Director's Report to the
National Advisory Dental and Craniofacial Research Council
May 2023

NIH/HHS UPDATE

HHS Releases National Cancer Plan. HHS announced a new plan, developed by the National Cancer Institute (NCI), which will provide a framework for collaborating to end cancer as we know it and to realize the vision laid out by President Joe Biden and First Lady Jill Biden's Cancer Moonshot. The ultimate aim is to reduce the cancer death rate by at least half over the next 25 years. The plan, led by NCI, calls for collaboration across all sectors of society to achieve goals that include preventing cancer, detecting cancer early, and improving the lives of patients with cancer.

NIH Reevaluates Postdoctoral Training. The Advisory Committee to the Director's Working Group on Re-envisioning NIH-Supported Postdoctoral Training posted a request for information, which was open from February 14 to April 14, 2023, for the community to share insights on issues affecting and possible solutions to the recent decline in postdoctoral trainees. The working group will use the responses to develop recommendations to address this problem, which impacts U.S. competitiveness in biomedical research and innovation.

NIH Software Assembles Complete Genome Sequences On-Demand. NIH researchers have developed and released an innovative software tool to assemble complete, gapless genome sequences from a variety of species. This software, called Verkko, which means "network" in Finnish, makes the process of assembling complete genome sequences more affordable, accessible, and will allow scientists to better assess human genomic diversity.

NIH Launches Bioengineering Center for Technology Collaboration. To solve a range of medicine's most pressing problems, the National Institute of Biomedical Imaging and Bioengineering has established the center for Biomedical Engineering Technology Acceleration—BETA Center. The intramural center will incorporate a focused engineering approach to catalyze cutting-edge technologies, including biosensing, biomedical imaging, artificial intelligence, and more.

***All Of Us* Returns Genetic Results to Participants.** The NIH's *All of Us* Research Program has begun returning personalized health-related DNA results to more than 155,000 participants. The results detail whether participants have an increased risk for specific health conditions and how their body might process certain medications. This marks a major milestone for the program, delivering on its promise to share information and return value to participants.

New Approach Successfully Traces Genomic Variants Back to Genetic Disorders. Researchers at the National Human Genome Research Institute showed that a genotype-first approach can uncover new relationships between genes and clinical conditions. In contrast to typical methods that trace clinical findings back to genetic variants, the genotype-first approach involves selecting patients with specific genomic variants and then studying their traits and symptoms. This approach can offer insights into newly described disorders and help scientists avoid biases based on their understanding of conditions.

NIDCR UPDATE

Institute News

NIDCR Celebrates 75th Anniversary. NIDCR officially kicked off its 75th anniversary celebration in March. To commemorate the institute's scientific achievements and articulate its vision for the future, NIDCR will host a series of scientific symposia, a virtual conference for NIDCR-supported trainees, and other activities. Visit NIDCR's 75th anniversary webpage for a full listing of events and check back regularly as additional details are added throughout the year.

2023 AADOCR Annual Meeting & Exhibition. NIDCR leaders, program staff, investigators, and trainees were among the presenters and attendees at the 2023 annual meeting of the American Association for Dental, Oral, and Craniofacial Research (AADOCR) in Portland, Oregon. Visit the event webpage for a full list of NIDCR-related activities and photos from the meeting.

Special NIDCR Scientific Strides Symposium at AADOCR Meeting. NIDCR launched its 75th anniversary celebration with Scientific Strides of the NIDCR: 75 Years and Beyond, a symposium at the 2023 AADOCR annual meeting. Three former NIDCR directors, plus current Director Rena D'Souza, D.D.S., Ph.D., reflected on challenges and advances during their directorships and their visions for the institute's future. NIDCR intramural investigators described the institute's scientific advances that have shaped dentistry and medicine. A recording of the symposium will be available.

Rena D'Souza Shares Insights Into the Future of Oral Health. NIDCR Director Dr. D'Souza spoke to a journalist about how data science and digital dentistry can improve dental care. She discussed the role digital technology can play in advancing dental care quality and NIDCR's efforts in the field. In another article, Dr. D'Souza talked about the striking differences in oral health care across the U.S. revealed by NIDCR's Oral Health in America Report. Many disparities stem from underlying societal economic, and demographic inequities.

NIDCR Mourns Loss of Former Researchers. Former National Institute of Dental Research (now NIDCR) scientists Ronald Dubner, D.D.S., Ph.D., Abner Notkins, M.D., and Elliott Schiffman, Ph.D., died. All three were pioneering scientists known for major discoveries in their respective fields. Dr. Dubner furthered our understanding of acute and chronic pain. Dr. Notkins revealed that, in some cases, type 1 diabetes might result from an autoimmune reaction associated with certain viral infection. Dr. Schiffman identified protein fragments important for bacterial infection defense and pioneered research in cancer immunotherapy. The scientists were remembered for their leadership and mentorship.

NIH Issues New Data Management and Sharing Policy. NIH has released a new policy to promote the sharing of scientific data, effective January 25, 2023. This policy applies to all grants that support scientific data generation. Grants that do not generate data, such as training grants and fellowships, are not subject to the policy. Visit NIDCR's new scientific data sharing webpages for details on the new policy, key resources, FAQs, and more.

NIDCR Supported Science Advances

Therapy for Rare Bone Disorder Shows Promise in NIH Clinical Trial. An NIDCR-led clinical trial at the NIH Clinical Center found that a medication, denosumab, showed potential for treating adults with fibrous dysplasia, a rare disease marked by weak and misshapen bones. The medicine is the first to

reduce the bone-weakening process in fibrous dysplasia and may one day improve patients' quality of life by enabling healthy bone formation.

Turning a Deadly Toxin Into a Cancer Killer. In an NIH SciBites video, Sreya Sanyal, a postbaccalaureate research fellow in the lab of NIDCR's Thomas Bugge, Ph.D., shared her research on developing potential cancer treatments using anthrax toxin. Anthrax toxin is a molecule made by a bacterium. Scientists can customize it to target and kill certain types of cells. Sanyal aims to modify anthrax toxin to recognize cancer cells. This approach might allow scientists to target and kill tumor cells in the oral cavity without damaging healthy cells.

Researchers Discover Protein's Role in Bone Remodeling. In collaboration with NIDCR investigator Michael Collins, M.D., researchers at the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development identified a protein's role in regulating the size of osteoclasts—cells that break down old or damaged bone tissue to make way for new bone. Targeting the protein, called La, may lead to interventions for bone disorders, including osteoporosis and fibrous dysplasia.

Personnel Update

Kelly Ten Hagen, Ph.D., was selected as a fellow by the American Society for Biochemistry and Molecular Biology. The fellowship recognizes members with a distinguished record of accomplishments in research, education, mentorship, diversity and inclusion, advocacy, and service to the scientific community. In addition to her scientific achievements, Dr. Ten Hagen was recognized for her contributions to the NIH Anti-Harassment Steering Committee, which established new policies for addressing workplace harassment.

NIDCR's Clinical Director, **Janice Lee, M.S., D.D.S., M.D.,** was named editor and member of the editorial advisory board of The NIH Catalyst. Dr. Lee will provide an institutional perspective and scientific expertise to the Catalyst, which shares news of NIH intramural research activities across NIH and to the general public. She will suggest article topics, identify emerging issues, and advise on changes in content and format.

Joy Postell, recently transitioned from the role of acting chief to the chief diversity officer of NIDCR. She received her bachelor's degree from the University of Maryland University College and a certification in diversity and inclusion from Cornell University. Postell comes to NIDCR from the NIH Office of Equity, Diversity, and Inclusion (EDI), where she was a principal strategist on the portfolio for women. Prior to that, she led the implementation of the NIH Language Access Program. She originally joined NIH in 1994 as an immigration specialist at Fogarty Interantional Center and has worked in the Office of Research Services, NIH Travel Services Program, and Sign Language Interpreting Services Program.

Marian Young, Ph.D., will retire as deputy scientific director and as chief of the Molecular Biology of Bones and Teeth Section in the Division of Intramural Research (DIR) on May 31, 2023. Dr. Young first joined NIDCR in 1981 as a postdoctoral fellow. In 1990, she was appointed chief of NIDCR's Molecular Biology of Bones and Teeth Section. In 2018, she became deputy scientific director of DIR. Her research focused on the function of extracellular matrix proteins found in skeletal tissues and how they control cellular processes inside and outside of bones. Based on her outstanding mentorship, Dr. Young received the NIH's Ruth L. Kirschstein Mentoring Award in 2012.