

**Director's Report to the
National Advisory Dental and Craniofacial Research Council
May 2021**

HHS/NIH UPDATE

[President Biden Visits NIH](#). US President Joseph R. Biden Jr. visited NIH in February for a tour of the Dale and Betty Bumpers Vaccine Research Center and delivered remarks acknowledging the contributions of NIH staff in combatting the COVID-19 pandemic. The President referred to COVID-19 vaccines as “a dose of hope” and emphasized the importance of following the science to end the pandemic. The event comes on the heels of [Vice President Kamala Harris' visit to NIH](#) for her second dose of vaccine and a virtual visit by First Lady Jill Biden, EdD, with the National Cancer Institute.

[Xavier Becerra Sworn in as HHS Secretary](#). Xavier Becerra, JD, was sworn in as the secretary of HHS on March 19. Prior to joining HHS, Becerra served as the Attorney General of California since 2017 and as a member of the US House of Representatives since 1993. He earned his bachelor's degree in economics from Stanford University and his juris doctor from Stanford Law School.

[Vivek Murthy Resumes Role as Surgeon General](#). Vivek H. Murthy, MD, MBA, was sworn in as the 21st US Surgeon General by HHS Secretary Xavier Becerra on March 25. Murthy previously served as the 19th Surgeon General. Prior to his roles as Surgeon General, Murthy practiced internal medicine and conducted research on vaccine development and inclusivity in clinical trials. He received his bachelor's degree from Harvard, his MBA from Yale University, and his MD from the Yale School of Medicine.

[NIH Launches Initiative to Study “Long COVID.”](#) Some people who have had COVID-19 experience symptoms ranging from mild to incapacitating that can persist for months. NIH in February issued the first in a series of research opportunity announcements aimed at identifying the causes of “long COVID” and developing ways to treat or prevent it. The initiative will be supported by \$1.15 billion in funding from Congress over four years.

[COVID-19 Vaccine Responses to be Studied in People with Immune Deficits](#). A study assessing how people with immune system deficiencies or dysregulations respond to COVID-19 vaccination has begun enrolling participants at the NIH Clinical Center. The research, led by scientists from the National Institute of Allergy and Infectious Diseases (NIAID), aims to better understand the safety and tolerability of the vaccines in people with a range of immune deficits and to gather information about COVID-19 illness in these populations.

[NIH to Invest \\$29 Million to Address COVID-19 Disparities](#). To bolster research to help communities disproportionately affected by COVID-19, NIH is funding \$29 million in additional grants for the NIH Community Engagement Alliance (CEAL) Against COVID-19 Disparities. The awards will help strengthen COVID-19 vaccine confidence, access, testing, and treatment in communities of color. Some research teams will work to extend the reach of COVID-19 community-engaged research and outreach. The NIH-wide effort is led by the National Institute on Minority Health and Health Disparities and the National Heart, Lung, and Blood Institute.

[NIH Experts Discuss SARS-CoV-2 Variants](#). In an editorial published in *JAMA: The Journal of the American Medical Association*, scientists from NIAID outline the rise of several significant SARS-CoV-2 variants, their potential to affect vaccine protection, and the need for a global approach to fighting the virus as it acquires new mutations.

[NIH Office of the Director Establishes the Office of Nutrition Research](#). The Office of Nutrition Research (ONR), first established by the National Institute of Diabetes and Digestive and Kidney Diseases, is being officially transferred to the NIH Office of the Director. The move upgrades the ONR to a trans-NIH initiative, given the broad impact of nutrition on health and disease, and positions the office to enhance engagement of NIH institutes and centers in implementing the [2020-2030 Strategic Plan for NIH Nutrition Research](#).

NIDCR UPDATE

Institute News

[NIDCR & NIH Stand Against Structural Racism](#). NIDCR Director Rena D’Souza, DDS, MS, PhD, said in a statement that there is no place for structural racism in biomedical research, echoing remarks from NIH Director Francis Collins, MD, PhD, in his [announcement](#) of a new NIH initiative—called UNITE—to end racial inequities in biomedical research. Through UNITE, NIH seeks to better understand stakeholder experiences, improve biomedical research culture and structure, spearhead new research on health disparities, and enhance transparency and communication with internal and external stakeholders.

[A Look Back at NIDCR’s Response to the COVID-19 Pandemic](#). In a [perspective](#) published in the *Journal of Dental Research*, NIDCR leadership outlines the institute’s effort to pivot research and resources toward COVID-19 studies while supporting the staff’s physical and mental well-being. The efforts have led to innovative research projects designed to protect practitioners and patients in dental settings during the pandemic, along with studies to prevent SARS-CoV-2 transmission, improve the detection and diagnosis of COVID-19, and understand disease progression. In an [editorial](#) published in *The Journal of The American Dental Association*, Dr. D’Souza and Lillian Shum, PhD, director of NIDCR’s Division of Extramural Research, note that this pandemic will better prepare us for future viral outbreaks, and resulting scientific developments could have implications for better understanding of several dental, oral, and craniofacial conditions in the future.

[NIDCR Director Joins Conversation with AAPI Leaders at NIH](#). On May 4, Dr. D’Souza joined Noni Byrnes, PhD, director of the Center for Scientific Review, and Michael Chiang, MD, director of the National Eye Institute at a virtual leadership discussion in celebration of the 2021 Asian Americans and Pacific Islanders (AAPI) heritage month. The panel discussion provided a platform for these AAPI leaders in the field of public health to share their insights, leadership tips, and visions for the future for empowering the next generation of leaders.

[Five Former NIDCR Fellows Named 2021 Dental Public Health Diplomates](#). In 2021, the American Board of Dental Public Health welcomed 14 new diplomates, 5 of whom had successfully completed NIDCR’s two-year fellowship in oral health informatics, a training program in the field of public health dentistry. Although the oral health informatics program is not currently open to applicants, NIDCR offers a wide range of career and training opportunities for researchers at all stages of professional development,

from high school and college students to postdocs and independent scientists. [Learn more about career development and training opportunities at NIDCR.](#)

NIDCR-Supported Science Advances

MINDing the Gap: From Trainee to Tenure Track. Early-stage researchers discussed their experiences in an NIDCR supported initiative called Mentoring an Inclusive Network of a Diverse Workforce of the Future (MIND the Future). The year-long program, launched by the American Association for Dental Research, provides one-on-one mentoring and career-related training to individuals from diverse backgrounds to support their transition to research independence and enhance the diversity of the dental, oral, and craniofacial research workforce.

Cracking Down on a Rare Bone Disorder. NIDCR Lasker Clinical Research Scholar, Alison Boyce, MD, is searching for treatments for Fibrous Dysplasia/McCune-Albright Syndrome (FDMAS), a rare disease of the bones, endocrine system, and skin, which can impair quality of life. She leads the FD/MAS natural history study at NIH, characterizing patient's signs and symptoms to understand disease progression. In an ongoing clinical trial, her team is investigating the safety and effectiveness of potential therapeutics for the bones of adult patients.

Scientists Find Evidence of Oral SARS-CoV-2 Infection. An international team of scientists led by NIDCR's Blake Warner, DDS, PhD, MPH, and Kevin Byrd, DDS, PhD, of the American Dental Association Science and Research Institute, found evidence of SARS-CoV-2 infection in the mouth, particularly the salivary glands. As described by Warner in a [video interview](#), the results suggest that infected oral cells are a likely source of infectious virus in saliva, and that the presence of virus in saliva is connected to taste loss in people with COVID-19. The study provides a foundation for better understanding the mouth's involvement in COVID-19 and could inform strategies to reduce viral transmission within and outside the body.

A Safe Space in the Dental Clinic. With NIDCR support, a multidisciplinary research team that includes occupational therapists and dental clinicians is creating soothing dental environments for children with autism spectrum disorder (ASD). In a recent review article, the scientists lay out suggestions for reducing anxiety in children with ASD during dental visits to reduce their risk for poor oral health. Some strategies include preparing sensory-friendly settings and reading social stories with pictures to prepare children for upcoming dental procedures.

Researchers Identify New Genetic Disorder that Affects Brain, Craniofacial Skeleton. A team led by NIDCR scientists discovered a new genetic disorder characterized by developmental delays and malformations of the brain, heart, and facial features. The disorder is caused by a mutated version of the *OTUD5* gene, which interferes with key steps in embryo development. The newly identified pathway may be essential for human development and could underlie other disorders that are present at birth. Visit the link for a video interview with the scientists.

How Fungus Finds a Foothold. NIH scientists found that an overactive immune response leaves the oral cavity vulnerable to fungal infections in people and mice with genetic defects that cause a rare autoimmune disease. The team, including NIDCR scientists, say the discovery could lead to better

therapies for fungal infections in patients with the rare disease and other conditions while providing insight into immune mechanisms in other mucosal tissues.

[A Search for Cell Identity](#). Immunologist Roxane Tussiwand, PhD, recently joined NIDCR as an NIH Stadtman Investigator. She studies how blood-forming stem cells are shaped by their environment into the various types of mature immune cells that defend the body. Her work could shed light on infectious diseases, autoimmune disorders, and cancer, which touched her own family.

[Surgical Adhesive Inspired by Slug Slime](#). Researchers engineered a new type of surgical adhesive that is stretchy like rubber bands and sticky in wet environments. This nature-inspired material, developed with long-term NIDCR support, is an unexpected offshoot of basic research that may help patients heal better after injury or surgery. With further validation and optimization, the adhesive may one day find use in dental practices as a substitute for stitches or as a wound barrier to protect bone grafts.

[Bone Glue Used to Deliver Non-Addictive Pain Relief](#). Scientists are adapting a surgical bone glue to deliver non-addictive, locally acting pain medicine directly to the site of a wisdom tooth removal. The study, supported by NIDCR and the NIH Helping to End Addiction Long-term Initiative, aims to reduce the need for opioid prescriptions in young patients, in line with the initiative's goal of finding long-term scientific solutions for the opioid epidemic.

Personnel Update

Lorena Baccaglini, DDS, MS, PhD, joins NIDCR as the director of the Clinical Research and Epidemiology program, part of the Center for Clinical Research in the Division of Extramural Research. Dr. Baccaglini initially completed her dental training at the University of Milan in Italy, then received a certificate in prosthodontics at Marquette University in Milwaukee, followed by a dental degree at the Medical College of Virginia. She then completed the Advanced Education in General Dentistry training program at the University of California, San Francisco. Dr. Baccaglini completed an oral medicine fellowship and clinical research training through NIDCR's intramural program, followed by her PhD in epidemiology with a minor in biostatistics at the University of North Carolina at Chapel Hill. Dr. Baccaglini has held faculty positions at the University of Texas Health Science Center at San Antonio, the University of Florida, and the University of Nebraska. Since 2012, Dr. Baccaglini has been an associate professor of epidemiology in the College of Public Health at the University of Nebraska Medical Center. Dr. Baccaglini is board certified in oral medicine and is also certified as a pharmacy technician. She has mentored numerous students during her academic career and has served as a principal investigator or co-investigator on a variety of grants, including from NIH, the Patient-Centered Outcomes Research Institute, and the CDC. She also has served as a reviewer for numerous NIH study sections and has chaired review meetings for NIDCR and other NIH institutes.

Melissa Ghim, PhD, joins NIDCR as director of the Neuroscience of Orofacial Pain and Temporomandibular Disorders program, part of the Integrative Biology and Infectious Diseases Branch in the Division of Extramural Research. She received her PhD at the University of Maryland, College Park in the Integrative Neuroscience Program and was a postdoctoral associate at State University of New York Upstate Medical University in the Department of Neurosurgery. Dr. Ghim comes to NIDCR from the NIH Office of Research on Women's Health (ORWH), where she served as a senior program director on content related to gender diversity and the underrepresentation of women in the biomedical research

workforce. She led and coordinated various programs and projects at ORWH, including the NIH Prize for Enhancing Faculty Gender Diversity, the career development goal of the Trans-NIH Strategic Plan for Research on Women's Health, and the early development of the NIH Sex as a Biological Variable Primer. She was also the NIH task lead on the National Academies of Sciences, Engineering, and Medicine consensus study and report "Promising Practices for Addressing the Underrepresentation of Women in Science, Engineering, and Medicine." Prior to joining ORWH, Dr. Ghim served as the training director at the National Institute on Drug Abuse (NIDA). In this role, she directed NIDA's research training and career development grant programs, including policy development and implementation, and coordination of program activities across NIDA divisions and offices. She also served as the Careers Team co-chair for the BRAIN Initiative, which developed the Research Career Enhancement Award for Investigators to Build Skills in a Cross-Disciplinary Area.

Marika Heinicke, PharmD, BCGP, joins NIDCR as a clinical coordinator within the Office of Clinical Trials Operations and Management. She received her PharmD from Shenandoah University in Virginia and is a board-certified geriatric pharmacist. Dr. Heinicke comes to NIDCR from Brij Strategic Consultations, where she was a project manager and senior technical writer for human factor studies subject to Food and Drug Administration regulations. Her roles involved clinical operations, regulatory strategies, and technical writing. She previously served as a pharmacist at CHC Health and Mirixa Corporation, where she provided clinical pharmacy services to patients with multiple comorbidities.