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 Seventy-Fifth Meeting
September 25, 2020

NACCIH Members Present Virtually
Dr. Belinda Anderson, West Long Branch, NJ
Dr. Todd Braver, St. Louis, MO
Dr. Robert Coghill, Cincinnati, OH
Dr. Anthony Delitto, Pittsburgh, PA
Dr. Roni Evans, Minneapolis, MN
Dr. Diana Fishbein, University Park, PA
Dr. Margaret (Meg) Haney, New York, NY
Dr. Richard Harris, Ann Arbor, MI
Dr. Kendi Hensel, Fort Worth, TX
Dr. Tammy Born Huizenga, Grand Rapids, MI
Dr. Girardin Jean-Louis, New York, NY
Dr. Benjamin Kligler,[1] Washington, DC
Dr. John MacMillan, Santa Cruz, CA
Dr. Wolf Mehling, San Francisco, CA
Dr. Eric Schoomaker,[1] Bethesda, MD
Dr. Karen Sherman, Seattle, WA
Dr. Lynne Shinto, Portland, OR
Dr. Justin Sonnenburg, Stanford, CA
Dr. Barbara Timmermann, Lawrence, KS
Dr. Gloria Yeh, Boston, MA

[1]Ex-officio

I. Closed Session

The first portion of the seventy-fifth meeting of the National Advisory Council for Complementary and Integrative Health (NACCIH), which was held virtually, 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 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. Appendix 2). A total of 170 applications were assigned to NCCIH. Applications that were noncompetitive, not discussed, or not recommended for further consideration by the scientific review groups were not considered by Council. Council concurred with the initial review group recommendations on 78 scored applications, which requested $34,109,201 in total costs.

II. Call to Order and Brief Review of Council Operating Procedures

The open session convened at 10:15 a.m. Dr. Partap Khalsa, NACCIH Executive Secretary, called the meeting to order. The minutes of the June 2020 Council meeting were approved unanimously, with two abstentions. Public comments can be submitted by email or postal mail to Dr. Khalsa (partap.khalsa@nih.gov) or NCCIH, and they will be included in the meeting minutes. Comments must be submitted in writing within 15 days of the meeting and be under 700 words.

III. NCCIH Director's Report

NCCIH Director Dr. Helene Langevin introduced new Council members Drs. Robert Coghill, Margaret (Meg) Haney, Girardin Jean-Louis, and Karen Sherman. Staff arrivals include a new program director, Dr. Hye-Sook Kim. Program director Dr. Dave Clark is going on detail as scientific director of the National Institutes of Health (NIH) Helping to End Addiction Long-Term^{SM} (HEAL) Initiative. The Division of Intramural Research (DIR) is undergoing a leadership transition. Dr. David Shurtleff is now acting scientific director—as well as acting chief of two branches—concurrent with his position as the Center's deputy director. Dr. Catherine Bushnell has stepped down as scientific director and will work full-time for the next year on (1) directing and supporting the new NIH Pain Research Center, where she will also be a senior investigator, and (2) transition-related work in preparation for her retirement.

Dr. Langevin discussed measures taken by NIH and NCCIH leadership during the coronavirus disease 2019 (COVID-19) pandemic to enable NIH and its components to function. Many staff are working remotely. NCCIH intramural research activities have resumed at 50 percent capacity, and Dr. Langevin was "cautiously optimistic" that this level could be sustained. NCCIH is involved in COVID-19 research, funding seven grants for a total of $2.46 million, as administrative supplements or urgent competitive revisions, on the social, behavioral, and economic impacts of the pandemic (part of a trans-NIH initiative), stress management, and natural products.

HEAL has funded two new grants as part of the Pragmatic and Implementation Studies for the Management of Pain to Reduce Opioid Prescribing (PRISM) initiative. Four existing PRISM awards are transitioning to the implementation phase. An award under the Behavioral Research to Improve Medication Assisted Treatment (BRIM) initiative is transitioning to the second phase. Six supplements have been awarded under BRIM. The NIH Back Pain Consortium (BACPAC) research program has funded a supplement to an existing award. Dr. Langevin presented the NCCIH budget mechanism table. The numbers were approved as of June 30. NCCIH had an increase in funding from Fiscal Year 2019.

Highlights of recent NCCIH-funded research include:

- A randomized clinical trial comparing Kundalini yoga with cognitive behavioral therapy (CBT) in people with generalized anxiety disorder. Compared to control, both interventions were helpful, but the hypothesis was not supported that yoga was non-inferior to CBT.
- An animal study comparing the effects of electroacupuncture on different anatomical regions and exploring its pro- and anti-inflammatory effects.
- A study that investigated the complex relationships of gut bacteria, inflammatory processes, and intestinal mucosal enzymes that break down specific bacterial populations.
- A qualitative study from the intramural programs of several NIH institutes and centers (ICs) on the complex symptomatology of myalgic encephalomyelitis/chronic fatigue syndrome.

- A study that provides insights on how a population of immune cells in the meninges regulates anxiety-like behavior in mice.
- Two studies of interoception, one on basic physiological states and one on airway defenses.

Recent events sponsored by NCCIH included an Integrative Medicine Research Lecture by Dr. Helen Burgess of the University of Michigan on how light influences mental and physical health, a workshop on interoception, a roundtable on regulatory aspects of natural products research, and a HEAL-funded workshop on myofascial pain (which was attended well beyond expectations). Upcoming events include a Hot Topic Webinar on implementation science and a workshop on cannabinoids and pain.

Dr. Khalsa explained that the early start times of virtual Council meetings have been difficult for members on the West Coast. A motion was unanimously passed to begin the closed session at 10 a.m. ET starting with the next Council meeting.

Discussion: Dr. Schoomaker was very impressed with NCCIH's comprehensive work and openness to new ideas as they emerge. He noted that the Center has a very modest budget compared to other ICs. Dr. Anderson asked about Dr. Clark's detail to HEAL in relation to his NCCIH portfolio on implementation science. Dr. Langevin said that for this temporary detail, the portfolio has been redistributed among other program staff and will be well covered. Dr. Langevin noted that Dr. Bushnell received a 2020 NIH Director's Challenge Award; with collaborators from eight other ICs, she will further develop the staffing, training, and outfitting of the new NIH Pain Research Center.

IV. Annual Report on the NCCIH Division of Intramural Research

Dr. Shurtleff reviewed Dr. Bushnell's accomplishments and thanked her for her dedication and contributions during her 8 years of leading the DIR. He also recognized the principal investigators of the DIR's three research sections and their achievements under Dr. Bushnell's leadership. The new acting clinical director in the DIR is Dr. Maryland Pao, who serves in multiple roles at NIH. Dr. Yuanyuan (Kevin) Liu recently started at the DIR as a Stadtman Tenure-Track Investigator, in a dual appointment with the National Institute of Dental and Craniofacial Research.

NCCIH scientists had observed a lack of a centralized resource at the Clinical Center (CC) to evaluate, manage, and study pain in the diverse population groups who receive care there. This observation led to the idea for and launch by the NCCIH DIR of the new NIH Pain Research Center, to be part of the CC. The vision is that it will conduct phenotyping and gather a wide range of vital measurements toward identification and better understanding of mechanisms of diverse pain states. It will also develop and test personalized therapies to better manage pain and predict responses to therapies. The pain center's work is already robust, and NCCIH hopes to expand it over time, including from new collaborations. The research projects will cover a variety of issues, cut across several NIH intramural programs, and bring together NIH researchers. NCCIH funds the core staff who attend to the center's day-to-day operations. On behalf of NCCIH, Dr. Shurtleff thanked Dr. Michael Gottesman, NIH Deputy Director for Intramural Research, for approving additional funding to enable the continued growth of this initiative.

Discussion: Dr. Schoomaker called the new Pain Research Center promising and timely. He noted the integrative approach at the CC in taking care of patients. Dr. Shurtleff thanked Dr. James Gilman, the inaugural chief executive officer of the CC, who has been extremely supportive of the new center,

finding space for it in a very tight NIH environment. In response to a question from Dr. Yeh, Dr. Shurtleff said that in this phase of transition, meetings are taking place to prepare for future hiring of the center's scientific director. Because candidates will need to travel to and physically spend time at NIH, advertisement for this position will likely be held until the pandemic situation is more resolved.

V. Update on the NCCIH Intramural Section on Affective Neuroscience and Pain

Dr. Lauren Atlas, principal investigator and chief of the DIR's Section on Affective Neuroscience and Pain, presented some of the Section's recent projects. The Section's work focuses on understanding how expectations and psychological factors shape pain, and characterization of the psychological and neural mechanisms by which expectations and other cognitive and affective factors influence pain, emotional experience, and clinical outcomes. By manipulating stimuli and other factors, the group studies the connection with symptoms such as pain and compares pain with other types of adverse experiences.

Dr. Atlas holds joint research appointments with the National Institute of Mental Health (NIMH) and the National Institute on Drug Abuse (NIDA). She and several NIMH colleagues have initiated a very large study on the mental health impact over time of the COVID-19 pandemic. Starting with former study participants and volunteers, they have accrued 3,000 participants to date, representing every U.S. state and territory. Dr. Atlas presented preliminary analyses that illustrate a profound tie between psychological factors and well-being. Themes include interactions among prior mental health conditions, physical symptoms, and worries about the coronavirus.

Dr. Atlas discussed two studies recently submitted for publication. One focused on pain metacognition ("thinking about thinking") and the role of uncertainty. Interim findings indicate that people can introspect on subjective pain, confidence about pain varies among individuals, and reaction time during pain decision making predicts confidence. This suggests uncertainty is a meaningful outcome measure for pain, a finding that could also apply to other health outcomes. The other study looked at how first impressions influence pain expectations. Among the findings so far are that participants' impressions of health care providers' traits appear to influence their expectations about pain and expected analgesic use. Competence and similarity independently predicted expectations. A current substudy focuses on whether stereotypes of demographics influence expectations about pain and analgesic use.

Summing up, Dr. Atlas said that pain and health outcomes are strongly influenced by psychological factors, including uncertainty. People experience uncertainty during pain, and it can be measured with behavioral indices. Trait impressions influence expectations about pain and analgesics. These findings are being followed up in NIH studies in real clinical settings.

Discussion: Dr. Haney asked whether interaction was seen between a race effect and a sex effect; the speaker replied no, they were independent and were seen primarily in different studies. In response to a second question from Dr. Haney, Dr. Atlas detailed further the significance of the uncertainty effect and the pain response. Dr. Anderson commented on the relationship of the uncertainty effect and variability of pain. Dr. Atlas responded that the only individual differences were in how reliable people were in associating temperature and pain. Also, the study was done in healthy volunteers, and more variability may be seen in other contexts. Dr. Anderson asked whether Dr. Atlas has thought about the role of meditation and metacognition around pain. Dr. Atlas said a study from her lab on mindful attention and awareness is in review.

Dr. Schoomaker commented that "as the onion is more peeled" on the biopsychosocial aspects of pain, especially chronic pain, Dr. Atlas's work will help inform measurement of pain, including development of pain rating scales. Dr. Atlas said that her team has been looking at brain-based biomarkers to compare different responses and different types of rating schemes. In addition, they are doing a study on the reliability of their pain measures in 300 volunteers who previously participated in DIR studies. Dr. Jean-Louis mentioned circadian timing and pain and asked the speaker whether she has examined whether the time of engagement affected participants' pain sensitivity. Dr. Atlas responded that she has not but called it a very good idea for her study in previous participants.

VI. Concept Clearance: Multilevel Physical Activity Interventions to Improve Health and Well-Being Initiative

NCCIH program director Dr. Lanay Mudd and Dr. Jacqueline Lloyd, senior advisor for disease prevention at the NIH Office of Disease Prevention (ODP), presented this research concept. NCCIH recognizes the importance of promoting healthy behaviors such as physical activity and that complementary and integrative health approaches may be useful in this regard. The Center works with ODP on health promotion and disease prevention initiatives across a variety of topics.

The concept is intended to stimulate and support innovative, promising research aimed at developing and testing multilevel physical activity interventions to improve health and well-being. It will solicit research on multilevel interventions that act on at least two socioecological levels or two or more domains or levels of the National Institute on Minority Health and Health Disparities (NIMHD) Research Framework and extend across a variety of populations. The research would be aimed at increasing health-enhancing physical activity in persons or groups who can benefit; be implemented in settings where these populations work, play, and otherwise spend their time; and be made scalable and sustainable for broader use. Specific objectives for NCCIH include the incorporation of mind and body approaches in the multilevel interventions. ODP would lead the initiative and seek trans-NIH partners. So far, seven ICs and one office are participating.

Dr. Evans has a grant in this topic area on mindful movement for physical activity and well-being in older adults, with the YMCA in the Minneapolis area as a partner.

Discussion: Dr. Haney asked whether participation by NIDA is finalized, and Dr. Lloyd explained that this is in progress. Dr. Delitto praised the concept, calling it long overdue and in the "sweet spot" for the Center; he thinks NCCIH should own it. Dr. Schoomaker agreed regarding ownership; noted the military community has long experience with the study and practice of all forms of physical fitness as a high priority; and suggested that a dialogue in this topic area could be started with the Department of Defense and possibly the Department of Veterans Affairs (VA). Dr. Yeh supported the concept, including its emphases on technology and health disparities and its dovetailing with work on mind and body therapies and on behavior change. Bringing different types of mind and body exercise to people and communities in culturally sensitive ways would be key and timely. Dr. Sonnenburg asked whether diet was being considered as a component. Dr. Lloyd said it will be included in the conversation moving forward. Dr. Sonnenburg added that NIH has a new nutrition roadmap out for the next decade, and this initiative might be a good place to work that plan in.

Dr. Sherman called the concept very important and liked the focus on diversity. Could a collaboratory format be helpful in coming up with some best practices that would work with different minority communities in particular, and use the funds most efficiently? She suggested mixed methods as something NCCIH should want to see: a two-stage process, e.g., feasibility work before a larger trial; more of a pragmatic design; and including an implementation science component. Dr. Kligler commented that the area is of great interest to the VA and dovetails well with its conversations on measurement of and outcomes related to well-being. If there is interest, he would be happy to introduce this development at the VA. Dr. Evans thought the concept was a great idea. However, from her experience, there would be challenges—the area is complex, and many of the components in studies (e.g., interventions and data) will also be complex. For any study, using physical activity as the primary outcome measure is costly and challenging. The funders must ensure an adequate budget.

The concept was cleared unanimously, with one abstention.

VII. Updates on the NCCIH Strategic Plan for 2021-2026

Ms. Mary Beth Kester, Director of the NCCIH Office of Policy, Planning and Evaluation (OPPE), explained that NCCIH now expects to post the draft of the new strategic plan in late 2020. There will be a public comment period in late 2020/early 2021, and the plan will be completed in spring 2021. Outreach to stakeholders took place in April to May 2020, with a Request for Information (RFI) and two online town halls. The Center received many comments through these channels, all of which have been shared with NCCIH leadership and program staff. During summer 2020, NCCIH staff updated the Center's high-priority topics for the plan and developed new topics, as follows:

- Complementary and integrative health interventions for pain management
- Mechanistic effects of mind and body approaches
- Impactful natural products research
- Disease prevention, health restoration, resilience, and health promotion
- Supporting impactful clinical trials of complementary and integrative health approaches
- Communications strategies and tools to enhance scientific literacy and understanding of clinical research
- Whole person research*
- Interoception science*
- Implementation science*
- Workforce development*

**New topic.*

NCCIH received 120 responses to the RFI, and more than 40 organizations were represented. Some strategic comments (listed below under major domains) the Center has received include:

<u>General</u>

- Mention "whole health" in the Center's mission statement.

<u>Fundamental Science and Methods Development</u>

- A need for biomarkers of complementary health modalities

- A need for rigorous experimental designs that take into account the holistic philosophy and practice found in many complementary and integrative disciplines.

Whole Person Research and Integration

- Integration of basic and translational research into whole person research
- Development of epidemiological skills focused on observational and pragmatic studies of complex practices measuring whole health over the long term
- Measure long-term outcomes using patient-reported outcomes
- Collect interventional and lifestyle data on health interventions
- "Manualize" diagnosis and treatment in whole system interventions
- Observational studies to determine how principles and systems are implemented in practice.

Health Promotion, Restoration, Resilience, Disease Prevention, and Symptom Management

- Advance interprofessional educational opportunities to health and disease prevention focused on whole person health.
- Age span approach to health promotion and prevention—starting in childhood and young adulthood
- Social determinants of health.

New Topics To Consider

- Identifying and working to end health disparities in access to complementary and integrative care
- How exposure to "green spaces" affects health
- How the interventions NCCIH supports factor into public health emergencies
- Engage with tribal health partners and with international groups
- Explore complex systems research methods
- Survey design research for practical, robust, multimodal assessment measures for outcomes
- Promote international research cooperation to integrate traditional knowledge and practices into Western medicine but with scientific rigor
- Conduct and support research on the disciplines and systems of complementary and integrative health
- Explicit interactions among modalities.

Specific Populations and Care Settings

- Children and adolescents – especially those already using complementary and integrative health modalities
- Perinatal period, including prepregnancy, during pregnancy, and postnatally
- Participatory medicine and health care
- Hard-to-reach populations (e.g., those in rural, criminal justice, or school settings; places of worship; communities; tribes; and the emergency department)
- Veterans.

Health Disparities

- Disparities in access to complementary and integrative health care
- Promote opportunities with Federally qualified health centers.

Workforce

- Promote diversity among underrepresented minorities
- Promote partnerships and collaborations between complementary and integrative health institutions and conventional medical schools
- More complementary and integrative health trained researchers
- Collaborative grants to community-based centers or full-time practitioners with institutional partners
- Increased training in research literacy
- Build complementary and integrative health research capacity.

Dr. Langevin described an updated concept of whole person health, which "helps individuals improve their health in multiple, interconnected domains." This terminology reflects valuable input from Council and public comments, which emphasized the psychosocial dimension of whole person health. The overall concept is more holistic than the traditional organ-focused concept of disease.

To avoid confusion that might result from the use of two similar terms, the concept of "whole health systems" has been revised to "multimodal interventions and systems," which could refer to conventional medicine (such as a multimodal cardiac rehabilitation program) and to complementary health systems (such as a multimodal therapeutic system that may use diagnostic and therapeutic frameworks different from those of conventional medicine). The Objectives from the old and new strategic plans are listed below, with the strategies (bullets below the Objectives) from the new plan.

Former Objective 1: Advance fundamental science and methods development

New Objective 1: Advance fundamental science and methods development for both basic and clinical research

- Advance basic mechanistic research relevant to dietary, psychological, and/or physical approaches to health care
- Develop methods, tools, and technologies to study complementary health diagnostic, treatment, and prevention modalities and systems
    - Test the reliability and validity of complementary diagnostic systems
    - Define treatment algorithms for complementary interventions and systems and establish their fidelity and reproducibility
    - Develop, refine, and test clinical research models and relevant statistical methods for testing multimodal interventions and systems
- Develop outcome measures to quantify health restoration and resilience
- Develop methods to conduct implementation science and effectiveness research on complementary and integrative health approaches.

Dr. Langevin noted that "systems" has been added to several strategies. The greater complexity involved in studying systems is addressed, including the need for more methods development. With regard to the first strategy, Dr. Langevin noted that the new terminology "dietary, psychological, and physical," is thought to be more inclusive than natural products/mind and body approaches and includes research on the basic mechanisms in the therapeutic categories. Basic mechanisms relevant to these categories are of interest, not just the mechanisms of modalities themselves.

Former Objective 2: Improve care for hard-to-manage symptoms

New Objective 2: Advance research on the whole person and on the integration of complementary and conventional care

- Promote basic and clinical research to study how physiological systems interact with each other
- Conduct clinical and translational research on multicomponent interventions, and study the impact of these interventions on multiple physiological systems (e.g., nervous system, gastrointestinal, immune) and domains (e.g., biological, psychological, social)
- Foster multimodal intervention research that focuses on improving health outcomes
- Conduct studies in "real world" settings, where interventions are routinely delivered, to test the integration of complementary approaches into health care.

Dr. Langevin explained that this objective is about integration. It introduces the concept of whole person research, which expands the concept of integrative health beyond integration of complementary and conventional care. Research on the integration of complementary and conventional care remains important, especially when studied using pragmatic methods in "real world settings."

Former Objective 3: Foster health promotion and disease prevention

New Objective 3: Foster research on health promotion and restoration, resilience, disease prevention, and symptom management

- Advance the understanding of mechanisms through which complementary and integrative health approaches affect health, resilience, and well-being
- Investigate the safety and efficacy of complementary health approaches and integrative treatment strategies for health promotion and restoration, resilience, disease prevention, and symptom management in diverse populations and settings
- Conduct rigorous clinical studies on the effectiveness, dissemination, and implementation of complementary health approaches into health care.

Dr. Langevin explained that this objective has not changed much, but multiple terms have been added, and it is situated on the health continuum. NCCIH wants to support methods development.

New Objective 4: Enhance the complementary and integrative health research workforce

- Support research training and career development opportunities to increase the diversity and number of well-trained scientists for conducting rigorous, cutting-edge research on complementary and integrative health practices
- Foster interdisciplinary collaborations and partnerships between complementary and integrative health institutions and research-intensive institutions.

Dr. Langevin noted that the former version has been changed slightly, based largely on input from the RFI and Council.

New Objective 5: Disseminate objective evidence-based information on complementary and integrative health interventions

- Disseminate evidence-based information on complementary and integrative health approaches.

- Develop methods and approaches to enhance public understanding of basic scientific concepts and biomedical research.

Dr. Langevin explained that this objective has not changed much, remains a very important part of the NCCIH mission, and was included in the statutory language establishing the Center.

Discussion: Dr. Kligler applauded the vision and said it is where his part of the field needs to be going. Dr. Anderson asked, regarding bullet 2 in New Objective 3, why the term "efficacy" was chosen, and does the item also include "effectiveness"? Dr. Langevin said "effectiveness" is in bullet 3 of this Objective, but maybe both should be grouped. Dr. Anderson added that each term has very specific implications for methodology. In Objective 4, Dr. Anderson would like to see opportunities for developing research skills targeted specifically to people trained—even for those who have a degree—in some form of complementary and integrative health. In the past, often awardees lacked this background; clinical experience is a piece often missing from research in this field.

Dr. Sherman expressed enthusiasm about the new language and concepts presented, commenting that the material is forward-thinking. Regarding Objective 4, she spoke about her experience and time mentoring people with or without complementary and integrative health backgrounds. The need for the research background to be a principal investigator is strong. Schools in complementary and integrative health do not offer a research orientation comparable to what academic medical or nursing programs can offer, and this is needed to move the field forward. She also recommended thinking about and including more about the state of the science (as an explicit goal) in channels such as NCCIH-sponsored lectures and publications. This would be helpful to educate the workforce, the wider medical world, and other NIH ICs, and to advance methodology.

Dr. Mudd commented on NCCIH's involvement in two programs to support individuals with complementary and integrative health backgrounds as part of the Center's work to support clinician scientists: (1) supplements to the existing K12 programs at medical centers, funded through the National Center for Advancing Translational Sciences as Clinical and Translational Science Awards (a relatively advanced training level) and (2) administrative supplements to current NCCIH grantees who want to provide research training experience to an additional person on their team who has a complementary and integrative health practitioner background (an early-stage training level). Dr. Edwards said that the first bullet under Objective 4 addresses increasing diversity in training and career development. NCCIH is also taking other steps to enhance diversity. Dr. Jean-Louis asked whether there will be a commensurate effort to bring in underrepresented minorities to T32s, R25s, and Ks.

Dr. Coghill supported the use of the word "psychological" in Objective 1. Having a "home" for psychological strategies in this field will be an asset and possibly also attract high-quality research. Dr. Evans lauded the strategic plan information and thought it would likely be robust, with many long-term effects. She agreed with Dr. Sherman that complementary and integrative health practitioners often need additional research training, but her experience as a mentor has shown her that all clinicians need it, including physicians. This could identify an opportunity for some additional cross-disciplinary training programs, which would also support more integration in the field if desired. She mentors people under both training programs Dr. Mudd discussed, called them great opportunities, and suggested NCCIH do more in letting people know they are available. She added, under Objective 1 and possibly elsewhere, could there be an opportunity relevant to integrating the social aspects of care? One aspect would be to

allow researchers to explore the therapeutic alliance between patients and providers. Dr. Langevin said that although that Objective is about basic mechanistic research, NCCIH will think about where "social" could be added.

Dr. Anderson recommended having opportunities for tuition support for people with doctoral degrees in complementary and integrative health to pursue a Ph.D., which would strengthen their ability to become principal investigators. Dr. Sonnenburg congratulated Dr. Langevin on the "inspiring" vision and said it should be embraced broadly across NIH. Dr. Hensel, a former recipient of a K23 award, commented that it is a great award but there is also a need for more foundational research education in multiple professions, including within complementary and integrative health. A high level of proficiency in complex research endeavors is required for success. Such an effort would also support engagement across professions in research projects. Dr. Langevin called the point well taken and said that creation of networks and partnerships would improve the prospects. Dr. Mehling supported having a social theme under Objective 1 and commented on the use of qualitative research.

Dr. Delitto said that attracting people to a clinician scientist career has become more difficult, especially among underrepresented minorities. Most people come in to be practitioners not academicians. Perhaps some innovative pipeline initiatives done very early upstream would be helpful, along with showing the positive aspects of life as an academician. Dr. Shinto asked whether NCCIH is planning to fund more T32 programs; Dr. Langevin replied that while this initiative and others are important, NCCIH is limited by the size of its resources. It seeks to make investments in its training portfolio using the most efficient and balanced approach.

Dr. White provided more details on NCCIH efforts in the topic areas of minority health and health disparities, and underrepresented minorities in research. Dr. White said the Center has been very proactive this year in this space and in thinking about ways to diversify the research workforce. For example, staff are members of relevant committees across NIH and therefore learn about initiatives to consider for sign-on. Thus, NCCIH thinks about how to leverage efforts across NIH, how to create opportunities specifically for the Center, and how to begin as early as possible in the pipeline to promote the pool of investigators who are diverse and well trained in complementary and integrative health research. She said NCCIH is also making strides in the space of minority health and health disparities. The Center has projects at the feasibility stage, mostly studying mind and body modalities.

Dr. Fishbein recommended embedding in the strategic plan, as an important endpoint of projects, how to get their findings across to end users. NCCIH is innovative and should develop a strategy for incorporating best principles and practices in communication science into its information—targeted to different audience segments and supporting best understanding and uptake. Dr. Jean-Louis asked whether principal investigators could be incentivized on grants to look for and bring in minority scientists; often it is the other way around. Dr. White said that this is also something NCCIH is thinking about—e.g., ways to make it easier for mentors to connect with eligible, diverse candidates, and possibly provision of trainings on how to develop a diverse investigator pool. Also, more potential trainees need to know about the Center's opportunities in this area.

VIII. Overview of Minority Health and Health Disparities Research

Dr. Eliseo Perez-Stable, Director of NIMHD, explained that his institute focuses on populations with health disparities—ethnic minorities, less privileged socioeconomic groups, underserved rural residents, and sexual gender minorities. Disparities are defined as health outcomes that are worse in these populations compared to a reference group. National mortality statistics show both advances and trends of concern. Mortality has increased among people age 25-44, most likely due to opioid crisis, as well as alcohol abuse and suicide, with different timing in different racial/ethnic groups. On the other hand, differences between African Americans and whites in death rates at age 65 and older have vanished.

Socioeconomic status shows a robust relationship with all-cause mortality, with mortality increasing as income decreases. Yet clinicians may not have information on the socioeconomic status of their patients. Many social determinants of health are in play, particularly race/ethnicity and socioeconomic status but also others, such as location of residence, health literacy and numeracy, and disability. Structural social determinants of health such as access to affordable housing, transportation, broadband internet, and healthy and affordable food may contribute to disparities.

A toolbox of measures on social determinants of health was launched earlier this year. Adoption of common data elements, to the extent possible, will facilitate data harmonization, and promote research on and understanding of disparities. Health disparities and minority health are complex in terms of both the domains of influence (biological, behavioral, physical/built environment, sociocultural environment, health care system) and levels of influence (individual, interpersonal, community, societal) on health outcomes. An increasing proportion of the literature is emphasizing the biological and physical/built environment domains, as well as the impact of positive and negative social interactions.

Unlike most ICs, which emphasize research project grants, NIMHD has substantial investments in research centers in minority institutions and centers of excellence. NIMHD has a variety of funding opportunity announcements (FOAs) in priority areas, such as social epigenomics and sleep disparities. A new FOA will focus on structural discrimination and racism. Work that NIMHD funds in NCCIH's themes accounted for a small but not insignificant part of NIMHD's budget (2.3 percent of extramural funding for 85 total projects in 2015-2020). The leading topics addressed in these grants were mental health, women's health, stress, mind and body, depression, exercise, mindfulness, and yoga.

National surveys from about 5 to 10 years ago showed that use of complementary and alternative practices by Hispanics/Latinos and African Americans was higher for arthritis and lower for mental distress, cancer, and chronic conditions. Home remedies and traditional healers are commonly used, especially for mental health issues and especially by Latinos and Asian Americans. The intervention studies on complementary approaches in minority populations have generally been feasibility studies in small samples, with limited outcomes. Access to clinicians and therapies is a problem for members of minority groups.

Numerous reports show a disproportionate burden of COVID-19 on racial and ethnic minority populations. Underlying causes relate to longstanding disparities and disadvantage, higher rates of comorbid conditions such as diabetes, higher proportions of public-facing jobs, and crowding in housing and communities. Three major NIH initiatives are addressing the impact of the COVID-19 pandemic on minority health and health disparities.

The NIH Loan Repayment Program (LRP) is an excellent way of getting diversity into the biomedical workforce. Analysis of the experience of NIMHD's LRP recipients showed that almost half were awarded some type of NIH grant, and other evidence indicates that LRP recipients are more likely to stay in research. NIHMD held its 2020 Health Disparities Research Institute virtually in August; the annual Institute is a week-long intensive training experience for early-stage investigators and senior postdoctoral trainees; it includes lectures by leading scientists in minority health and health disparities and consultations of the development of grant applications. A special issue of the *American Journal of Public Health* in 2019 featured new perspectives on minority health and health disparities research.

Discussion: In response to a question about shamanism from Dr. Harris, Dr. Pérez-Stable said it has a long history, far longer than that of science-based medicine. It is important that interventions of this type not be harmful, and they may have a role in health care. In response to a question from Dr. Haney on the apparent protective effect of Hispanic ethnicity on death rates, Dr. Pérez-Stable explained that population scientists think it may be related to the health benefits of being an immigrant. However, most U.S. Hispanics were born in the United States and have acquired many of the habits typical of the U.S. population. Latinos are of varied races; it's unclear whether those of African descent do less well in terms of health. Dr. Jean-Louis asked whether NCCIH and NIMHD could provide funding opportunities specifically targeted to scientists from underrepresented groups who are interested in integrative health. Dr. Pérez-Stable said this might be possible, but there are budgetary limitations. Dr. Langevin agreed and pointed out NCCIH's interest in collaboration.

IX. Public Comment

No public comments have been received as of 11/3/2020.

X. Adjournment

The meeting was adjourned at 3:20 p.m.

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

X _____

Partap Khalsa, D.C., Ph.D., D.A.B.C.O.
Executive Secretary
National Advisory Council for Complementary and Integrative Health

X Helene Langevin -S Digitally signed by Helene Langevin -S Date: 2020.11.10 14:07:50 -05'00'

Helene Langevin, M.D.
Chairperson
National Advisory Council for Complementary and Integrative Health