National Institute of Dental and Craniofacial Research

National Advisory Dental and Craniofacial Research Council

Minutes of Meeting
May 19, 2020

Video Teleconference

U.S. DEPARTMENT OF HEALTH
AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH

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NATIONAL INSTITUTES OF HEALTH
NATIONAL INSTITUTE OF DENTAL AND CRANIOFACIAL RESEARCH

MINUTES OF THE
NATIONAL ADVISORY DENTAL AND CRANIOFACIAL RESEARCH COUNCIL

May 19, 2020

The 224th meeting of the National Advisory Dental and Craniofacial Research Council (NADCRC) was convened on May 19, 2020, at 10:00 a.m., via video teleconference. The meeting was open to the public from 10:00 a.m. until 11:30 a.m.; it was followed by the closed session for Council business and consideration of grant applications from ___ p.m. until adjournment at ___ p.m. Dr. Lawrence Tabak presided as Chair.

OPEN SESSION

Members Present

Dr. Kathryn Marie Albers
Dr. Patricia Arola, *ex officio*
Dr. Shenda M. Baker
Dr. David J. Couper
Dr. Nisha J. D'Silva
Dr. Raul I. Garcia
Dr. Daniel W. McNeil
Dr. Phillip Messersmith
Dr. Lee A. Niswander
Dr. Sanjay Shete
Dr. Wenyuan Shi
Dr. Clark M. Stanford
Dr. Joel Strom

National Institute of Dental and Craniofacial Research

Dr. Lawrence Tabak, Acting Director
Dr. Jonathan Horsford, Acting Deputy Director
Dr. Alicia Dombroski, Executive Secretary, and Director, Division of Extramural Activities (DEA)
Ms. Kathleen Stephan, Office of the Director (OD), Associate Director for Management, Director, Office of Administrative Management (OAM)
Dr. Lillian Shum, Director, Division of Extramural Research (DER)
Dr. Matthew P. Hoffman, Scientific Director, Division of Intramural Research (DIR)
Dr. Janice S. Lee, Clinical Director, DIR
Dr. Denise Stredrick, OD, Acting Director, Office of Science Policy Analysis (OPSA)
Mr. Jeff Ventura, Director, Office of Communications and Health Education (OCHE)
Dr. Nisan Bhattacharya, DEA, Scientific Review Branch (SRB)

Dr. Latarsha Carithers, DEA, SRB
Dr. Preethi Chander, DER, Integrative Biology and Infectious Diseases Branch (IBIDB)
Ms. Jennifer Chi, Health Specialist
Ms. Alicia Chou, Health Specialist
Mr. Kevin Chu, Technical Support
Ms. Vicki Contie, OD, OCHE, Science Communication and Digital Outreach Branch (SCDOB)
Ms. Michelle Cortes, DER, IBIDB
Ms. Mary Daum, OD, OCHE, Health Information and Public Liaison Branch
Mr. Bret Dean, OD, Office of Administrative Management (OAM), Financial Management Branch (FMB)
Ms. Sharie Diggs
Mr. Jimmy Do, OD, OAM, Chief, FMB
Dr. Catherine Evans, OD, OCHE
Dr. Dena Fischer, DER, Center for Clinical Research (CCR)
Dr. Leslie Frieden, DEA, Research Training and Career Development Branch (RTCDB)
Dr. Nicole Garcia-Quijano, OD, OCHE
Dr. Jordan Gladman, OD, Special Scientific Assistant to NIH Prinicipal Deputy Director
Mr. Harry Grant
Dr. Margaret Grisius, DER, Director, Clinical Research and Epidemiology Program
Mr. Joel Guzman, DER, Translational Genomics Research Branch (TGRB)
Ms. Jeannine Helm, DER
Mr. Gabriel Hidalgo, DEA, GMB
Dr. Leila Khaki, DER, Behavioral & Social Sciences Research Program
Dr. Emir Khatipov, DER, Director, Data Science, Computational Biology, & Bioinformatics Program
Dr. Jimok Kim, DEA, SRB
Dr. Lynn King, DEA, Chief, Research Training & Career Development Branch
Dr. Nadya Lumelsky, DER, IBIDB
Ms. Jayne Lura-Brown, DER
Ms. Susan Macharia
Ms. Marsha Mason
Dr. Kevin McBryde, DER, Medical Officer
Ms. Susan Medve, DEA, GMB
Dr. Yun Mei, DEA, SRB
Dr. Allissa Meister, OD, Presidential Management Fellow
Dr. Amanda Melillo, DER, Acting Director, IBIDB
Ms. Amy Mhatre-Owens, OD, Office of Clinical Trials Operations and Management (OCTOM)
Ms. Yasamin Moghadam, DER, CCR
Mr. Ricky Moore, DEA, SRB
Ms. Mable Nee, OD, OAM, FMB
Mr. Paul Newgen, DEA, GMB
Ms. Anna Nicholson, OD, OCTOM
Ms. Lisa Peng, OD, Office of Information Technology (OIT)
Ms. Debbie Pettitt, DEA, GMB
Mr. John Prue, OD, Director, OIT
Mr. Ben Rassuli, OD, OIT

Dr. Elise Rice, DER, Behavioral and Social Sciences Research Program (BSSRB)
Dr. Melissa Riddle, DER, Director, BSSRB
Ms. Delores Robinson, DEA
Ms. Diana Rutberg, DEA, GMB
Mr. Mark Schaaf, OD, OIT
Dr. Yasaman Shirazi, DEA, SRB
Dr. Ashley Smith
Dr. Katie Stein, DER, Director, Developmental Biology & Genetics Program
Ms. Allisen Stewart, OD, OCHE
Dr. Shoba Thirumangalathu, DEA
Mr. Joseph Tiano, OD, OSPA
Dr. Yolanda Vallejo, DER, Director, Neuroscience of Orofacial Pain and Temporomandibular Disorders Program
Dr. Jessica Walrath, OD, OSPA
Dr. Jason Wan, DER, IBIDB
Dr. Chiayeng Wang, DER, IBIDB
Dr. Lu Wang, DER, Chief, TGRB
Dr. Darien Weatherspoon, DER, CCR
Dr. Marian Young, DIR

I. WELCOME AND INTRODUCTIONS

Dr. Lawrence Tabak, Acting Director, NIDCR, called the open session of the 224th Advisory Council meeting to order. Dr. Tabak noted the unique circumstances of the COVID-19 pandemic which led the Advisory Council to hold its first virtual council meeting. The meeting was abbreviated in order to minimize disruption to attendees' other professional and personal obligations. Dr. Tabak thanked Council members and NIDCR staff for taking the time to attend the meeting. Dr. Alicia Dombroski, Executive Secretary to the Advisory Council, noted that the Council would be accepting questions and comments from the public via email (NIDCRcouncilmail@nidcr.nih.gov) until June 9. She thanked Council members Shenda Baker, Phillip Messersmith, and Sanjay Shete for agreeing to extend their term through this meeting.

II. APPROVAL OF MINUTES FROM PREVIOUS MEETING

Dr. Dombroski invited the Council to consider and approve the minutes of the January 29, 2020, Council meeting. The Council unanimously approved the minutes.

III. REPORT OF THE DIRECTOR, NIDCR

Dr. Tabak's written May 202 Director's Report to the Council was provided to the Council members and is available on the NIDCR website (http://www.nidcr.nih.gov). Dr. Tabak briefly updated the Council on NIDCR's search for its next permanent Director. The search is

proceeding well and Dr. Tabak thanked the search committee and NIDRC for their efforts during this process. A number of outstanding candidates have been identified and NIDCR's recommendations will soon be forwarded to NIH Director Francis Collins for final decision.

The Director's Report includes an update on COVID-19 and the NIH response, a brief NIDCR budget overview, NIDCR news update, and a personnel update. Dr. Tabak asked Dr. Jonathan Horsford, Acting Deputy Director, to present the NIDCR-specific portions of the report.

COVID-19 Update

Dr. Tabak began by presenting the most recent case data on the pandemic. According the John Hopkins University Coronavirus Resource Center, as of May 18th, 2020, a total of 4,748,356 confirmed cases had been reported globally, of which 1,490,195 were in the United States. A total of 315,822 deaths had been reported globally and the virus was present in 188 countries. The pandemic has caused a sudden and dramatic shift in how public health institutions have been focusing their resources and research around the world, and NIH has been no exception.

NIH COVID-19 Initiatives. NIH's first priority was to minimize exposure and infection among its workforce. In concert with the rest of the federal government, NIH has implemented a large scale telework program and transitioned non-mission-critical laboratory operations (i.e., not related to the COVID-19 response) to minimal maintenance. Dr. Tabak highlighted the ability of NIH as whole to pivot to face emerging crises; several hundred NIH labs have now switched to SARS-CoV-2/COVID-19-related activities. All staff on campus are required to wear face masks and, in addition, all staff and visitors to the Clinical Center must be screened before entry. NIH is also planning for a gradual return to the physical workplace. Many lifesaving clinical activities have been put on hold during the pandemic and NIH hopes to gradually increase the Clinical Center's patient census as it becomes safe and feasible to do so.

Dr. Tabak provided an overview of the COVID-19 supplemental funding received by NIH since the pandemic began, including $836M in the Coronavirus Preparedness and Response Supplemental Appropriations Act, $945M from the Coronavirus Aid, Relief, and Economic Security (CARES) Act, and $1.8B from the Paycheck Protection Program and Health Care Enhancement Act. Over $1.5B of this funding has gone to NIAID with lesser amounts going to other ICs such as NHLBI, NIEHS, NIBIB, among others. NIAID is working with the biotech company Moderna on early clinical trials for an mRNA vaccine candidate. A large portion of this funding has also gone towards the development of testing mechanisms.

One of NIH's major initiatives has been the Accelerating COVID-19 Therapeutic Interventions and Vaccine (ACTIV) public-private partnership comprised of 18 pharmaceutical companies, federal health agencies, and the European Medicines Agency, under the auspices of the Foundation for the NIH (FNIH). The goal is to provide a framework for making recommendations to the FDA on preclinical guidelines, optimal trial design, and approval and consideration prioritization of potential interventions and vaccines. The initiative's executive committee is co-chaired by Director Collins and Dr. Paul Stoffels, the Chief Scientific Officer of Johnson & Johnson.

Another initiative supported by the supplemental appropriations is the Rapid Acceleration of Diagnostics (RADx) technology initiative. This $500M program is a public call to the scientific and engineering communities to submit proposals to develop rapid, easy-to-use testing technologies for SARS-CoV-2. As of the day's meeting, NIH has received over 1,300 proposals in two weeks. These proposals are quickly reviewed and the most promising ideas are selected for further funding, with the ultimate goal of regulatory approval, full scale-up, and deployment by the summer or fall.

Dr. Tabak briefly reviewed NIH trials and studies related to the pandemic. Preliminary results of a clinical trial involving the drug remdesivir indicate that it can accelerate recovery from advanced COVID-19. Further trials are underway looking at remdesivir plus anti-inflammatory drug baricitinib & hydroxychloroquine plus the antibiotic azithromycin as potential treatments. As previously mentioned, NIAID's Vaccine Research Center is collaborating with Moderna to develop mRNA vaccine and this candidate was recently approved to enter Phase 2 trials. The Human Epidemiology and Response to SARS-CoV-2 (HEROS) stud will look to determine the percentage of children infected with SARS-CoV-2 who develop symptoms, and the influence of pre-existing conditions such as asthma. Examples of other studies are one which is working to quantify undiagnosed infections using samples of 10,000 volunteers and a study examining the impact of COVID-19 on rare disease communities.

Dr. Tabak updated the Council on the status of extramural research at NIH. NIH continued to process applications and make awards and is conducting peer review meetings virtually. NIH is deeply concerned about the effects of the COVID-19 public health emergency on NIH research and the biomedical enterprise, and is working diligently to provide funding opportunities to support COVID-19 research.

NIDCR COVID-19 Initiatives. Dr. Horsford updated the Council on NIDCR's activities in response to the COVID-19 pandemic. NIDCR has funded a number of intramural research studies, including a Clinical Center study looking at transmissibility and viral load of SARS-CoV-2 through oral secretions, speech, and efficacy of masks. This study is also noteworthy because it involves asymptomatic subjects. Other study topics include quantitative antibody testing of COVID-19 infection, O-glycosylation of the SARS-CoV-2 spike protein, and mechanisms of SARS-CoV-2 protease antagonism of immunity.

Dr. Horsford also discussed NIDCR extramural COVID-19 funding opportunities. NIDCR has released several Notices of Special Interest (NOSIs) to catalyze high-priority COVID-19 oral health research. The NOSIs are supplements to existing grants with the goal of funding immediate and high impact research on COVID-19 transmission, pathogenesis, diagnosis, and the protection of dental patients and personnel. Dr. Hosford encouraged Council members to spread the word about the NOSIs to their respective communities. The applications for the NOSIs are due June 1st.

NIDCR has held a series of stakeholder communication activities to help shape and facilitate the dental and craniofacial research community's response to the pandemic. On April 13th, NIDCR participated in a webinar hosted by the American Association for Dental Research (AADR) to update stakeholders on key NIH and NIDCR COVID-19-related news and initiatives. On April 27th, NIDCR hosted a meeting with external stakeholders to discuss research and training gaps directly

impacting the practice of dentistry and dental schools. NIDCR has also participated in several calls led by the HHS Chief Dental Officer, RADM Tim Ricks, for key federal and private stakeholder groups to discuss the impact of COVID-19 on oral health care in America.

NIDCR Budget Update. Dr. Horsford briefly updated the Advisory Council on upcoming budget events. The 2021 budget process has been delayed due to the COVID-19 pandemic. The President released his budget request in February and the House of Representatives held an NIH budget hearing in March. However, the Senate has postponed its hearing indefinitely. If a 2021 budget is not passed by the end of September, NIH will likely have to operate under continuing resolution. Dr. Horsford hopes to have more news to relay by the Council's meeting in September.

National Academies Consensus Study on Temporomandibular Disorders. Dr. Horsford updated the Council on the consensus study, "Temporomandibular Disorders: Priorities for Research and Care," which was released in March. As part of its next steps in light of the study, NIDCR has formed a TMJD Multi-Council Working Group has been formed, co-chaired by Dr. Clark Stanford and Christin Veasley (Chronic Pain Research Alliance). The participation of other ICs will be vital in acknowledging the cross-disciplinary nature of TMJD research and care. The ultimate goal of the working group will be to review the recommendations of the consensus study and develop research priorities for NIDCR and NIH as a whole. The working group plans to report its findings to the NIDCR Advisory Council in January 2021.

Staff Update. Dr. Horsford welcomed two new staff members to the Institute. Jeff Ventura is joining as Director of the Office of Communications and Health Education. Dr. Amanda Melillo is returning to NIDCR as the Acting Director of the Integrative Biology and Infectious Diseases Branch in the Division of Extramural Research.

Discussion

Dr. Shi asked how NIDCR was leveraging its expertise as part of the COVID-19 response given the central role saliva seems to play in the spread of the virus. Dr. Tabak acknowledged that the role of saliva is well-known by the research community at large. There is already an FDA-approved salivary test and over half of the proposals submitted to the RADx project utilize saliva or oral fluid. NIDCR is working hard to support its extramural colleagues through the NOSIs and will continue to seek out additional funding to bolster this effort.

Dr. Tabak asked Dr. Stanford to comment on the TMJD consensus study and the role of the working group. Due to their multi-system nature and short- and long-term effects, TMJD and its related disorders are some of the most complex research issues in the field. Bringing in the expertise of other ICs and other stakeholders is, therefore, very important. Dr. Stanford looks forward to beginning the work.

Dr. Messersmith raised the topic of PPE shortages and potential impacts on the dentistry community. Dr. Tabak said that is one area NIDCR is well-positioned to study, and an important issue given the nature of clinical dental care. Dr. Stanford said this has been a topic of discussion in the dental school community for weeks and has spurred research on aerosols and infectivity. Until those processes are fully understood for this virus, PPE usage will only be a form of mitigation. He

added that PPE is generally seen as the last line of defense, after engineering and administrative controls, and in many ways the least effective. In addition, PPE is highly unpleasant for practitioners and makes their job more difficult. Dr. Stanford also emphasized the impact of COVID-19 on vulnerable communities and its connection to the social determinants of health. Dr. Tabak acknowledged the question of aerosol droplets and infectivity and asked Dr. Janice Lee, NIDCR Clinical Director, to address this topic. Dr. Lee said NIDCR has an intramural study underway looking at the viral load of various types of saliva and viral transmissibility of saliva through speech. Dr. Strom gave the perspective of a practitioner in the field. Securing PPE has been difficult, but vital given the close proximities inherent in dental care. Utilizing dual masks to allow for reuse of N95s can make it difficult for practitioners to breath, as Dr. Strom attested to from personal experience as an asthma sufferer. Independent dentists also have to worry about financial impacts caused by the pandemic, which can be emotionally draining.

IV. CONCEPT CLEARANCE

Dr. Dombroski, Director, DEA, stated that NIDCR is required to present the purpose, scope, and objectives of proposed concepts for research initiatives to the Council in a public forum for the Council's review, discussion, and approval and for public comment. Concepts approved by the Council are published on the NIDCR website, and proposed concepts are posted to https://nidcr2030ideascale.com for public comment. The NIDCR staff presented two concepts, and designated Council members led the discussion, as summarized below.

NIDCR Award for Sustaining Outstanding Achievement in Research (SOAR)

Dr. Lillian Shum, Director, Division of Extramural Research, presented the concept for renewal. The concept was originally approved in 2015, for five years, and has issued one RFA per year since approval. The goals of the concept are: (1) to provide longer-term support to NIDCR-funded investigators who are in their mid-career stage and have outstanding records of research productivity, mentorship, and professional service to the research community; and (2) to propel investigators along their career trajectory and allow them to embark on ambitious longer-term projects of extraordinary potential under the mission of NIDCR. Dr. Shum reviewed the eligibility, format, length, and budget features and requirements. An applicant must have at least one active NIDCR R01 (or equivalent) and 5 years of continuous NIDCR support as a PI. The grant provides for up to 8 years of support and $650,000 per year of direct costs. Dr. Shum briefly discussed the application review process and presented an overview of past funded investigators. Funded investigators have researched a broad array of topics with a 50-50 gender balance. Dr. Shum also reviewed SOAR grantee publication data, which show a noted increase in publications post-award. Qualitatively, grantees have reported accelerated progress, ability to shift to new ideas and higher risk research, broadened collaborative networks, increased ability to recruit research staff, and promotion to leadership roles.

The Council's lead discussants were Dr. Phillip Messersmith and Dr. Lee Niswander. Dr. Messersmith expressed strong support for this program, particularly how it grants PIs the freedom to take risks, focus on science, and expand collaborative networks. Grants such as these are very important for mid-career investigators and are a win-win for the grantees and NIDCR.

The funding is generous and grantees have shown strong productivity that increases over time. Dr. Niswander concurred with Dr. Messersmith's praise. She noted that Dr. Niswander had asked that the concept clarify that 51% of time must be spent on research and that more quantitative metrics be developed other than publications.

The Council unanimously approved the concept.

Deconstructing TMJD Classifiers at the Single Cell Level

Dr. Yolanda Vallejo, Director, Neuroscience of Orofacial Pain & Temporomandibular Disorders Program, presented the concept. TMJDs are a heterogeneous and poorly understood group of conditions affecting the muscles of mastication and the temporomandibular joints. The absence of a firm mechanistic understanding has precluded stratification of patients and identification of clear etiological targets for the development of effective, evidence-based treatments. Progress has also been hampered by the lack of integrated analyses combining findings from multiple cells and tissues. The goal of the concept is to catalyze research focused on deciphering the cellular and molecular mechanisms underpinning TMJD pain and tissue dysfunction, resolution, and homeostasis using single-cell omics approaches that will lead to development of novel strategies to diagnose, manage, and treat TMJDs. This goal is in alignment with the recommendations of the National Academies study on TMJD discussed above. Expected outcomes from the program are identification of cell populations and their effector pathways in TMJD target tissue as molecular disease classifiers allowing for patient stratification; identification of diagnostic, prognostic, and/or predictive biomarkers; and/or identification of novel therapeutic targets. The program hopes to facilitate studies utilizing large-scale approaches in genomics, epigenetics, transcriptomics, immune profiling, metabolomics, proteomics and immunophenotyping. In addition, Recent technological advances in microfluidics, machine learning, and gene expression profiling have led to advances in single cell biology that are poised to enable significant advances. Dr. Vallejo discussed some potential areas of interest and data sharing requirements for participation in the program. A secondary goal of the initiative will be the creation of a public TMJD research resource accessible to the biomedical research community.

The Council's lead discussants were Dr. Sanjay Shete, Dr. Kathryn Albers, and Dr. Clark Stanford. Dr. Shete expressed support for the initiative, particularly the genetic and omics aspects and the strong data sharing requirements. Council members had encouraged NIDCR to focus on human studies rather than model organisms. Dr. Albers lauded the scope of the initiative and found it to be timely and important research. She specifically praised the inclusion of non-neuronal cells as a target for the research. Dr. Stanford also supported the concept but noted that bringing all the data together at a systems level will be a challenge. He encouraged NIDCR to choose a funding mechanism that encourages transdisciplinary research. A successful model here could serve as a prototype for the biomedical research community as a whole. Dr. McNeil asked how the cellular level approach fits with the National Academies' focus on the patient and systems levels. Dr. Vallejo said one of the overarching goals is to connect with existing trans-NIH and public-private projects, such as the Accelerating Medicines Partnership (AMP), which are also producing large omics databases. Dr. Tabak added that he also sees this concept as

building on and complementing NIDCR's previous work in the OPPERA-I and OPPERA-II studies and other ongoing patient-level studies.

The Council unanimously approved the concept.

CLOSED SESSION

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

VII. REVIEW OF APPLICATIONS

VIII. ADJOURNMENT

CERTIFICATION

I hereby certify that the foregoing minutes are accurate and complete.

/Alicia Dombroski/

_____	_____
Dr. Lawrence A. Tabak	Dr. Alicia Dombroski
Acting Chairperson	Executive Secretary
National Advisory Dental and Craniofacial Research Council	National Advisory Dental and Craniofacial Research Council

ATTACHMENTS

I. Roster of Council Members
II. Table of Council Actions