

Director's Report to the National Advisory Dental and Craniofacial Research Council

January 2020

ACTIVITIES OF THE NIDCR DIRECTOR AND DEPUTY DIRECTOR

Since the last meeting of the National Advisory Dental and Craniofacial Research Council on September 9, 2019, there have been several leadership transitions. Martha J. Somerman, DDS, PhD, [retired from her position as NIDCR director](#) on December 31. NIH Director Francis S. Collins, MD, PhD, named NIH Principal Deputy Director Lawrence A. Tabak, DDS, PhD, the acting director of NIDCR during the national search for the institute's next director. Dr. Tabak's tenure began January 1, 2020. Jonathan Horsford, PhD, is serving as acting deputy director.

Among Dr. Somerman's notable activities during the last four months of 2019 are the following:

Dr. Somerman provided introductory remarks at the workshop, "Study of Mineralized Tissues as a Paradigm for Integration of Dental, Oral, and Craniofacial Diseases with Other Physiological Systems," held September 11-12 in Bethesda, Md.

Dr. Somerman presented the keynote lecture titled "Looking to the Future: Dental, Oral and Craniofacial Research" at the Charles Schachtele Memorial Symposium in Oral Biology at the University of Minnesota Oral Biology Graduate Program's 50th anniversary on September 13 in Minneapolis.

Dr. Somerman attended the International Summit in Human Genetics and Genomics, gave a tour of her lab, and discussed her research with the participants of the summit on September 16 on the NIH campus in Bethesda, Md.

Dr. Somerman met with David Cella, PhD, principal investigator of *HealthMeasures*, and Ashley Wilder Smith, PhD, MPH, NIH chief science officer of *HealthMeasures*, to discuss current initiatives and activities and future opportunities for the NIH-funded Patient-Reported Outcome Efforts initiative on September 17 on the NIH campus in Bethesda, Md.

Dr. Somerman met with members of the US House Appropriations Labor, Health and Human Services, Education, and Related Agencies Subcommittee to discuss new and ongoing research initiatives on September 17 on the NIH campus in Bethesda, Md. Dr. Somerman highlighted NIDCR-supported science, including a study to design a sensory-adapted dental environment for special needs children, and efforts to reduce opioid-prescribing after dental procedures.

Dr. Somerman gave a presentation titled "NIDCR: Advancing Dental, Oral and Craniofacial Research" to the US Public Health Service Dental Professional Advisory Committee on September 27 on the NIH campus in Bethesda, Md.

Dr. Somerman gave a Process of Discovery Lecture titled "One Researcher's Defining Moment: Phosphate" to the NIH Medical Research Scholars Class of 2019 on October 7 on the NIH campus in Bethesda, Md.

Dr. Somerman met with Debra Tucci, MD, MS, MBA, the new director of the National Institute on Deafness and Communication Disorders, to discuss current and future areas of collaboration on October 15 on the NIH campus in Bethesda, Md.

Dr. Somerman met with Karen West, DMD, MPH, president and CEO of the American Dental Education Association, to discuss oral health in the context of overall health and ways to enhance communication among dental healthcare providers on October 15 on the NIH campus in Bethesda, Md.

Dr. Somerman welcomed James Taylor, DMD, MS, chief dental officer of Canada, and RADM Tim Ricks, DMD, MPH, chief dental officer appointed by the US Surgeon General's Office, for a visit and discussion with NIDCR staff on October 17 on the NIH campus in Bethesda, Md. Dr. Somerman and Dr. Horsford provided background information on NIDCR research in a presentation titled "NIDCR: Advancing Dental, Oral, and Craniofacial Research."

Dr. Somerman attended the 13th International Conference on the Chemistry and Biology of Mineralized Tissues October 2023 in Montebello, Quebec, Canada. Dr. Somerman gave a presentation titled "Research Advancing Health: Opportunities at NIDCR/NIH" on October 22 to highlight extramural research funding and training opportunities at NIDCR.

Dr. Somerman and Dr. Horsford participated in an American Association for Dental Research Government Affairs Committee meeting in Alexandria, Va., and provided a presentation about NIH and NIDCR updates on October 28.

Dr. Somerman presented the keynote lecture titled "NIDCR: Advancing Dental, Oral, and Craniofacial Research" for the Hinman Student Research Symposium at the University of Tennessee College of Dentistry on October 28 in Memphis.

Dr. Somerman was a presenter at the opening general session for the American Academy of Periodontology annual meeting; she gave a talk titled "NIDCR: Advancing Oral Health Research and Innovation" on October 28 in Chicago.

Dr. Somerman filmed a video to recruit new practitioners for the National Dental Practice-Based Research Network website on November 4.

Dr. Somerman attended the Regenerative Medicine Forum workshop on "Exploring Novel Clinical Trial Designs for Gene-Based Therapies" on November 14 in Washington, DC.

Dr. Somerman gave the opening remarks for the NIDCR Grand Rounds, "Celebrating 35 Years of Sjögren's Syndrome Research at the NIH" on November 15 on the NIH campus in Bethesda, Md.

Drs. Somerman and Horsford led the NIDCR executive staff in a full-day retreat on November 19 on the NIH campus in Bethesda, Md.

Dr. Somerman participated in the IC Directors' Leadership Forum on November 20-21 on the NIH campus in Bethesda, Md.

Dr. Somerman attended the first NIH-Canadian Institutes of Health Research Symposium on November 22 on the NIH campus in Bethesda, Md.

BUDGET UPDATE

Updated budget information for FY 2019 and 2020 will be presented at the council meeting.

HHS/NIH UPDATE

[NIH Awards \\$945 Million to Tackle the Opioid Crisis](#)

Funding totaling \$945 million has been awarded in fiscal year 2019 across 41 states for research projects supported through the NIH Helping to End Addiction Long-term Initiative. Nearly \$24.4 million of NIH HEAL Initiative funds have been directed towards NIDCR-related research projects this year. The Initiative aims to improve treatments for chronic pain, curb the rates of opioid use disorder and overdose, and achieve long-term recovery from opioid addiction by leveraging expertise from NIH institutes and centers. A portion of these funds will go to projects addressing chronic orofacial pain, pain management following dental extractions, and the use of ultrasound for head and neck cancer pain.

[HHS Publishes Guide for Tapering of Long-Term Opioid Use](#)

The recently released *HHS Guide for Clinicians on the Appropriate Dosage Reduction or Discontinuation of Long-Term Opioid Analgesics* provides advice for clinicians who are contemplating or initiating a reduction or discontinuation of long-term opioid therapy for chronic pain. The guide highlights the risks of rapid tapering, outlines recommended tapering procedures, and addresses management of opioid withdrawal.

[FDA Finalizes Enforcement Policy on E-Cigarettes Favored by Teens](#)

The US Food and Drug Administration announced its new policy on e-cigarettes on January 2. The agency will prioritize enforcement against certain unauthorized flavored, cartridge-based e-cigarettes (except for tobacco and menthol products) that appeal to minors, including fruit and mint flavors. The move is in response to what FDA called “epidemic levels of youth use of e-cigarettes.” [E-cigarette use has more than doubled among teens since 2017](#), according to data from the NIH-funded 2019 Monitoring the Future survey. The results, which were published in the *New England Journal of Medicine*, indicate that, in 2019, more than 25% of grade 12 students had vaped in the previous 30 days; for grade 10 students, the figure was 20%. The FDA and the CDC saw [similar trends](#) in the 2019 National Youth Tobacco Survey

[NIH to Create Meaningful Reforms to End Sexual Harassment in Science](#)

Ending sexual harassment in science is a major priority for NIH leadership. In February 2019, NIH established the Changing the Culture to End Sexual Harassment working group within the Advisory Committee to the Director. In December, the working group delivered its report to the committee. NIH Director Francis S. Collins, MD, PhD, announced on December 12 that NIH will work with other federal agencies, such as the HHS Office for Civil Rights, to explore options for implementing the recommendations.

[Study Examines NIH Funding Gap for Black Scientists](#)

A recent study conducted by NIH researchers and published in *Science Advances* demonstrated that black applicants were more likely than white applicants to propose research topics that were funded at a lower rate, including disparities research and patient-focused interventions. Research topic choice, which had not previously been evaluated, accounted for more than 20% of the funding gap for black scientists applying for R01 grants. NIH is actively working to identify strategies to address this issue and narrow this gap.

[NIH Boosts Funding for Down Syndrome Research](#)

Approximately \$35 million in new NIH grants were awarded in fiscal year 2019 for research on Down syndrome through the Investigations of Co-occurring Conditions Across the Lifespan to Understand Down Syndrome (INCLUDE) initiative. These awards bolster total Down syndrome research funding in FY 2019 to an estimated \$77 million. The latest round of INCLUDE funding will support research on chromosome 21’s role in brain development, sleep apnea in children with Down syndrome, immune dysregulation in Down syndrome, and other topics.

[HRSA Expands Access to Oral Health Care](#)

The Health Resources and Services Administration awarded over \$85 million to 298 health centers to expand their oral health service by improving infrastructure. The awards of up to \$300,000 will support efforts to modernize existing facilities, install dental and radiology equipment, conduct training and consultation to increase oral health integration, and purchase mobile dental units. In 2018, HRSA-funded health centers served more than 6.4 million dental patients.

[NIH and the Gates Foundation Team up on Sickle Cell and HIV](#)

In October, NIH launched a new collaboration with the Bill and Melinda Gates Foundation to invest in the development of affordable, gene-based cures for sickle cell disease and HIV. Over the next four years, each partner will invest at least \$100 million with the goal of finding affordable cures that could be made globally available, including in low-resource settings where these diseases have a significant impact. Dr. Collins announced the collaboration at the annual Grand Challenges meeting in Ethiopia on October 28.

[Exposure to HIV Drug in the Womb May Increase Risk of Microcephaly, Developmental Delays in Children](#)

Children born to women on HIV therapy containing the drug efavirenz were two to two-and-a-half times more likely to have microcephaly, or small head size, compared with children born to women on other retroviral regimens, according to an analysis funded by NIH. The children with microcephaly also had a higher risk for developmental delays, compared with children whose heads were a normal size. The study was conducted by Paige L. Williams, PhD, of the Harvard T.H. Chan School of Public Health, and colleagues.

[Selection of Joshua Denny as Chief Executive Officer of *All of Us*](#)

On December 11, Dr. Collins announced the selection of Joshua Denny, MD, MS, as chief executive officer of the *All of Us* Research Program. As CEO, Dr. Denny will oversee NIH's efforts to build one of the largest and most comprehensive precision medicine research platforms in the world in partnership with a diverse network of awardees and participants. Dr. Denny comes to NIH from Nashville, Tenn., where he was a professor in the departments of Biomedical Informatics and Medicine at Vanderbilt University Medical Center. He has been involved with *All of Us* since its inception.

[NIH Funds New *All of Us* Research Program Genome Center](#)

The National Center for Advancing Translational Sciences has awarded \$7 million to HudsonAlpha Institute for Biotechnology in Huntsville, Ala., to evaluate leading-edge DNA sequencing technologies for the *All of Us* Research Program, which is an NIH initiative to obtain health data on a million or more Americans. HudsonAlpha will use long-read whole genome sequencing to generate genetic data on about 6,000 samples from participants of different backgrounds. The technique exposes genetic variations that may otherwise go undetected. The data will be an addition to the one million whole genome sequences the program already plans to deliver over the next several years.

[Ned Sharpless Returns to NCI](#)

Norman E. "Ned" Sharpless, MD, has returned to the National Cancer Institute to continue as director following a temporary assignment as acting commissioner of the FDA. Sharpless, a leading oncologist who became director of NCI in October 2017, served as FDA acting commissioner from April 5, 2019, to November 1, 2019, while the administration sought a permanent candidate.

[Susan K. Gregurick Named NIH's Associate Director for Data Science](#)

In September, Susan K. Gregurick, PhD, was named NIH's associate director for data science. She will direct the NIH Office of Data Science Strategy and help lead NIH's efforts with other organizations engaged in scientific data generation, management, and analysis. Since 2013, Dr. Gregurick has been director of the Division of Biophysics, Biomedical Technology, and Computational Biosciences in the National Institute of General Medical Sciences and brings experience in computational biology, high performance computing, and bioinformatics to the new position. Dr. Gregurick will be speaking at NIDCR's January 2020 Council as part of a session focused on data science.

NIDCR UPDATE

Institute News

[NIDCR Grand Rounds: Celebrating 35 Years of Sjögren's Syndrome Research](#)

On November 15, on the NIH campus in Bethesda, Md., NIDCR hosted a special grand rounds to mark 35 years since the establishment of the NIDCR Sjögren's Syndrome Clinic in the NIH Clinical Center, which was founded to evaluate people with salivary dysfunction to better understand the condition and find more effective treatments. Today, clinical studies on dry mouth disorders and Sjögren's syndrome continue in the NIDCR Dental Clinic in the Clinical Center. NIDCR Director Martha J. Somerman, DDS, PhD, introduced the first speaker, NIDCR scientist emeritus Bruce Baum, PhD, who helped spearhead the Sjögren's Syndrome Clinic. "His pioneering work in the field," said Dr. Somerman, "including the first-ever salivary gland gene therapy tested in humans, helped build the groundwork for our current intramural and extramural research to understand and treat Sjögren's syndrome." Dr. Baum was followed by other NIDCR-supported researchers and patient advocacy representatives, who described their work to advance Sjögren's syndrome research and awareness,

National Dental PBRN Enters Next Phase

NIDCR has renewed its support for the National Dental Practice-Based Research Network with a third cycle of funding. The network, established in 2005, fosters investigative partnerships between academic clinical scientists and practicing clinicians to address questions of everyday relevance to dental practitioners. Studies are conducted in dental offices with consenting patients, and the network translates evidence-based findings into improved clinical practice. This cycle of the National Dental PBRN will build on the momentum of the previous 14 years of NIDCR investment. “By conducting research in the real-world setting of a dental practice, the National Dental PBRN aims to get advances in care to dental patients sooner,” said Dr. Somerman.

Advances in Dental Research Publishes Precision Oral Health Proceedings

Proceedings from the two-day symposium, Advances in Precision Oral Health Research, held at NIH and sponsored by the American Association for Dental Research, were published in the November issue of [*Advances in Dental Research*](#), an e-supplement to the *Journal of Dental Research*. Topics included precision oral health research, reengineering the oral microbiome for caries management, the molecular basis of dental caries and periodontitis, diagnostic and therapeutic precision in head and neck cancer, and rehabilitation of patients sustaining orofacial injuries. Dr. Somerman spoke about the importance of bringing oral health into the context of overall health.

Mineralized Tissues as a Paradigm for Integration of Dental, Oral and Craniofacial Diseases with Other Physiological Systems

Jason Wan, PhD, director of the Mineralized Tissues Physiology Program, Integrative Biology and Infectious Diseases Branch in NIDCR’s Division of Extramural Research, organized a workshop, “Study of Mineralized Tissues as a Paradigm for Integration of Dental, Oral and Craniofacial (DOC) Diseases with Other Physiological Systems,” held September 11-12 in Bethesda, Md. The workshop was cosponsored by the National Center for Advancing Translational Science. A group of 24 panelists, which included clinicians, veterinarians, basic researchers, and patient advocates, discussed how to best promote the cross-fertilization between DOC and non-DOC-disease studies within the context of whole-body homeostasis.

ADEA Visits NIDCR

The American Dental Education Association Leadership Institute Class of 2020 fellows visited NIDCR on September 16 at the NIH campus in Bethesda, Md. The fellows listened to presentations on intramural and extramural research, training and career development programs, and visited an intramural laboratory and the NIH Dental Clinic to learn about precision treatment in dentistry.

Personnel Update

Dena Fischer, DDS, MSD, MS, is now director of the Center for Clinical Research in NIDCR’s Division of Extramural Research and director of the Clinical Trials and Practice-Based Research Program. She also represents NIDCR on trans-NIH working groups related to women’s health, acute pain management, new craniofacial imaging/surgical planning techniques, and clinical research/trials operations and policies.

Yeowon Kim, MD, MHS, has joined the Office of the Clinical Director in the Division of Intramural Research as deputy clinical director. Dr. Kim received her MD from the University of Pennsylvania, and her MHS from Johns Hopkins Bloomberg School of Public Health. Prior to coming to NIDCR, she was an FDA medical officer.

Denise Stredrick, PhD, has been named acting director of the Office of Science Policy and Analysis. Dr. Stredrick, who joined NIDCR in September 2019, earned her doctoral degree in pharmacology from Wake Forest University. Her previous experience includes positions in the NIH Office of Research on Women’s Health and the Office of Disease Prevention, and at NCI.

Abner Louis Notkins, MD, chief of the Laboratory of Sensory Biology in the Division of Intramural Research, retired on December 31 after 60 years as a research-physician at NIH, including 10 years as NIDCR’s scientific director.

Pamela G. Robey, PhD, chief of the Skeletal Biology Section in the Division of Intramural Research, received the Louis V. Avioli Founders award for fundamental contributions to bone and mineral basic research at the 2019 meeting of the American Society for Bone and Mineral Research.

Kelly Ten Hagen, PhD, in the Division of Intramural Research, was elected an American Association for the Advancement of Science Fellow in December.

Yolanda Vallejo, PhD, director of the Neuroscience of Orofacial Pain and Temporomandibular Disorders Program, Integrative Biology and Infectious Diseases Branch in NIDCR's Division of Extramural Research, received three National Institute of Neurological Disorders and Stroke Director's Awards: for rapid and effective development of the HEAL Biomarker Program, for outstanding collaboration in promoting enhanced pain management through small businesses using the NIH HEAL Initiative SBIR-STTR Program, and for outstanding effort under condensed timelines for developing the fiscal year 2020 funding plan for the Devices to Treat Pain HEAL Program.

Meetings and Conferences

Staff Presentations

Preethi Chander, PhD, director of the Salivary Biology and Immunology Program, Integrative Biology and Infectious Diseases Branch in NIDCR's Division of Extramural Research, participated in a panel discussion at the workshop, "Immune Mechanisms of Wound Healing in the Elderly," held September 23-24 in Rockville, Md. The goals of the workshop were to improve understanding of the immune mechanisms of delayed wound healing in older adults and to inform the design of studies to improve immune status in the elderly by host-directed therapies.

Dr. Chander also participated in the Geroscience Summit III, along with Leslie Frieden, PhD, training officer in NIDCR's Research Training & Career Development Program. The meeting, held November 4-5 in Bethesda, Md., was devoted to geroscience and its potential to combat chronic age-related diseases.

Bruce Dye DDS, MPH, epidemiology officer at NIDCR and director of the Health Informatics and Dental Public Health Fellowship, gave a presentation on the Surgeon General's Report on Oral Health 2020 at the American Academy of Periodontology annual meeting November 2-5 in Chicago. Dr. Dye also presented on the report's progress at the American Public Health Association annual meeting in Philadelphia in November.

Orlando Lopez, PhD, director of the Dental Materials and Biomaterials Program, Integrative Biology and Infectious Diseases Branch in NIDCR's Division of Extramural Research, co-organized and chaired a panel session on digital dentistry at the Visualize Med: Modeling the Future of Medicine Conference organized by the American Society for Mechanical Engineers on October 22 in Minneapolis. The session included presentations about the current state of digital dentistry.

Dr. Lopez also participated in an NIH career panel at the 2019 NIH Community College Day, which was hosted by the Office of Intramural Training and Education on November 26 on the NIH campus in Bethesda, Md.

Nadya Lumelsky, PhD, director of the Tissue Engineering and Regenerative Medicine Program, Integrative Biology and Infectious Diseases Branch in NIDCR's Division of Extramural Research, co-organized and co-moderated a trans-NIH workshop, "Tissue Chip Platforms as Tools Biomaterials, Biocompatibility and Biototoxicity". The goal of the workshop was to convene biomaterial, tissue engineering, and tissue-chip experts to discuss opportunities for using tissue chip platforms for predictive assessment of biomaterials' bioactivity, biocompatibility, and biotoxicity. The workshop took place in Washington, DC, October 24-25.

Dr. Lumelsky also represented NIDCR at the National Academy of Medicine Regenerative Medicine Forum workshop and members' meeting November 13-14 in Washington, DC. The workshop, "Exploring Novel Clinical Trial Designs for Gene-Based Therapies," covered design complexities and ethical issues associated with gene therapy and regenerative medicine clinical trials.

Lillian Shum, PhD, director of the Division of Extramural Research, delivered the 2019 Bauman-Bell Alpha Omega Lecture at Texas A&M College of Dentistry on October 17 in Dallas. Her presentation, "NIDCR: Advancing Dental, Oral, and Craniofacial Health Through Research and Research Training," covered the upcoming 2020 Surgeon General's Report on Oral Health, the NIDCR Strategic Plan, examples of NIDCR-supported projects that translate discoveries into products, and funding opportunities. She also met with faculty, fellows, and students to discuss their research plans.

Dr. Shum delivered a presentation titled "NIDCR Support for Multi-omics Research" at the JCVI/AADR Fall Focus Symposium, "Integrating Omic Datasets Toward Translation," on November 15 in La Jolla, Cal. She covered the NIDCR research portfolio and funding, examples of trans-NIH or NIDCR-supported multi-omics research, and funding opportunities.

Joseph Tiano, PhD, and Jessica Walrath, PhD, from the NIDCR Office of Science Policy and Analysis, attended and presented at the 2019 American Evaluation Association Conference held November 13-16 in Minneapolis. Dr. Tiano presented a poster titled "Utility of Administrative Data in Needs Assessment of Women's Representation Among National Institutes of Health Grantees." Dr. Walrath presented a talk titled "Aligning Multiple Sources and Types of Data for Evaluation of Health Disparities Research."

Chiayeng Wang, PhD, director of the Oral and Salivary Gland Cancer Biology Program, Integrative Biology and Infectious Diseases Branch in NIDCR's Division of Extramural Research and a member of the NCI Cancer Moonshot Immuno-Oncology Translational Network (IOTN) Implementation Team, planned and cochaired a two-day face-to-face IOTN Principal Investigators meeting November 18-19 in Bethesda, Md. The meeting was followed by a one-day collaborative meeting across nine Cancer Moonshot networks. The goal of the three-day meeting was to introduce IOTN consortium-building approaches and to identify commonalities within and beyond the network. NIDCR is co-funding four Head and Neck Cancer IOTN moonshot projects, three in the IOTN immunotherapy network and one in the immunoprevention network.

Darien Weatherspoon, DDS, MPH, director of the Health Disparities Research Program, Center for Clinical Research in NIDCR's Division of Extramural Research, gave a presentation about NIDCR Extramural research and activities during the American Institute of Dental Public Health AIDPH federal agencies visit held on October 16 in Bethesda, Md.

Staff Attendance

- The 11th ERDN Scientific Workshop Application Form held September 10-12 in Bethesda, Md.
- Extracellular RNA Communication Program Stage 2 Kick-Off Meeting held September 16-17 in Rockville, Md.
- The Rare Cancer Congressional Briefing held on September 19 in Washington, DC.
- 2019 National Advisory Committee on Health Literacy in Dentistry annual meeting held September 19-20 (via teleconference) in Chicago.
- American Society for Bone and Mineral Research held September 20-23 in Orlando, Fla.
- Planning a Virtual Down Syndrome Cohort Across the Lifespan workshop held September 23-24 in Potomac, Md.
- The NCI Alliance for Nanotechnology in Cancer principal investigators meeting held September 24-26 at NCI in Rockville, Md.
- Cancer Moonshot Symposium, "Patient Control of Genomic Data for Research and Health," held September 26-27 in Bethesda, Md.
- Society of Clinical Research Associates 2017 annual conference held September 27-29 in San Antonio.
- Artificial Intelligence Healthcare -- From Prevention, Diagnostic to Treatments held on October 1 in Bethesda, Md.
- CIBMTR 5th Annual Cellular Therapy Registry Forum held October 2-3 in Bethesda, Md.
- 2019 Academy for Dental Materials annual meeting held October 2-5 in Jackson Hole, Wyo.
- 15th Bi-Annual NIH Tissue Chip Consortium meeting held October 10-11 in Rockville, Md.
- Society for Craniofacial Genetics and Developmental Biology annual meeting held October 14-15 in Houston.

- American Society of Human Genetics annual meeting held October 15-19 in Houston.
- Cancer and Inflammation: From Micro to Macro, held October 17-18 in Bethesda, Md.
- Society for Neuroscience meeting held October 19-23 in Chicago.
- The 4th International Conference on Cancer Research and Drug Development held October 21-23 in Baltimore, Md.
- 10th Medical Device Epidemiology Network meeting held October 22-23 at the FDA campus in White Oak, Md.
- 2019 DIA Combination Products Conference held October 29-30 in Bethesda, Md.
- Patterns, Mechanisms and Therapeutic Consequences of Structural Variation in Human Cancer held on October 31 in Bethesda, Md.
- 2019 American Public Health Association annual meeting held November 4-6 in Philadelphia.
- Machine Intelligence Applications in Medical Imaging held on November 5 in Bethesda, Md.
- 2019 Center for AIDS Research annual meeting held November 6-9 in Chapel Hill, N.C.
- The 34th Annual Society for Immunotherapy of Cancer meeting held November 6-10 at the National Harbor, Md.
- The 9th NCI Symposium on Chromosome Biology: Chromatin and Cell Fate Decisions in Development, Aging and Cancer, held November 14-15 in Bethesda, Md.
- Public Responsibility in Medicine and Research: Advancing Ethical Research Conference held November 18-20 in Boston, Mass.
- IRDiRC Consortium Assembly meeting held November 21-22 (via teleconference) in Paris, France.
- 53rd annual convention of Association for Behavioral Cognitive Therapies held November 21-24 in Atlanta, Ga.
- 2019 annual conference on Science of Dissemination and Implementation in Health, held December 4-6 in Arlington, Va.

Lynn Mertens King, PhD, chief of the Research Training and Career Development Branch in the NIDCR Division of Extramural Research, attended the Society for Craniofacial Genetics & Developmental Biology 42nd annual meeting held October 14-15 in Houston.

Bruce Dye, DDS, MPH, epidemiology officer at NIDCR and director of the Health Informatics and Dental Public Health Fellowship, attended the American Medical Informatics Association meeting held November 16-20 in Washington, DC.

Training and Career Development News

Intramural Training Activities and Outreach

International Summit in Human Genetics and Genomics, NHGRI, NIH

Deborah Philp, PhD, director of the NIDCR Office of Education, gave a presentation on intramural training opportunities on September 17 to a group of international dentists participating in NHGRI's International Summit on Human Genetics and Genomics.

Sang-A Park Memorial Intramural Postdoctoral Fellowship

Under the auspices of the Office of Education, on September 17, NIDCR selected Sarangi Perera, PhD as the first recipient of the Sang-A Park Memorial Intramural Postdoctoral Fellowship. She is working in the laboratory of Laura Kerosuo Pahlberg, PhD.

Howard University Recruitment Session

Dr. Philp represented NIDCR at an undergraduate training recruitment session held at Howard University on September 24. She met with undergraduate students, graduate students, and dental students to discuss opportunities available at NIH.

University of Maryland, Baltimore County Students Visit NIH

On October 25, students from the University of Maryland, Baltimore County visited several NIH institutes and centers, including NIDCR. NIDCR hosted a tour of the dental clinic and participated in a panel discussion on training opportunities and career paths in science at NIH.

SACNAS Annual Conference

Dr. Philp attended the annual Society for the Advancement of Chicanos and Native Americans in Science conference October 31- November 2 in Honolulu, Hawaii, to recruit trainees to NIDCR. She disseminated training and research opportunity materials and met with students, postdoctoral trainees, professors, and researchers who were interested in research opportunities at NIDCR.

Annual Biomedical Research Conference for Minority Students

Dr. Philp attended the ABRCMS conference held November 13-16 in Anaheim, Calif. to recruit trainees for NIDCR. She met with students, professors, and researchers who were interested in research opportunities at NIDCR and led roundtable discussions on the pursuit of different career paths in science.

Research Training and Career Development Branch Outreach

The NIDCR Research Training and Career Development Branch staff reach out to the community via conferences, meetings, and workshops to encourage predoctoral students, postdoctoral fellows, and junior investigators to apply for NIDCR individual research training and career development awards. Staff also disseminate information on research training opportunities, engage investigators as potential research mentors, and develop research training programs that are responsive to the research training and career development needs of the extramural research workforce.

Highlights of Trainee Scientific Achievements

Trainees Who Have Achieved Subsequent NIH Grants

First R01/U01

- Marcos Simoes-Costa, PhD, former NIDCR K99/R00 awardee. Assistant Professor, Department of Molecular Biology and Genetics, Cornell University. (NIDCR) R01: "Genomic control of neural crest identity by signaling systems"
- Jun Wang, PhD, current NIDCR K01 awardee. Assistant Professor, Department of Pediatrics, The University of Texas Health Science Center at Houston. (NIDCR) R01: "Molecular Regulatory Mechanism of Cranial Neural Crest Development"

Pathway to Independence Awards (K99/R00)

- Eric Van Otterloo, PhD. Assistant Professor, Iowa Institute for Oral Health Research, University of Iowa. R00: "Understanding the interaction of Memo1 and Runx2 in craniodental mineralization"

Transitions from Institutional Training Grant Support (T32/T90/R90) to Individual Awards

NIDCR strongly encourages trainees supported on institutional training grants to apply for and transition to individual fellowships or career development award support.

- Laura Doherty, DMD-PhD student, University of Connecticut School of Dental Medicine. NIDCR F30 fellowship, "Regenerative potential of novel skeletal progenitors"
- Nicholas Fischer, DDS-PhD student, University of Minnesota. NIDCR F30 fellowship. "Biofunctional sealant with peptides to extend lifespans of Class V restorations"
- Sarah Metcalfe, PhD student, State University of New York at Buffalo. NIDCR F31 fellowship. "Mechanisms of Oral *Streptococcus* Macrophage Activation"
- Ida Shaffer, DDS-PhD student, University of California San Francisco. NIDCR F30 fellowship. "The effect of cortisol on tooth development"
- Benton Swanson, DDS-PhD student, University of Michigan at Ann Arbor. "Exosome-mediated Craniofacial Bone Tissue Engineering by Controlled Release"

Recent Publications from Trainees
F Fellows

Baker JL, He X, Shi W. [Precision Reengineering of the Oral Microbiome for Caries Management](#). *Adv Dent Res*. 2019 Nov;30(2):34-39.

Boer EF, Van Hollebeke HF, Park S, Infante CR, Menke DB, Shapiro MD. [Pigeon foot feathering reveals conserved limb identity networks](#). *Dev Biol*. 2019 Oct 15;454(2):128-144.

Farley-Barnes KI, Ogawa LM, Baserga SJ. [Ribosomopathies: Old Concepts, New Controversies](#). *Trends Genet*. 2019 Oct;35(10):754-767.

Heath BR, Michmerhuizen NL, **Donnelly CR**, Sansanaphongpricha K, Sun D, Brenner JC, Lei YL. [Head and Neck Cancer Immunotherapy beyond the Checkpoint Blockade](#). *J Dent Res*. 2019 Sep;98(10):1073-1080.

Lee K, Walker AR, Chakraborty B, Kaspar JR, Nascimento MM, Burne RA. [Novel Probiotic Mechanisms of the Oral Bacterium *Streptococcus* sp. A12 as Explored with Functional Genomics](#). *Appl Environ Microbiol*. 2019 Oct 16;85(21). pii: e01335-19.

Mann JE, Kulkarni A, Birkeland AC, Kafelghazal J, Eisenberg J, Jewell BM, Ludwig ML, Spector ME, Jiang H, Carey TE, Brenner JC. [The molecular landscape of the University of Michigan laryngeal squamous cell carcinoma cell line panel](#). *Head Neck*. 2019 Sep;41(9):3114-3124.

Mitani AA, Kaye EK, Nelson KP. [Marginal analysis of ordinal clustered longitudinal data with informative cluster size](#). *Biometrics*. 2019 Sep;75(3):938-949

Newton JM, Hanoteau A, Liu HC, Gaspero A, Parikh F, Gartrell-Corrado RD, Hart TD, Laoui D, Van Ginderachter JA, Dharmaraj N, Spanos WC, Saenger Y, Young S, Sikora AG. [Immune microenvironment modulation unmask therapeutic benefit of radiotherapy and checkpoint inhibition](#). *J Immunother Cancer*. 2019 Aug 13;7(1):216.

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Institutional Training Grant (/T32/T90/R90) Trainees

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PUBLICATIONS

Selected Extramurally Funded Science Advances

During the past four months, 276 extramurally funded studies were published in the scientific literature. Below is a list of the most important papers published from each program area.

High-Impact Findings from Seasoned Investigators

Behavioral and Social Sciences Research

Albert, Jeffrey M; Li, Youjun; Sun, Jiayang; Woyczynski, Wojbor A; Nelson, Suchitra. [Continuous-time causal mediation analysis](#). Stat Med (2019): 38(22), 4334-4347.

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Center for Clinical Research

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Integrative Biology and Infectious Diseases

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Bloomquist RF, Fowler TE, An Z, Yu TY, Abdilleh K, Fraser GJ, Sharpe PT, Streelman JT. [Developmental plasticity of epithelial stem cells in tooth and taste bud renewal.](#) Proc Natl Acad Sci U S A. 2019 Sep 3;116(36):17858-17866. doi: 10.1073/pnas.1821202116.

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Division of Extramural Research Staff Publications

Liu CH, Abrams ND, Carrick DM, Chander P, Dwyer J, Hamlet MRJ, Kindzelski AL, PrabhuDas M, Tsai SA, Vedamony MM, Wang C, Tandon P. [Imaging Inflammation and Its Resolution in Health and Disease workshop](#). FASEB J. 2019; Oct 9:fj201902024. doi: 10.1096/fj.201902024.

Selected Division of Intramural Research Publications

Bk B, Skuntz S, Prochazkova M, Kesavapany S, Amin ND, Shukla V, Grant P, Kulkarni AB, Pant HC. [Overexpression of the Cdk5 inhibitory peptide in motor neurons rescue of amyotrophic lateral sclerosis phenotype in a mouse model](#). Hum Mol Genet. 2019 Oct 1;28(19):3175-3187.

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Nguyen MQ, Le Pichon CE, **Ryba N**. [Stereotyped transcriptomic transformation of somatosensory neurons in response to injury](#). eLife. 2019; 8:e49679.

Szabo R, Callies LK, **Bugge TH**. [Matriptase drives early-onset intestinal failure in a mouse model of congenital tufting enteropathy](#). Development. 2019 146 pii: dev183392. doi: 10.1242/dev.183392. Associated interview with the authors: <https://dev.biologists.org/content/146/22/dev185835>

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Tian E, Wang S, Zhang L, Zhang Y, Malicdan MC, Mao Y, Christoffersen C, Tabak LA, Schjoldager KT, **Ten Hagen KG**. [Galnt11 regulates kidney function by glycosylating the endocytosis receptor megalin to modulate ligand binding](#). 2019. Proc Natl Acad Sci U S A. pii: 201909573. doi: 10.1073/pnas.1909573116. [Epub ahead of print]

Tenney AP, Livet J, Belton T, Prochazkova M, Pearson EM, Whitman MC, Kulkarni AB, Engle EC, Henderson CE. [Etv1 Controls the Establishment of Non-overlapping Motor Innervation of Neighboring Facial Muscles during Development](#). Cell Rep. 2019 Oct 8;29(2):437-452.e4. doi: 10.1016/j.celrep.2019.08.078.

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Zhang D, Jin W, Wu R, Li J, Park SA, Tu E, Zanvit P, Xu J, Liu O, Cain A, **Chen W**. [High Glucose Intake Exacerbates Autoimmunity through Reactive-Oxygen-Species-Mediated TGF- \$\beta\$ Cytokine Activation](#). Immunity. 2019 Oct 15;51(4):671-681.e5. doi: 10.1016/j.immuni.2019.08.001. Epub 2019 Aug 23.

Office of Science Policy and Analysis Staff Publications

Janakiram C, Chalmers NI, Fontelo P, Huser V, **Mitnik GL**, **Iafolla TJ**, Brow AR, **Dye BA**. [Sex and race or ethnicity disparities in opioid prescriptions for dental diagnoses among patients receiving Medicaid](#). J Am Dent Assoc. 2019 Oct;150(10): e135-e144.

FUNDING UPDATE

Program Announcements

[Initiative to Maximize Research Education in Genomics: Diversity Action Plan \(R25\)](#)

Release Date: September 17, 2019

[Support of Competitive Research \(SCORE\) Pilot Project Award \(SC2 - Clinical Trial Not Allowed\)](#)

Release Date: October 24, 2019

[Support of Competitive Research \(SCORE\) Research Advancement Award \(SC1 - Clinical Trial Not Allowed\)](#)

Release Date: October 25, 2019

[NIDCR Research Grants for Analyses of Existing Genomics Data \(R01 Clinical Trial Not Allowed\)](#)

Release Date: November 8, 2019

[NIDCR Small Research Grants for Analyses of Existing Genomics Data \(R03 Clinical Trial Not Allowed\)](#)

Release Date: November 8, 2019

[Improving Oral Health and Reducing Disparities in Adolescents \(R01 Clinical Trial Not Allowed\)](#)

Release Date: November 18, 2019

[NIDCR Prospective Observational or Biomarker Validation Study Cooperative Agreement \(U01 Clinical Trial Not Allowed\)](#)

Release Date: November 19, 2019

[Ruth L. Kirschstein National Research Service Award \(NRSA\) Institutional Training for a Dental, Oral and Craniofacial Research Workforce \(T32 Clinical Trial Not Allowed\)](#)

Release Date: November 20, 2019

[Institutional Training for a Dental, Oral and Craniofacial Research Workforce \(T90/R90 Clinical Trial Not Allowed\)](#)

Release Date: November 20, 2019

Requests for Applications

[Multisite Clinical Center Common Fund Acute to Chronic Pain Signatures Program: Acute Peri-operative Pain or Musculoskeletal Trauma \(UM1 Clinical Trial Optional\)](#)

Release Date: August 29, 2019

[NIH Blueprint for Neuroscience Research Education Program on Translational Devices \(R25 Clinical Trial Not Allowed\)](#)

Release Date: September 20, 2019

[The Intersection of Sex and Gender Influences on Health and Disease \(R01 Clinical Trial Optional\)](#)

Release Date: September 27, 2019

[Pediatric HIV/AIDS Cohort Study \(PHACS\) 2020 \(P01 Clinical Trial Not Allowed\)](#)

Release Date: October 11, 2019

[National Dental Practice-Based Research Network Clinical Trial or Observational Study Planning and Implementation Cooperative Agreement \(UG3/UH3 Clinical Trial Optional\)](#)

Release Date: October 17, 2019

[NIDCR Award for Sustaining Outstanding Achievement in Research \(SOAR\) \(R35 Clinical Trial Not Allowed\)](#)

Release Date: October 17, 2019

[Pilot Projects Enhancing Utility and Usage of Common Fund Data Sets \(R03 Clinical Trial Not Allowed\)](#)

Release Date: November 12, 2019

[NIH Blueprint Program for Enhancing Neuroscience Diversity Through Undergraduate Research Education Experiences \(BP-ENDURE\) \(R25 Clinical Trial Not Allowed\)](#)

Release Date: November 19, 2019

Funding Notices

[Notice of Changes to NIDCR's Clinical Terms of Award \(CToA\) Policy](#)

Release Date: August 28, 2019

[Notice of Clarification of Product Integrity Information in PA-18-817 "Administrative Supplements for Research on Dietary Supplements \(Admin Supp - Clinical Trial Not Allowed\)"](#)

Release Date: September 16, 2019

[Notice of Intent to Publish a Funding Opportunity Announcement for NIH Blueprint Program for Enhancing Neuroscience Diversity through Undergraduate Research Education Experiences \(R25 Clinical Trial Not Allowed\)](#)

Release Date: September 16, 2019

[Notice of Pre-Application Webinar for RFA-HD-20-002 "Pediatric HIV AIDS Cohort Study Program Project Grant Applications \(P01 Clinical Trial Not Allowed\)"](#)

Release Date: October 10, 2019

[Notice of Extension and Clarification for RFA-RM-19-013 Multisite Clinical Center Common Fund Acute to Chronic Pain Signatures Program: Acute Peri-operative Pain or Musculoskeletal Trauma \(UM1 Clinical Trial Optional\)](#)

Release Date: October 18, 2019

[Notice of Special Interest \(NOSI\) of NIDCR in Supporting Discovery, Characterization, and Mechanistic Study of Genetic Variants Underlying Dental, Oral, and Craniofacial Diseases and Conditions](#)

Release Date: October 29, 2019

[Notice of NIDCR Participation in PAR-19-380 Initiative to Maximize Research Education in Genomics: Diversity Action Plan \(R25\)](#)

Release Date: November 6, 2019

[Notice of Special Interest \(NOSI\): NIDCR Administrative Supplement for Collaborative Science](#)

Release Date: November 6, 2019

Previously Released Notices

[Requirement for ORCID iDs for Individuals Supported by Research Training, Fellowship, Research Education, and Career Development Awards Beginning in FY 2020](#)

Release Date: July 10, 2019

[Changes to NIH Requirements Regarding Proposed Human Fetal Tissue Research](#)

Release Date: July 26, 2019

[Clarifying Competing Application Instructions and Notice of Publication of Frequently Asked Questions \(FAQs\) Regarding Proposed Human Fetal Tissue Research](#)

Release Date: August 23, 2019