

Written Testimony

FY11 Funding: National Institute for Dental and Craniofacial Research

Prepared for presentation to the U.S. House of Representatives
Appropriations Subcommittee on
Labor, Health & Human Services, Education, and Related Agencies

Submitted By:

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Mr. Chairman and distinguished Members of the Subcommittee, the members of the **Friends of the National Institute of Dental and Craniofacial Research (FNIDCR)**, a leading broad-based coalition of individuals, academic institutions, patient advocate groups, dental societies, and corporations, that understands the importance of dental, oral and craniofacial health to our society, are requesting that FY11 funding for the **National Institute of Dental and Craniofacial Research (NIDCR)** be appropriated at our recommended level of \$480 million.

Currently, FY10 funding for NIDCR is \$413,236,000. This is a welcomed 2.6% increase from FY09's funding level. In addition, the American Recovery and Reinvestment Act of 2009 included \$10 billion in aid to the National Institutes of Health (NIH) of which approximately \$101.8 million was appropriated to NIDCR over FY09 and FY10. FNIDCR is grateful for this unprecedented financial support of medical research that has helped make-up for the stagnated funding levels of fiscal years 2004-08.

Amid a challenging budgetary environment, the administration's FY2011 budget request calls for NIDCR funding to be \$423,511,000, a 2.48% increase. This increase is appreciated; however, it is simply inadequate for the following reasons:

1. It is not enough to sustain the job creation and biomedical research initiated by ARRA.
2. There are projected budget reductions for NIH and its Institutes in fiscal years 2012 and 2013 that would reduce funding to FY08 levels of the previous administration.
3. Although NIH's budget has doubled since 1998, NIDCR's budget has not. In fact, NIDCR's percentage of total NIH funding has decreased 13% since 1998, from 1.53% to 1.33%, its lowest percentage in a decade.

Therefore, FNIDCR strongly recommends a return to NIDCR being funded at 1.53% of NIH's total proposed FY2011 budget, or \$480 million, which will address the three points of concern above and will create a sustainable funding path going forward.

NIDCR: A Renown Leader in Research

For 62 years, NIDCR has been the leading sponsor of research and research training in biomedical and behavioral sciences. Its mission is to *“improve oral, dental and craniofacial health through research, research training, and the dissemination of health information.”*

NIDCR meets its mission by:

- Performing and supporting basic and clinical research;
- Conducting and funding research training and career development programs to ensure an adequate number of talented, well-prepared and diverse investigators is sustained;
- Coordinating and assisting relevant research and research-related activities among all sectors of the research community; and
- Promoting the timely transfer of knowledge gained from research and its implications to health professionals, researchers, and policy-makers; and on the overall well-being of our society.

In addition, NIDCR’s Gold Standard Peer Review System ensures that taxpayers’ dollars are being utilized in a wise, effective and productive manner.

NIDCR Research Benefits Society

Proper federal funding of NIDCR will transform the future of medical and dental practice to the benefit of our society and ease the burden on our nation’s healthcare system. Examples of where NIDCR research has and will benefit society are:

Tooth Decay: Fluorides and sealants have cut the rate of the number of American adults, aged 45 and older, who are without teeth by more than half since the 1950s. Government investment in oral health research saved Americans \$3 for every \$1 invested.

Oral Cancer Detection: In his February 24, 2009 speech to a Joint Session of Congress, President Barack Obama spoke of a new effort to conquer cancer by seeking a cure in our lifetime. Oral cancer affects 38,000 Americans each year and approximately 22 Americans die each day from it. Survival rates are among the lowest of all the major cancers. It is difficult to detect and hard to predict its outcome. However, if detected in early stages, the five-year survival rate is 83 percent. NIDCR-supported research has yielded initial success with developing new diagnostic techniques that can lead to early detection and life-saving interventions. For example, oral cancer is the first cancer to have its biomarkers mapped using Salivary Diagnostics (see below), and the presence of these biomarkers resulted in an early diagnosis of oral cancer 93 percent of the time. Furthermore, as a testament to scientific discoveries, oral researchers have confirmed that oral cancer (traditionally thought of as being driven by extensive use of tobacco and alcohol) possesses a strong and growing link to Human Papilloma Virus (HPV).

Salivary Diagnostics. The promising prospect of using saliva as a diagnostic fluid to identify a number of emerging diseases, such as cancer, HIV/AIDS, and cardiovascular disease, is an example of the type of cutting-edge research being conducted and supported by NIDCR. Salivary Diagnostics, a non-invasive process, possesses advantages over traditional blood testing, including the absence of needles and the ability to be administered on-the-spot, yielding results in 10 minutes.

Genome-wide Association Studies: NIDCR is supporting the first genome-wide association studies, or “GWAS,” on cleft lip/cleft palate and dental caries. This is being done in collaboration between epidemiologists, geneticists, informatics experts, and environmental scientists. The studies offer significant potential for understanding the molecular and genetic basis of cleft lip/cleft palate and dental caries with the goal of improving the ability to predict and manage them by providing the first comprehensive compilation of the biological instructions required to construct the middle region of the human face and to define the genetics that create its developmental disorders, according to NIDCR.

Moreover, NIDCR research benefits millions of Americans with:

- Periodontal Disease
- Chronic Dry Mouth
- Chronic Facial and Oral Pain, and
- Bone and Cartilage Regeneration

NIDCR Research Makes a Difference in People’s Lives

Because FNIDCR is a broad-based coalition of members, we are able to share first-hand perspectives from across the spectrum of the oral health community.

National Foundation for Ectodermal Dysplasias:

For several decades, individuals affected by ectodermal dysplasia (ED) have benefited from NIDCR-funded research using osseointegrated implants to correct problems with edentulism. That research was further validated by a recent retrospective study that concluded that such implants continue to be a safe and effective treatment. While former research is of great interest, it is the need for additional research that must be given consideration. For example, there has not been substantive research which supports or negates the value of materials used for augmentation of the alveolar ridge prior to placement of implants. As a result, patients are often the “guinea pigs” for clinicians, subjecting the patient to augmentation, failure, or infection. While NIDCR has been invaluable in moving ectodermal dysplasia research forward, additional funding is necessary to help address past research funding shortfalls to meet the mission of NIDCR.

Sjogren's Syndrome Foundation:

NIDCR has given much-needed hope to approximately four million Americans who suffer from Sjögren’s syndrome, the second most common autoimmune connective tissue disease. Sjögren’s affects the moisture-producing glands,

resulting in dry eye and dry mouth, and can involve any body organ or system leading to serious health consequences and a major impact on quality of life. Sjögren's is a disease that crosses many specialties and was largely ignored by investigators until the NIDCR established a Sjögren's clinic and became a leader to catalyze research into this complex disease. Recently, NIDCR funded an international registry that will help us better understand Sjögren's and offer bio-specimens to researchers from around the world. NIDCR also issued a Request for Applications in Sjögren's that has jumpstarted critical areas of research such as identification and elucidation of salivary and serum biomarkers and immune and genetic factors that contribute to disease development. NIDCR has helped make scientific workshops possible on topics such as Sjögren's and lymphoma, which most frequently occurs in the salivary glands, leading to greater interest in this topic and collaborations among Immunologists, Oncologists, and Pathologists. Thanks to the active leadership of NIDCR, Sjögren's syndrome is finally receiving the recognition it deserves as a leading autoimmune disease and is on the verge of novel discoveries during this new era of medical research.

University of Maryland College of Dental Surgery:

Maryland's research thrusts are oropharyngeal cancer, a leading cause of death; chronic orofacial pain, and emerging as well as disfiguring infections, including MRSA. At Maryland, NIH-NIDCR support constitutes the backbone for fulfilling its mission to nurture new and to stimulate existing talent in these important areas of unmet need. It provides the resources to develop and maintain a state-of-the-art research infrastructure that is globally competitive and signals to the rest of the world the commitment of the U.S. to reduce the burden of disease for all people. It provides the knowledge for advancing professionals that will offer first-rate care to patients. NIH-NIDCR funding also contributes to Maryland's research training workforce pipeline in the form of training grants so that new investigators and related personnel can enter this field of discovery. Finally, it enables Maryland, by means of science, to develop and launch exciting new programs that improve the access to dental care while fostering a culture for better and safer dental treatments for all Americans.

University of Michigan School of Dentistry:

Research and discovery is deeply embedded in the culture of the University of Michigan School of Dentistry. It has consistently ranked among the top 3 schools in receipt of NIDCR grant awards over the past 5 years, during which NIDCR has provided approximately 68% of total research funding. Focused on a broad range of oral health issues, the School of Dentistry has identified its research strengths through theme groups that are predominately funded through NIDCR, including Developmental Craniofacial Biology, Neurobiology, Tissue Engineering and Regeneration, Cancer Biology and Microbiology/Immunology/Inflammatory Diseases. NIDCR support of our basic and clinical research programs has enabled The School's scientists to make a tangible positive difference in the health and welfare of the citizens of the state of Michigan and the broader community nationwide. Major scientific impacts resulting from this funding

include: uncovering the biological basis of the relationship between periodontal disease and diabetes; development of a method of gene delivery that appears safe for regenerating tooth-supporting periodontal tissues; advancing the understanding of inherited enamel defects; and the development of biologic substitutes for regenerating tissues and organs that can be then transplanted during reconstructive surgery. NIDCR has enabled the University of Michigan School of Dentistry to make a difference in the lives of those it serves.

Funding Medical Research Generates Economic Activity

We maintain that an increase in FY11 NIDCR funding will help sustain the increased economic activity, job creation, and biomedical research advancement generated by ARRA throughout the nation. According to NIDCR, the \$101.8 million NIDCR ARRA funding supported 136 new or competing two-year research and research training grants and 109 administrative supplements to scientists with active NIDCR grants. NIDCR ARRA grant awardees were from 33 states.

Moreover, non-ARRA NIDCR-funded research has a presence in 200, or 46 percent, of Congressional Districts and in 45 states. Therefore, a significant portion of NIDCR-funded research occurs off the NIH campus and around the country.

Oral Health Disparities Centers

Finally, through community-based disparities research funded by NIDCR, a difference is being made in meeting the health needs of our nation's low-income, underserved, and high-risk populations. Sadly, this need was made apparent with the tragic passing of 12-year-old Deamonte Driver who died from a tooth infection in 2007. In FY09, for example, NIDCR functionally integrated three separate Health Disparity Centers at the University of California, San Francisco, University of Colorado, Denver, and Boston University to explore ways to prevent early childhood caries (ECC).

RECOMMENDATION

Proper funding of NIDCR is essential to the overall health and well-being of our fellow Americans. We firmly contend that medical discoveries and advances from NIDCR funding lead to improvements in dental practices and change the scope of public health policies across the nation. Whether it is detecting a clear link between bacteria in the mouth and heart disease—or discovering how saliva can be used to detect early indications of disease—we all benefit when we make oral health research a priority. Therefore, based upon the merits of the research conducted by NIDCR, and its demonstrated benefits to the lives of countless Americans, **we respectfully request the Subcommittee fund NIDCR at \$480 million for FY11, or 1.53% of NIH's total budget, so that it can realize the full potential of its worthy mission and sustain the scientific research that will emerge as a result of ARRA.** Thank you for the opportunity to present our written testimony before the Subcommittee.