help people navigate the system. However, research-intensive institutions often lack a strong presence of clinician scientists trained in complementary and integrative health disciplines. In contrast, complementary and integrative health clinical institutions have a concentration of clinician scientists who have the right type of training to inform research questions and a strong training environment to contribute to knowledge generation. However, they often lack the research infrastructure, environment, and training to support clinician-scientist careers. The goal of the REACH Resource Centers is to combine the different strengths of the two types of institutions.

Dr. Mudd explained the REACH Resource Centers would be located within research-intensive environments and would be scientific hubs that would foster clinical partnerships with the complementary and integrative health institutions. The centers would provide training for faculty located at clinical institutions and provide resources to conduct research that is aligned with NCCIH's strategic priorities.

Dr. Mudd clarified that these Centers will be established as virtual resource centers to ensure a wide reach. They will support development, submission, and management of Federal research grant applications for investigators pursing clinical research on health promotion and restoration, resilience, disease prevention, symptom management, and/or whole person health. The resources should be based on the needs of the partnering clinical institutions and must cover the following five categories: Administrative Support, Research Support, Grantsmanship, Mentorship and Training, and Team Building.

Dr. Mudd said the partnership aspect is critical to the success of the program, and REACH Centers are required to partner with at least three accredited U.S. domestic complementary and integrative health clinical institutions from a wide variety of disciplines. The partnering institutions must demonstrate a willingness to engage with the REACH Center and commit to supporting at least 20 percent protected time for faculty to participate in REACH activities. In addition, they must include plans to expand to additional partnerships.

Dr. Mudd explained that expanding into a network of centers will improve the quality and quantity of Federal research grant applications submitted by faculty at complementary and integrative health institutions. It will also aid the formation of multi- and interdisciplinary partnerships and help enhance the research environment at partnering clinical institutions. In addition, it will support a pipeline for clinical scientists.

Dr. Mudd shared the Notice of Intent to Publish a Funding Opportunity, NOT-AT-24-037 and anticipates the full RFA coming out at the end of May. A technical assistance and teaming webinar will be held June 18 to provide an overview of the funding opportunity as well as time for applicants from research-intensive institutions to meet with potential partners.

Dr. Mudd noted that Council provided a robust discussion in March and appreciated the unanimous approval of reissuing the concept.

IX. Update on Concept for the NIH HEAL Initiative Research Enhancement Award Program

Alex H. Tuttle, Ph.D., stated that the NIH HEAL Initiative has prioritized building the pain research workforce and increasing workforce equity, inclusion, and diversity as cross-cutting research goals. He said two crucial gaps exist in the initiative's workforce development. The first is the lack of a sufficient number of investigators from small or geographically diverse institutions. The second is the lack of a sufficient number of investigators from health professional schools or colleges. The proposed initiative will address these two gaps.

Dr. Tuttle said one way to address gaps is to use the NIH Research Enhancement Awards (REA) as a guide or framework. These programs are designed to support meritorious research proposed by researchers from eligible underrepresented U.S. academic institutions. The REA program will provide an opportunity for the NIH HEAL Initiative to increase scientific diversity in its own funded programs.

Dr. Tuttle explained the purpose of the current suite of REAs is to support small-scale research grants and institutions that do not receive substantial NIH funding. The emphasis is on providing biomedical research experience, primarily for health professional undergraduate and graduate students, while enhancing the research environment at applicant institutions.

Dr. Tuttle said the REAs have three goals: 1) to support meritorious research at institutions that have received less than $6 million of NIH funding in 4 of the past 7 years by a principal investigator who does not have an active NIH grant at the time of the award; 2) to expose students to hands-on research; and 3) to strengthen the research environment at award-eligible institutions.

NIH currently supports two programs with goals similar to that of this concept—Academic Research Enhancement Award (AREA) for undergraduate-focused institutions and Research Enhancement Award Program (REAP) for health professional schools and graduate schools.

Using the two programs as a guide, Dr. Tuttle explained that the proposed initiative is intended to support pain researchers at underrepresented institutions by accomplishing three key goals: 1) supporting eligible recipients from underrepresented institutions to build collaborative teams with a partnering institution; 2) prioritizing support of pain research at underrepresented U.S. institutions; and 3) enhancing the institutional research environment so that students from recipient institutions will benefit from exposure to and participation in pain research.

X. Public Comments

Dr. Schmidt stated that current procedure requires that any member of the public who wishes to submit comments may send them in writing to Dr. Schmidt by email (Martina.Schmidt@nih.gov) or postal mail, no later than 15 days prior to the date of the Council meeting. All written comments must be under 700 words in length, which is consistent with a 5-minute oral presentation. Written comments will be provided to Council members in the ECB in advance of the Council meeting. Dr. Schmidt will acknowledge receipt of any comments during the Open Session. No public comments were received for this meeting.

XI. Final Remarks and Adjournment

Dr. Schmidt announced the next Council meeting will be held on September 13, 2024. She thanked NCCIH staff and Council members for their participation. The meeting adjourned at 3:48 p.m. ET.

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

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Martina Schmidt, Ph.D. Executive Secretary National Advisory Council for Complementary and Integrative Health	Helene M. Langevin, M.D. Chairperson National Advisory Council for Complementary and Integrative Health