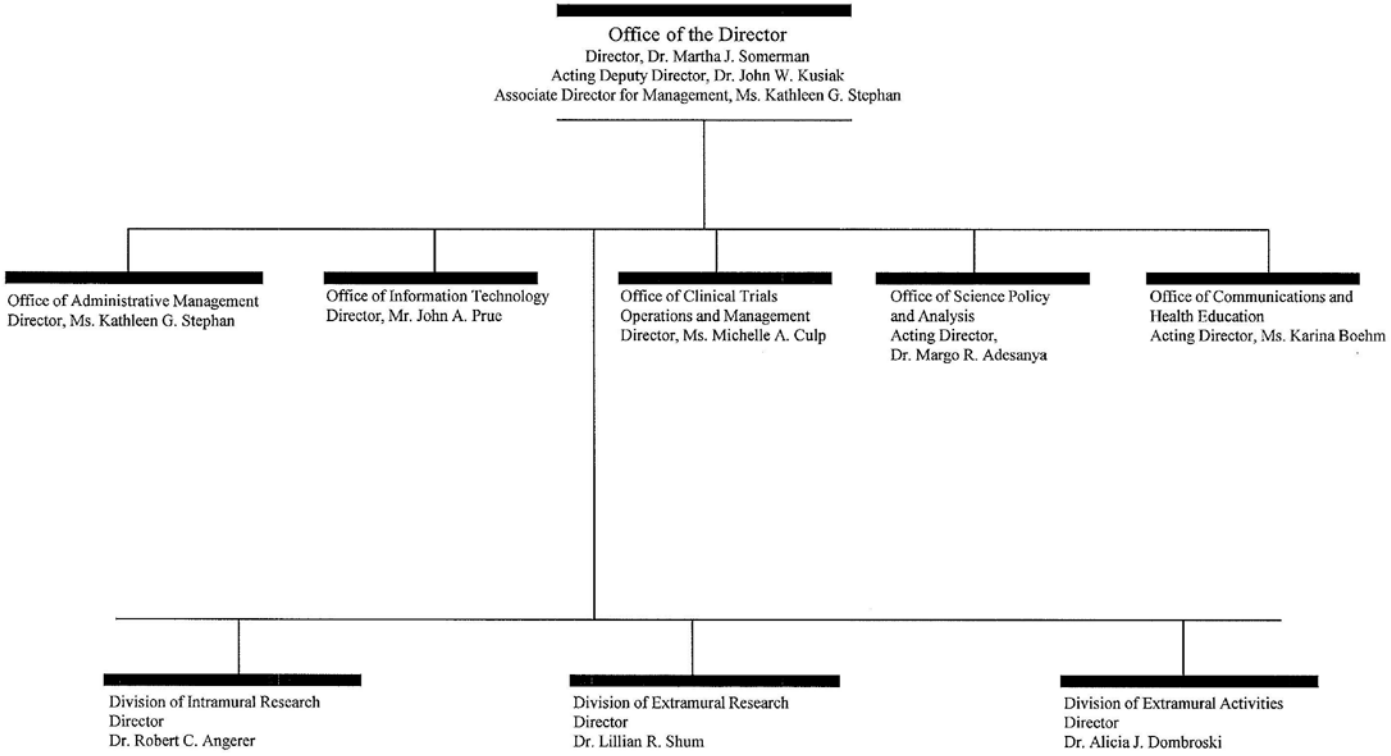
DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

National Institute of Dental and Craniofacial Research (NIDCR)

National Institute of Dental and Craniofacial Research



NATIONAL INSTITUTES OF HEALTH

National Institute of Dental and Craniofacial Research

For carrying out section 301 and title IV of the PHS Act with respect to dental and craniofacial diseases, [$399,886,000]*$406,746,000*.

NATIONAL INSTITUTES OF HEALTH
National Institute of Dental and Craniofacial Research

Amounts Available for Obligation[1]

(Dollars in Thousands)

Source of Funding	FY 2014 Actual	FY 2015 Enacted	FY 2016 President's Budget
Appropriation	$398,650	$399,886	$406,746
Type 1 Diabetes	0	0	0
Rescission	0	0	0
Sequestration	0	0	0
FY 2014 First Secretary's Transfer	-1,001	0	0
FY 2014 Second Secretary's Transfer	-78	0	0
Subtotal, adjusted appropriation	$397,571	$399,886	$406,746
OAR HIV/AIDS Transfers	-1,000	-2,186	0
National Children's Study Transfers	1,310	0	0
Subtotal, adjusted budget authority	$397,881	$397,700	$406,746
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	0	0	0
Subtotal, adjusted budget authority	$397,881	$397,700	$406,746
Unobligated balance lapsing	-49	0	0
Total obligations	$397,833	$397,700	$406,746

[1] Excludes the following amounts for reimbursable activities carried out by this account:
FY 2014 - $1,511 FY 2015 - $1,710 FY 2016 - $1,710

NATIONAL INSTITUTES OF HEALTH
National Institute of Dental and Craniofacial Research

Budget Mechanism - Total[1]

(Dollars in Thousands)

MECHANISM	FY 2014 Actual		FY 2015 Enacted		FY 2016 President's Budget		FY 2016 +/- FY 2015	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Projects:								
Noncompeting	367	$167,851	396	$176,975	410	$190,514	14	$13,539
Administrative Supplements	*(38)*	8,544	*(27)*	6,000	*(13)*	3,000	*(-14)*	-3,000
Competing:								
Renewal	21	10,636	20	10,429	18	9,368	-2	-1,061
New	145	55,737	142	54,751	128	50,110	-14	-4,641
Supplements	1	96	0	0	0	0	0	0
Subtotal, Competing	167	$66,470	162	$65,180	146	$59,478	-16	-$5,702
Subtotal, RPGs	534	$242,865	558	$248,155	556	$252,992	-2	$4,837
SBIR/STTR	30	9,711	25	10,030	28	10,756	3	726
Research Project Grants	564	$252,576	583	$258,185	584	$263,748	1	$5,563
Research Centers:								
Specialized/Comprehensive	4	$13,519	3	$6,425	3	$6,892	0	$467
Clinical Research	0	0	0	0	0	0	0	0
Biotechnology	0	0	0	0	0	0	0	0
Comparative Medicine	0	0	0	0	0	0	0	0
Research Centers in Minority Institutions	0	0	0	0	0	0	0	0
Research Centers	4	$13,519	3	$6,425	3	$6,892	0	$467
Other Research:								
Research Careers	41	$5,525	48	$6,406	48	$6,406	0	$0
Cancer Education	0	0	0	0	0	0	0	0
Cooperative Clinical Research	0	0	0	0	0	0	0	0
Biomedical Research Support	0	0	0	0	0	0	0	0
Minority Biomedical Research Support	1	418	0	333	0	247	0	-86
Other	17	1,683	16	2,054	17	2,141	1	87
Other Research	59	$7,626	64	$8,793	65	$8,794	1	$1
Total Research Grants	627	$273,721	650	$273,404	652	$279,434	2	$6,030
Ruth L Kirchstein Training Awards:	FTTPs		FTTPs		FTTPs		FTTPs	
Individual Awards	101	$4,278	101	$4,353	101	$4,353	0	$0
Institutional Awards	165	8,194	165	7,858	165	7,858	0	0
Total Research Training	266	$12,472	266	$12,211	266	$12,211	0	$0
Research & Develop. Contracts	21	$22,402	18	$21,591	18	$23,541	0	$1,950
(SBIR/STTR) (non-add)	*(0)*	*(49)*	*(0)*	*(0)*	*(0)*	*(108)*	*(0)*	*(108)*
Intramural Research	155	64,787	153	65,419	151	66,098	-2	679
Res. Management & Support	83	24,499	86	25,074	88	25,462	2	388
Res. Management & Support (SBIR Admin) (non-add)	*(0)*	*(8)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*
Construction		0		0		0		0
Buildings and Facilities		0		0		0		0
Total, NIDCR	238	$397,881	239	$397,700	239	$406,746	0	$9,046

[1] All items in italics and brackets are non-add entries.

Major Changes in the Fiscal Year 2016 President's Budget Request

Major changes by budget mechanism and/or budget detail are briefly described below. Note that there may be overlap between budget mechanism and activity detail and these highlights will not sum to the total change for the FY 2016 President's budget for NIDCR. The FY 2016 President's Budget for NIDCR is $9.046 million more than the FY 2015 enacted level, for a total of $406.7 million.

Research Project Grants (+$5.563 million; total $263.748 million):
NIDCR will support a total of 584 Research Project Grant (RPG) awards in FY 2016. Noncompeting RPGs will increase by 14 awards or $13.539 million. This increase is largely due to the transfer of NIDCR's health disparities center awards to the RPG line in FY 2015. Competing RPGs will decrease by 16 awards or $5.702 million.

NATIONAL INSTITUTES OF HEALTH
National Institute of Dental and Craniofacial Research

Summary of Changes

(Dollars in Thousands)

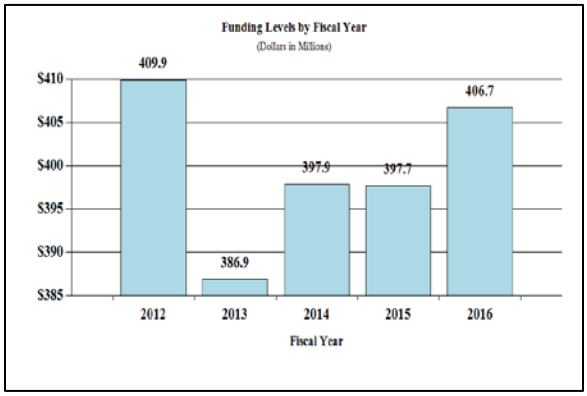
FY 2015 Enacted	$397,700
FY 2016 President's Budget	$406,746
Net change	$9,046

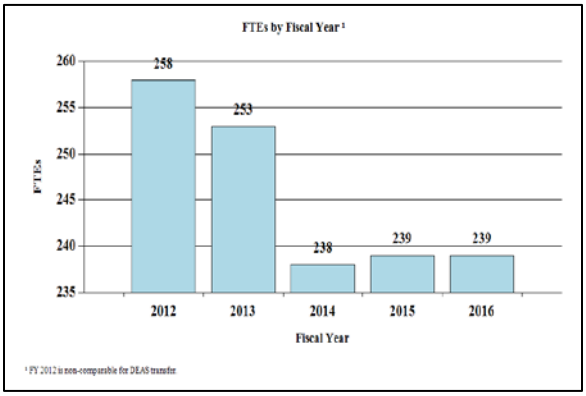
CHANGES	FY 2016 President's Budget FTEs	FY 2016 President's Budget Budget Authority	Change from FY 2015 FTEs	Change from FY 2015 Budget Authority
A. Built-in:				
1. Intramural Research:				
a. Annualization of January 2015 pay increase & benefits		$24,797		$59
b. January FY 2016 pay increase & benefits		24,797		176
c. One more day of pay (n/a for 2015)		24,797		94
d. Differences attributable to change in FTE		24,797		0
e. Payment for centrally furnished services		11,177		273
f. Increased cost of laboratory supplies, materials, other expenses, and non-recurring costs		30,124		417
Subtotal				$1,018
2. Research Management and Support:				
a. Annualization of January 2015 pay increase & benefits		$13,215		$31
b. January FY 2016 pay increase & benefits		13,215		93
c. One more day of pay (n/a for 2015)		13,215		50
d. Differences attributable to change in FTE		13,215		0
e. Payment for centrally furnished services		2,469		60
f. Increased cost of laboratory supplies, materials, other expenses, and non-recurring costs		9,778		137
Subtotal				$371
Subtotal, Built-in				$1,389

CHANGES	FY 2016 President's Budget No.	FY 2016 President's Budget Amount	Change from FY 2015 No.	Change from FY 2015 Amount
B. Program:				
1. Research Project Grants:				
a. Noncompeting	410	$193,514	14	$10,539
b. Competing	146	59,478	-16	-5,702
c. SBIR/STTR	28	10,756	3	726
Subtotal, RPGs	584	$263,748	1	$5,563
2. Research Centers	3	$6,892	0	$467
3. Other Research	65	8,794	1	1
4. Research Training	266	12,211	0	0
5. Research and development contracts	18	23,541	0	1,950
Subtotal, Extramural		$315,186		$7,979
	FTEs		FTEs	
6. Intramural Research	151	$66,098	-2	-$339
7. Research Management and Support	88	25,462	2	17
8. Construction		0		0
9. Buildings and Facilities		0		0
Subtotal, Program	239	$406,746	0	$7,657
Total changes				$9,046

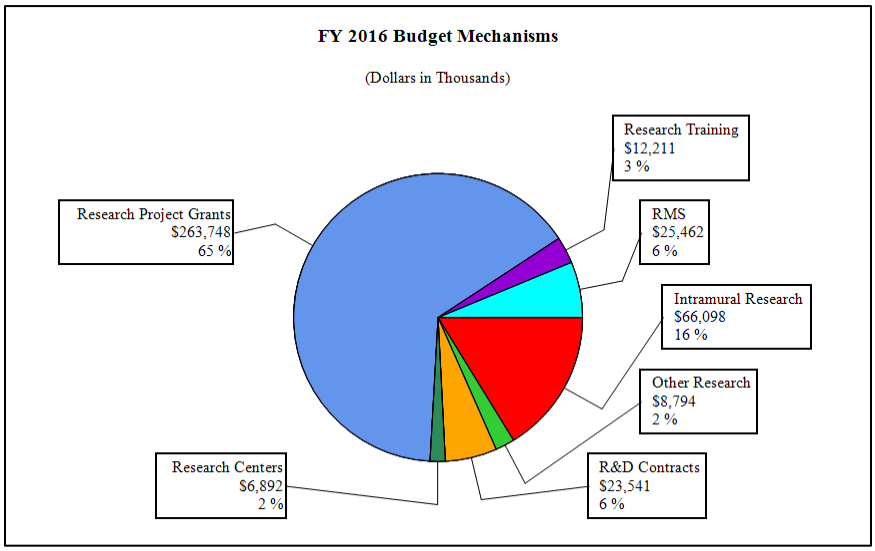
Fiscal Year 2016 Budget Graphs

History of Budget Authority and FTEs:

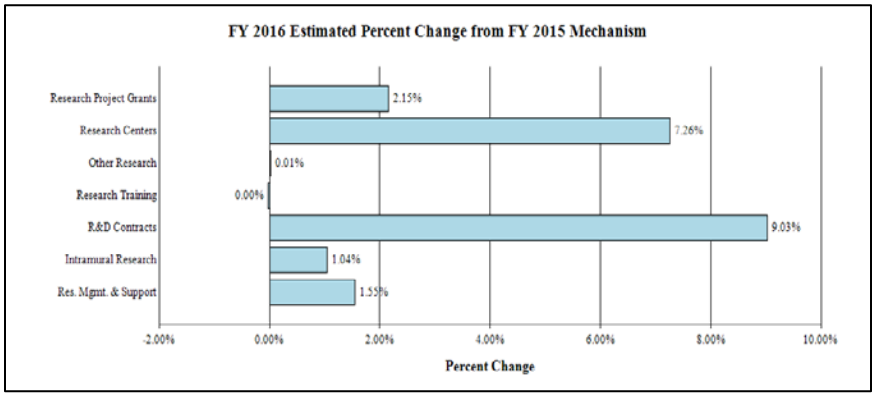




Distribution by Mechanism:



Change by Selected Mechanism:



NATIONAL INSTITUTES OF HEALTH
National Institute of Dental and Craniofacial Research

Budget Authority by Activity[1]
(Dollars in Thousands)

	FY 2014 Actual		FY 2015 Enacted		FY 2016 President's Budget		FY 2015 +/- FY 2014	
Extramural Research	**FTE**	**Amount**	**FTE**	**Amount**	**FTE**	**Amount**	**FTE**	**Amount**
Detail								
Oral and Craniofacial Biology		$190,173		$189,318		$194,235		$4,917
Clinical Research		54,374		54,129		55,535		1,406
Behavioral and Social Sciences		12,768		12,711		13,041		330
Genetics and Genomics		51,280		51,049		52,375		1,326
Subtotal, Extramural		**$308,595**		**$307,207**		**$315,186**		**$7,979**
Intramural Research	**155**	**$64,787**	**153**	**$65,419**	**151**	**$66,098**	**-2**	**$679**
Research Management & Support	**83**	**$24,499**	**86**	**$25,074**	**88**	**$25,462**	**2**	**$388**
TOTAL	**238**	**$397,881**	**239**	**$397,700**	**239**	**$406,746**	**0**	**$9,046**

[1] Includes FTEs whose payroll obligations are supported by the NIH Common Fund.

NATIONAL INSTITUTES OF HEALTH
National Institute of Dental and Craniofacial Research

Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2015 Amount Authorized	FY 2015 Enacted	2016 Amount Authorized	FY 2016 President's Budget
Research and Investigation	Section 301	42§241	Indefinite	$397,700,000	Indefinite	$406,746,000
National Institute of Dental and Craniofacial Research	Section 401(a)	42§281	Indefinite		Indefinite	
Total, Budget Authority				$397,700,000		$406,746,000

NATIONAL INSTITUTES OF HEALTH
National Institute of Dental and Craniofacial Research

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2006	$393,269,000	$393,269,000	$405,269,000	$393,269,000
Rescission				($3,933,000)
2007	$386,095,000	$386,095,000	$389,699,000	$389,703,000
Rescission				$0
2008	$389,722,000	$395,753,000	$398,602,000	$396,632,000
Rescission				($6,929,000)
Supplemental				$2,075,000
2009	$390,535,000	$403,958,000	$401,405,000	$402,652,000
Rescission				$0
2010	$408,037,000	$417,032,000	$409,241,000	$413,236,000
Rescission				$0
2011	$423,511,000		$422,845,000	$413,236,000
Rescission				($3,628,459)
2012	$420,369,000	$420,369,000	$404,997,000	$411,488,000
Rescission				($777,712)
2013	$408,212,000		$409,449,000	$410,710,288
Rescission				($821,421)
Sequestration				($20,614,832)
2014	$411,515,000		$409,947,000	$398,650,000
Rescission				$0
2015	$397,131,000			$399,886,000
Rescission				$0
2016	$406,746,000			

Justification of Budget Request

National Institute of Dental and Craniofacial Research

Authorizing Legislation: Section 301 and title IV of the Public Health Service Act, as amended.

Budget Authority (BA):

	FY 2014 Final	FY 2015 Enacted	FY 2016 President's Budget	FY 2015 +/- FY 2014
BA	$397,881,190	$397,700,000	$406,746,000	+$9,046,000
FTE	238	239	239	0

Program funds are allocated as follows: Competitive Grants/Cooperative Agreements; Contracts; Direct Federal/Intramural and Other.

Director's Overview

The National Institute of Dental and Craniofacial Research (NIDCR) is the lead Federal agency for dental, oral, and craniofacial research and a catalyst for transforming how oral health care is delivered. The Institute's research portfolio carefully integrates basic, translational, clinical, and population sciences to ensure the timely development and delivery of new tools, technologies, and approaches for improving oral health. The Institute's four goals are articulated in the 2014-2019 Strategic Plan: support excellent science; enable precise and personalized oral health care through research; reduce oral health disparities; and ensure a strong and diverse workforce.

Tissue Regeneration

One of the most exciting applications of biomedical research is tissue regeneration. NIDCR's investments in this area range from basic studies of cellular interactions and molecular pathways to the engineering and testing of artificial salivary glands. NIDCR-funded researchers are engineering artificial salivary glands by growing human salivary gland cells within a porous structural framework. Studies in animal models have demonstrated that the artificial salivary gland can survive after implantation. The ultimate goal of such preclinical studies is to restore a patient's ability to produce saliva by creating an artificial gland from a patient's own salivary gland cells.

Another example of progress from basic research is the identification of specific cells within dental, oral, and craniofacial tissues having the potential to develop into multiple cell types for regenerating human tissue. NIDCR-supported researchers exploring the role of the body's immune response in stem cell development and tissue regeneration found that telomerase enzyme is an important link between stem cells and the immune system. This finding is intriguing because telomerase is involved in cellular aging and thus may be a key to enhancing the regenerative capabilities of stem cells. In addition, researchers have observed that the interactions of telomerase, stem cells, and the immune system appear to be affected by aspirin,

and this finding could be translated into a new research approach to enhance stem cell-mediated tissue regeneration.

Innovative Collaborations

To help achieve the goal of translating discoveries in basic research into strategies that improve oral health, NIDCR partners with diverse stakeholders, including clinicians, patients and their advocates, and community members along with other NIH ICs, other Federal agencies, and industry. The Brittle Bone Disorders Consortium of the Rare Diseases Clinical Research Network is an exciting example of the potential of partnerships to translate scientific discoveries into improved oral health. NIDCR is involved in the Consortium's efforts to better understand and treat osteogenesis imperfecta (OI), also known as brittle bone disease. Individuals with OI have brittle teeth and may have changes in the shape of the face. The biotechnology firm Genzyme is providing the partnership with a potential therapeutic agent – an antibody that inhibits the function of a growth factor called transforming growth factor beta (TGF-beta). In animal models of OI, the antibody has been used successfully to restore lost bone. At the same time, another one of NIDCR's partners, the Osteogenesis Imperfecta Foundation, a patient advocacy group, supports research training, workshops, and a web-based training toolbox to enable primary health care providers to incorporate new research knowledge into their treatment strategies. An additional example of a successful partnership is the development of a novel dental restorative material by an NIDCR-funded scientist who is working with the 3M Company. This new dental material can be applied faster and appears to last longer, which promises to improve the experience for patients, as well as reduce the cost of the procedure. NIDCR's initial investment in basic research helped catalyze the discovery and development of this innovation.

Advances in the Use of Data and Technology

New advances in the use of data and technology are revolutionizing dental, oral, and craniofacial research, and NIDCR leads the way in applying these ground-breaking technologies in the laboratory. Until recently, the idea of observing life deep within the tissues of a living animal seemed beyond reach. Now, intravital microscopy is allowing scientists to visualize minute changes in the machinery of individual cells in living rodents. NIDCR helped pioneer this technology and has used it to unravel complex pathways of metabolism and communication that occur within and between cells in live animals to define the molecular machinery of saliva secretion and to examine progression of oral cancer. Applying new technologies to explore abnormalities at the cellular and molecular level in animal models will enable NIDCR researchers to better understand the mechanisms involved in human diseases. For example, NIDCR-supported studies capitalizing on technology are offering new insights into dry mouth, a condition that can lead to serious adverse health effects and sharply diminish quality of life. Improved approaches to prevent, diagnose, manage, and treat dental, oral, and craniofacial diseases will stem from a richer understanding of the incredibly dynamic and intricate interactions of molecules in both normal and abnormal cellular behavior.

Training and Development

NIDCR is committed to research training and career development programs that result in a vibrant scientific workforce that is equipped to meet the challenges of the future. These programs target a wide range of scientific fields and career stages, incorporating interdisciplinary training and promotion of the dentist scientist career path. For example, NIDCR launched an institutional career development award to enhance research capacity in the fields of

temporomandibular joint disorders and orofacial pain. NIDCR is also committed to increasing workforce diversity using a variety of approaches that include developing a network of NIDCR mentors as part of the National Research Mentoring Network and supporting individual predoctoral fellowships and administrative research supplements to promote diversity in health-related research. NIDCR also funds innovative scientists in various career stages as part of the NIH Common Fund's High-Risk, High-Reward program. This research already has spurred advances in knowledge about tooth and taste bud development and the complexities of antibiotic resistance.

To accelerate advances in dental, oral, and craniofacial research, NIDCR is introducing several new initiatives for FY 2016. The Institute will encourage research to define the role and mechanisms of immune system plasticity in health and in diseases of dental, oral, and craniofacial tissues. NIDCR will also support the development of tools and technologies that modify the immune system to respond to disease and restore normal health. Other initiatives will determine how genetic variations influence an individual's sensitivity to pain and response to pain therapies, investigate the use of HIV vaccines for direct delivery into oral tissues, and develop the next-generation dental restorative materials to treat tooth decay specifically affecting the tooth root. And to address a burgeoning public health issue, NIDCR will encourage research on how the components of e-cigarettes may harm oral tissues.

Overall Budget Policy: The FY 2016 President's Budget request for NIDCR is $406.746 million, an increase of $9.046 million or 2.3 percent over the FY 2015 Enacted level. In FY 2016, NIH would provide an increase of two percent for stipends under the Ruth L. Kirschstein National Research Service Award training program and special emphasis will be given to training, mentoring and advancing a diverse workforce in dental, oral, and craniofacial research.

Program Descriptions and Accomplishments

Oral and Craniofacial Biology: The Oral and Craniofacial Biology program supports a diverse portfolio of basic and translational studies in research areas including hard and soft tissue development and regeneration/repair; infections and immunity; oral complications from HIV/AIDS and other systemic conditions; salivary gland physiology in health and disease; head and neck cancers; and chronic orofacial pain. This diversity reflects the complexity of the cells, tissues, structures, and diseases of the dental, oral, and craniofacial region, which provides a powerful system for biomedical discovery.

NIDCR has a long-standing interest in cancers of the dental, oral, and craniofacial region. Research into the genetic alterations that may play a role in initiation and progression of oral cancers is increasing knowledge of the molecules and pathways involved in these processes. These studies have the potential to lead to the identification of new, more effective therapies that hit multiple targets in a cancer cell. Building on this momentum, NIDCR-funded research is shedding light on the role of cancer-initiating cells known as cancer stem cells. Cancer treatments would be greatly improved if these stem cells could be specifically targeted and eliminated. Other areas of support relevant to oral and pharyngeal cancer include studies to investigate the causal relationship between human papilloma virus (HPV) and oral cancer. For example, to understand the potential effect of the HPV vaccine on oral cancer, investigators are

examining data on HPV-associated cervical and oral cancer in American women. These studies suggest there are a number of similarities between the two types of HPV-associated cancers and may allow a more detailed examination of potential risk factors, e.g., identify and validate biomarkers, as well the impact of the HPV vaccine on the rates of oral cancer.

Virus-associated oral infections and cancers are a significant public health issue. NIDCR is committed to supporting research on oral complications due to infections from HIV and other viruses, as well as oral complications from bacterial and fungal infections. For example, in response to a recent initiative, scientists have been examining the role of the host epigenome, which comprises non-genetic changes to the DNA that may alter levels of gene expression in infected cells in response to viruses. One such study showed that these epigenetic changes make oral cells more likely to support the virus that causes the cancer Kaposi's sarcoma, suggesting there may be ways to modify oral cells to make them less susceptible to infection.

In FY 2016, NIDCR will launch an initiative to explore the potential advantages of developing an HIV vaccine administered directly into oral tissues. This exciting research area will complement other HIV vaccine studies being supported at NIH and recognizes the distinctiveness of the oral environment as an entry point for vaccines.

In 2008, the oral cavity was designated as one of five priority sites in the NIH Human Microbiome Project (HMP). HMP is one of several international efforts designed to take advantage of large scale, high throughput analyses to study the microbiome in human health. The first phase of the HMP characterized the composition and diversity of a number of microbial communities. Now in its second phase, HMP is generating and releasing integrated data to understand the role that these diverse communities play in human health and disease. In a related effort, NIDCR supports the Human Oral Microbiome database, a community resource providing comprehensive information on over 700 different microbial species present in the oral cavity. Because progress is slowed by the fact that some microbial species are difficult to grow and study in the laboratory, researchers are attempting to devise a method of overcoming this technical challenge. Only through such technological advances will scientists be equipped to describe the interplay between the oral microbiome and human health.

Program Portrait: Targeting the Immune System to Improve Oral Health

FY 2015 Level: $47.2 million
FY 2016 Level: $48.3 million
Change**:** $ 1.1 million

In 1980, a young boy was found to have an unusual history of chronic skin and ear infections. He suffered from a rare disorder of the immune system called leukocyte adhesion deficiency type 1 (LAD-1), which impairs the ability of immune cells called neutrophils to fight off oral and other infections. LAD-1 also increases a child's risk of developing an inflammatory disease called periodontitis, which involves the periodontal tissue that surrounds teeth. In some of these children, the inflammation of the periodontal tissue is so severe that permanent teeth can loosen or be lost during childhood. By their 20s, most people with LAD-1 have lost several, if not all, of their permanent teeth.

Conventional wisdom has long maintained that periodontitis, which is so common that it occurs in about half of American adults,[1] was primarily due to the oral bacteria that infected the periodontal tissue, relegating the immune system to a secondary role in inflammation. But evidence showing that children with primary immune deficiencies, such as LAD-1, suffer from severe periodontitis pointed to a more direct correlation between the immune system and inflammatory diseases of the mouth. Intramural scientists at NIDCR and the National Institute of Allergy and Infectious Diseases, in collaboration with NIDCR-funded researchers at the University of Pennsylvania, showed that the inability of neutrophils to be recruited into tissues did not lead to invasive oral infections as was thought previously, but rather to an excessive production of a small signaling protein called IL-17, which is known to trigger inflammation and bone loss. Using a mouse model of LAD-1, researchers showed that local treatment with antibodies to inhibit IL-17 blocked inflammatory periodontal bone loss and reduced the growth of bacteria. These findings have opened up a potential new therapeutic target for patients with LAD-1 and severe periodontitis. Furthermore, they suggest that IL-17 may have a significant impact on other aggressive forms of periodontitis as well as oral and craniofacial diseases that are related to the immune system, such as Sjögren's syndrome. NIDCR is targeting this link between the immune system and oral diseases in a new initiative focused on immune plasticity, which are the changes in the immune system that can contribute to the onset, progression, and persistence of many infectious and inflammatory diseases. NIDCR is poised to apply this knowledge to the development of clinical strategies that treat or prevent oral and craniofacial diseases that are related to the immune system.

NIDCR is a long-time supporter of research on pain, including temporomandibular joint disorders (TMDs), a group of conditions that can result in disabling jaw and facial pain. The Orofacial Pain: Prospective Evaluation and Risk Assessment (OPPERA) study is an ongoing project that has already yielded a wealth of data on the role of behavioral, genetic, and psychological factors in orofacial pain. Continuing work in the next phase of the study, called OPPERA II, is identifying genetic variations that affect development of TMD and the transition from acute to chronic TMD. The work has shown that although almost no difference exists in the rate at which men and women develop TMD for the first time, females are far more likely than males to progress to chronic TMD. Scientists will continue to examine potential causes of this difference, which should lead to more targeted strategies for detecting and managing TMD in the future. NIDCR is also collaborating with other NIH ICs to support research on orofacial pain, for example in a joint initiative with the National Institute of Biomedical Imaging and Bioengineering on the biology of the temporomandibular joint in health and disease.

Because people with TMD often have other chronic painful conditions, such as fibromyalgia or irritable bowel syndrome (IBS), scientists from the OPPERA study are working with other NIH-

[1] Eke PI, Dye BA, Wei L, Thornton-Evans GO, et al. Prevalence of Periodontitis in Adults in the United States: 2009 and 2010. J Dent Res. 2012; 91:914-20.

funded large scale pain research endeavors to identify strategies to synergize these investments. Studies have found that chronic painful conditions share common factors for susceptibility, severity, and progression. To facilitate the study of factors involved in development of multiple chronic pain conditions, investigators have developed an animal model of TMD and IBS. This animal model will also provide a powerful system for testing potential therapies.

The developmental history of a new drug that could be used to help wounds heal is an illustration of NIDCR's commitment to translating scientific advances from basic research into commercial products that improve people's lives. After NIDCR-sponsored research revealed the mechanisms of wound healing, a new drug was developed to reduce scarring in children who have undergone cleft lip and palate surgery. After successfully completing a Phase I Small Business Innovation Research award that established the technical merit, feasibility, and commercial potential of the drug, this research project has now entered Phase II.

Budget Policy: The FY 2016 President's Budget estimate for this program is $194.235 million, an increase of $4.917 million or 2.6 percent compared to the FY 2015 Enacted level. High priority will be given to ongoing oral and craniofacial biology and a number of new initiatives.

NIDCR plans to launch a new initiative encouraging in-depth research into the role of the immune system in the onset, progression, and persistence of infection, inflammatory diseases, and oral cancer to inform future therapeutic approaches. NIDCR will also pursue potential collaborations with other NIH institutes and centers that share an interest in these diseases to leverage available research opportunities and resources. In FY 2016, the Institute will launch an initiative to encourage investigation of the biological impact of e-cigarettes on oral health, including the development of new tools and clinically-relevant model systems to assess their effects on oral and periodontal tissues. In addition, NIDCR will continue to fund an initiative to establish a multidisciplinary Dental, Oral, and Craniofacial Tissue Regeneration Consortium. The Consortium will accelerate the translation of tissue engineering and regenerative medicine tools and strategies into preclinical testing and clinical trials.

Clinical Research: This program encourages investigations to translate findings from NIDCR's basic research portfolio into clinical applications by supporting a range of research approaches, including complex clinical trials, interventions delivered by dental practitioners, and community-based studies that aim to reduce and eliminate oral health disparities. The program addresses a wide array of diseases and conditions of the dental, oral, and craniofacial region, such as dental caries (tooth decay); periodontal diseases; birth defects such as cleft lip and palate; chronic orofacial pain conditions; oral and pharyngeal cancers; and oral manifestations of systemic diseases, such as Sjögren's syndrome, diabetes, and HIV infection.

Recognizing the need to build the evidence base for dentistry, NIDCR continues to invest in dental practice-based research. In 2012, the University of Alabama at Birmingham was awarded a seven-year grant to establish and lead the National Dental Practice-Based Research Network. The Network has over 4,500 dental practitioners, including general dentists, hygienists, and dental specialists working in private practice, community clinics, and academic settings. The Network conducts a variety of clinical studies, such as examining the potential benefits of devices for detecting dental decay, improving diagnosis and treatment of cracked teeth, screening for oral HPV infection, and testing a dentist-delivered quit-smoking program. The primary

objective of each study is to strengthen the knowledge base for clinical decision-making by evaluating clinical approaches and the effectiveness of strategies for the prevention, management, and treatment of oral diseases and conditions.

NIDCR investments have led to many approaches for promoting oral health and preventing oral disease, but these strategies do not always reach people and communities who need them most. Findings from the NIDCR-funded Center for Native Oral Health Research at the University of Colorado show that despite some modest improvements, poor oral health remains a major problem in the Navajo Nation and among American Indians overall. One study showed that about 70 percent of Navajo children had untreated tooth decay, and although the rate may have decreased from about 83 percent over the past fifteen years, it remains three to four times higher than national average,[2] and often requires operating room treatment due to the severity of their oral disease. As NIDCR discovers and adopts better methods to prevent, diagnose, and treat disease, NIDCR must also improve its ability to translate and disseminate this knowledge effectively to oral health care providers, decision makers, and to those groups at greatest risk for poor oral health. In FY 2015, two new funding opportunities were released encouraging research that takes a holistic, multilevel approach in establishing effective interventions to reduce or eliminate oral health disparities and inequalities in vulnerable U.S. children.

Budget Policy: The FY 2016 President's Budget estimate for this program is $55.535 million, an increase of $1.406 million or 2.6 percent compared to the FY 2015 Enacted level. High priority will be given to ongoing clinical initiatives, and one new initiative.

NIDCR will support efforts to develop innovative new restoratives that are effective for a specific type of tooth decay affecting the root, called Class V lesions. These restorations are more likely to fail and are common in aging individuals due to recession of their gingival tissues (gums). As part of this initiative, materials scientists will form multidisciplinary research teams to bring greater investigative power to bear on this difficult and complex research challenge.

Behavioral and Social Sciences Research: The Behavioral and Social Sciences Research Program supports efforts to understand how behavioral and social factors influence oral health and to develop strategies for effective interventions to prevent and treat oral diseases. The program has a diverse portfolio that focuses on improving public oral health, including preventing and treating childhood dental disease and improving the oral health of vulnerable individuals. Additional research areas include tobacco cessation, orofacial pain management, oral and pharyngeal cancer treatment recovery, and the establishment of life-long habits to improve oral health.

NIDCR supports studies to establish measures of specific behavioral or social phenomena that can then be used to test causal hypotheses about behavioral and social factors that contribute to dental, oral, or craniofacial diseases. This critical piece of the puzzle is required to determine which behavioral strategies are successful. Complementing these behavioral and social science measurement studies are efforts to incorporate the patient perspective in behavioral and social science research, especially which aspects of oral health are most important to the patient. For

[2] Batliner et al. Oral health status in Navajo Nation Head Start children. J Public Health Dent., 2014 Jun 23; Epub ahead of print.

example, scientists are developing oral health quality of life measures that are uniquely tailored to specific populations, such as children with cleft lip and palate. In particular, this research considers the quality of life for both the child and the parents or caregivers.

The Institute partners with a number of stakeholders to advance dental, oral, and craniofacial behavioral and social science research. For example, the Institute is collaborating with the Association for Psychological Science (APS) to fund the NIDCR Building Bridges Travel Award. This award encourages investigators who are conducting rigorous behavioral and social science studies in other fields to apply their expertise to solving oral health challenges. After hosting this award at the 2013 APS meeting, three of the five awardees have since submitted grant applications related to oral health. NIDCR also co-leads a trans-NIH initiative on the Science of Behavior Change. The purpose of this effort is to accelerate advances in behavior change related to a broad range of health-related behaviors, including adherence to prevention and treatment regimens.

Budget Policy: The FY 2016 President's Budget request for this program is $13.041 million, an increase of $0.330 million or 2.6 percent compared to the FY 2015 Enacted level. Priority will be given to support ongoing initiatives, especially those that contribute to an understanding of behavioral and social mechanisms required for advancing oral health.

In FY 2016 NIDCR will build on its investments in supporting clinical trials that identify behavioral interventions to improve oral health across a range of patient populations and underserved communities. NIDCR will continue to support the development and implementation of research tools to understand how behavioral interventions work. The research program will focus on multidisciplinary and team science that draws on the expertise of researchers from multiple fields of study. NIDCR will also support training and mentoring opportunities for investigators to acquire the knowledge and skills required to conduct rigorous research in this area.

Translational Genetics and Genomics: The Translational Genetics and Genomics program supports the timely transfer of discoveries in genetics, genomics, and developmental biology into improved prevention and treatment of dental, oral, and craniofacial disorders. In addition, the program supports research in emerging data science fields that require the development of tools and technologies to collect, integrate, and disseminate large sets of data. This diverse portfolio includes studies that range from uncovering molecular mechanisms in model organisms and humans to population-level research, all with the aim of translating basic science into clinical practice.

Program Portrait: Cleft Lip and Palate: From Genetics to Improved Patient Outcomes

FY 2015 Level: $16.6 million
FY 2016 Level: $17.0 million
Change**:** $0.4 million

Our faces are a tangible part of our individuality, a unique physical manifestation of ourselves and an incredibly important part of how we relate to the world. For an individual to cope with even mild, let alone extreme, facial anomalies can be quite challenging. One common condition is cleft lip with or without cleft palate (CLP), resulting from a failure of facial tissue to properly join together in the center of the face during fetal development. In addition to years of difficult surgeries, children with CLP can have problems eating, hearing, speaking, and maintaining oral health.

NIDCR supports research aimed at identifying the genetic causes of CLP and developing better treatment strategies to improve the quality of life of these children. Recent studies of CLP have identified candidate genomic regions and genetic variants for CLP, as well as an interplay between environmental and genetic risk factors. For example, the gene called Rho GTPase activating protein 29 is involved in essential cellular functions during craniofacial development and has been recently linked to CLP. These studies have also shown that CLP is part of a broader spectrum of health conditions that can include weakness in facial structure and tissue and is associated with a higher risk of poor wound healing. Family members who share the same genetic variation may also be at increased risk for these associated conditions. These findings emphasize the importance of CLP patients and their families working with their dentists and other health care providers to monitor their overall health and well-being.

Recognizing the importance of the partnership among patients, families, and the health care team, another NIDCR-funded study is investigating whether families are willing and able to adhere to the intensive treatment schedule required of a new CLP surgical repair technique. As new treatments are developed, studies such as these will help the health care team anticipate and overcome the barriers to treatment success. Studies are also pinpointing the optimum age for babies to undergo surgery to enable normal speech development. Other studies are focused on perfecting an orthodontic technique called maxillary protraction to help correct an under bite, the abnormal protrusion of the lower jaw, to mitigate the need for painful surgery. This study is the first multi-site clinical trial to compare the effectiveness of nonsurgical treatment against the current surgical standard of care.

Treating children with CLP goes beyond correcting the craniofacial abnormality and includes approaches to assess and improve their social, emotional, and physical well-being. NIDCR-supported research shows that children with CLP do not perform as well academically as their peers and are more likely to use special education services. This finding suggests that these children would benefit not only from early evaluations of their academic progress, but also from utilizing specific interventions tailored to enhance their education. As researchers continue to expand the knowledge base, novel treatment strategies will emerge to prevent, diagnose, and treat craniofacial disorders such as CLP to improve the lives of these children.

A major focus of the program is investigation of genetic regulation of craniofacial development. This research dovetails with NIDCR's commitment to understand, prevent, and treat craniofacial disorders, such as cleft lip, cleft palate, and the premature fusion of bones in the skull (craniosynostosis). An exciting area of study is the link between embryonic development and evolutionary biology. All organisms utilize a common developmental tool kit; however, this tool kit has been used slightly differently over evolutionary time, resulting in countless unique facial shapes and features across species. Research to deduce how this common tool kit is employed in different ways to achieve facial variation will offer important insights into how facial development occurs and highlights the value of studying diverse sets of model organisms. Scientists are also investigating the genetic variations that underlie craniofacial disorders. For

example, Van der Woude syndrome is a condition where the cleft lip and palate is just one piece of a broader disorder that also affects the teeth, heart, brain, and limbs. NIDCR-funded investigators have shown that Van der Woude syndrome is associated with variations in a gene called grainyhead-like 3 (GRHL3). Additional studies in mice and fish supporting the link between GRHL3 gene and Van der Woude syndrome will help to decipher how facial development occurs and what happens when it goes awry.

One of the major challenges for scientific research is how best to handle the large amounts of data that are routinely generated in this information age of biomedicine. To tackle this problem for craniofacial development, NIDCR is supporting the collaborative FaceBase Consortium that collects, integrates, and disseminates a variety of data types, including genomics and gene expression information along with human facial imagery. For example, a large-scale atlas detailing gene expression levels and locations during early mouse craniofacial development was recently generated as a part of FaceBase. This comprehensive endeavor provides a more integrated view of craniofacial development and is available to all researchers through the FaceBase consortium website. Because of the success of the first phase of FaceBase, NIDCR has funded a complementary second iteration called FaceBase 2 to expand the area of the face and skull under study.

Budget Policy: The FY 2016 President's Budget estimate for this program is $52.375 million, an increase of $1.326 million or 2.6 percent compared to the FY 2015 Enacted level. High priority will be given to support meritorious new multidisciplinary research projects, ongoing initiatives, and a new initiative to better define how genetic variables can impact an individual's pain sensitivity and the effectiveness of pain medications or other therapies. Identifying these genetic variables will be critical for developing personalized treatment plans to effectively control orofacial pain and prevent adverse reactions**.**

Intramural Research: Cutting-edge investigations within the NIDCR Intramural Research Program are focused on essential aspects of dental, oral, and craniofacial health. Topics include the biology of pain, itch, and taste; oral and craniofacial genetics and development; immunology of the mucosal system; head and neck cancers; and stem cell biology and tissue regeneration. Intramural scientists also take advantage of the world class NIH Clinical Center and collaborate with extramural colleagues to translate knowledge into new treatment strategies. The Intramural Program aims to improve public health by combining knowledge gained from basic, translational, and clinical research to prevent, diagnose, and treat dental, oral, and craniofacial disorders.

One area of intramural research that bridges basic, translational, and clinical science is the study of head and neck squamous cell carcinoma. A recent exciting study demonstrated that the central structure of the cell, called the nucleus, acts like a piston in an engine to propel the cell forward. These and other new findings are now being applied to studying how cancer cells spread through the body to harm other tissues. By understanding what enables cancer cell movement, scientists may be able to develop targeted therapies that halt the spread of cancer.

Program Portrait: Rare Diseases Provide New Insights into Disorders of Bones and Teeth

FY 2015 Level: $49.3 million
FY 2016 Level: $50.5 million
Change: $1.2 million

NIDCR supports research on a number of rare diseases to help define optimal care and improve the quality of life for individuals with these disorders. Such research provides insights into the molecular mechanisms of more common diseases and so can inform therapies for broader applications beyond rare diseases. NIDCR scientists, in collaboration with other NIH Institutes and Centers and with the private sector, are studying a number of rare diseases that cause disturbances in the mineralization process required to keep bones and teeth strong. When bone mineralization is disrupted, the effects can cause extensive abnormalities in the teeth and the bones of the jaw and face, and these abnormalities can be devastating for quality of life.

NIDCR research is offering new insights into the mechanisms of certain rare bone disorders. For example, NIDCR scientists studying a disease of bone fragility known as fibrous dysplasia/McCune-Albright syndrome discovered that the hormone fibroblast growth factor 23 (FGF23) plays an important role in controlling the levels of phosphate, a key mineral in bones and teeth. Individuals with a rare condition called tumor-induced osteomalacia have too much FGF23, and thus too little phosphate, which results in severe mineralization defects throughout the body. After earlier studies suggested a role for parathyroid hormone in regulation of FGF23, a team of NIDCR scientists found that using a drug to lower parathyroid hormone could reverse the negative effects of FGF23 on bone in individuals with tumor-induced osteomalacia. These findings have led to a larger clinical trial currently underway to treat a variety of individuals suffering from disorders caused by too much FGF23 in the body.

Another rare disease under investigation by NIDCR scientists is autosomal dominant hypoparathyroidism (ADH). Individuals with ADH have abnormally low blood calcium, which can lead to muscle spasms, seizures, and even death. NIDCR has established a new joint venture with NPS Pharmaceuticals, Inc., to test a novel application of a repurposed drug to treat individuals with ADH. This translational partnership is also pursuing new treatment strategies for other related diseases of bones and teeth.

The NIDCR Intramural Program has a strong investment in understanding salivary gland development, function, and disorders. Knowledge about salivary gland development can be translated into novel strategies to protect and regenerate damaged salivary gland tissue. For example, work has shown that the use of a neuroprotective factor, neurturin, can protect salivary glands from the damaging effects of radiation therapy for head and neck cancer. Neurturin was found to improve gland regeneration in animal models by preventing cell death of the nerve cells that communicate with the salivary gland. Because Sjögren's syndrome harms the salivary glands, NIDCR researchers have developed a new animal model of Sjögren's syndrome, which will be essential for testing potential therapies. It was recently discovered that a small RNA molecule involved in Sjögren's syndrome may aid in diagnosis and treatment, and now researchers are performing additional whole genome sequencing of patients to identify genetic variants involved in the disease.

Intramural scientists in the NIH Clinical Center are combining innovative technologies with the power of big data to better understand craniofacial abnormalities and the unique genetic differences that result in distinctive facial features. Using state-of-the-art three-dimensional imaging, NIDCR scientists are mapping individual faces to create a database of both rare and common facial anomalies. This imaging database is being coupled with genetic information to help identify the genetic changes underlying similarities and differences in facial development. The incorporation of bioinformatics technology will improve the management of these large datasets to allow data sharing and collaborations with other members of the research community.

The Intramural Program maintains a strong commitment and investment in training the next generation of oral health researchers using a number of strategies, including summer intern

awards, support for clinical dentistry career development, and pathway to independence awards to help junior investigators launch their careers.

Budget Policy: The FY 2016 President's Budget estimate for this program is $66.098 million, an increase of $0.679 million or 1 percent compared to the FY 2015 Enacted level. High priority will be given to support meritorious new research projects and ongoing initiatives.

One area of intramural research bridging basic, translational, and clinical science is the study of head and neck squamous cell carcinoma (HNSCC). NIDCR researchers are working to understand the genetic variations that cause changes in cellular pathways that drive the progression from premalignant lesions to cancer. With this knowledge, NIDCR scientists plan to develop novel approaches to prevent this progression in individuals harboring high-risk genetic alterations. Intramural investigators are increasingly interested in the role of HPV infection in HNSCC. They are developing strategies to target multiple pathways simultaneously in patients with genetic risk factors or carrying HPV, thus increasing the chances of effectively treating these cancers.

Intramural scientists will continue to develop novel approaches to study the pathways that regulate stem and progenitor cells in salivary glands and bones, with the goal of translating this knowledge into strategies to regenerate and repair these tissues. Clinical investigators will continue to characterize the immune cell network in human oral mucosa and to investigate the role of the oral microbiome and immune responses within the oral cavity in patient populations suffering from oral inflammatory conditions such as periodontal disease, chronic wound healing and Sjögren's syndrome. NIDCR supports scientists using state-of-the-art techniques coupling molecular genetics with microscopy to open new avenues for alleviating chronic pain and itch. These and other intramural studies are paving the way for the development of cutting-edge translational therapies and interventions to improve public health.

Research Management and Support (RMS): The RMS budget supports the scientific, administrative management, information technology, communication, and clinical trial and management activities associated with NIDCR's operations. These activities support the review, award, and monitoring of research grants, training awards, and research and development contracts. The Office of Science Policy and Analysis leads strategic planning and evaluation activities along with internal coordination, reporting, and liaison activities with other Federal agencies and Congress. In the summer of 2014, NIDCR released its 2014-2019 Strategic Plan to help guide the Institute over the next six years. The Office of Communications and Health Education develops, implements, and evaluates the Institute's science, health, and digital communication programs. These programs are designed to promote the timely transfer of knowledge gained from research and its implications for health to scientists, health professionals, policy makers, patients, the general public, and the media.

Budget Policy: The FY 2016 President's Budget estimate for this program is $25.462 million, an increase of $0.388 million or 1.5 percent compared to the FY 2015 Enacted level.

NIDCR will use these resources to fund the scientific and administrative management and oversight activities of the Institute.

NATIONAL INSTITUTES OF HEALTH
National Institute of Dental and Craniofacial Research

Budget Authority by Object Class[1]

(Dollars in Thousands)

	FY 2015 Enacted	FY 2016 President's Budget	FY 2016 +/- FY 2015
Total compensable workyears:			
Full-time employment	239	239	0
Full-time equivalent of overtime and holiday hours	0	0	0
Average ES salary	$167	$168	$2
Average GM/GS grade	11.5	11.5	0.0
Average GM/GS salary	$95	$96	$1
Average salary, grade established by act of July 1, 1944 (42 U.S.C. 207)	$100	$101	$1
Average salary of ungraded positions	$125	$127	$1

	OBJECT CLASSES	FY 2015 Enacted	FY 2016 President's Budget	FY 2016 +/- FY 2015
	Personnel Compensation			
11.1	Full-Time Permanent	$13,962	$14,180	$218
11.3	Other Than Full-Time Permanent	10,424	10,568	144
11.5	Other Personnel Compensation	584	592	8
11.7	Military Personnel	193	196	3
11.8	Special Personnel Services Payments	3,843	4,046	203
11.9	**Subtotal Personnel Compensation**	**$29,006**	**$29,582**	**$576**
12.1	Civilian Personnel Benefits	$8,137	$8,346	$209
12.2	Military Personnel Benefits	82	84	1
13.0	Benefits to Former Personnel	0	0	0
	Subtotal Pay Costs	**$37,225**	**$38,012**	**$787**
21.0	Travel & Transportation of Persons	$607	$594	-$13
22.0	Transportation of Things	59	60	1
23.1	Rental Payments to GSA	0	0	0
23.2	Rental Payments to Others	0	0	0
23.3	Communications, Utilities & Misc. Charges	369	372	3
24.0	Printing & Reproduction	0	0	0
25.1	Consulting Services	$2,144	$2,176	$32
25.2	Other Services	4,934	4,683	-251
25.3	Purchase of goods and services from government accounts	49,812	52,569	2,757
25.4	Operation & Maintenance of Facilities	$365	$365	$0
25.5	R&D Contracts	7,433	7,449	16
25.6	Medical Care	152	155	4
25.7	Operation & Maintenance of Equipment	2,137	2,149	12
25.8	Subsistence & Support of Persons	0	0	0
25.0	**Subtotal Other Contractual Services**	**$66,975**	**$69,546**	**$2,570**
26.0	Supplies & Materials	$3,763	$3,536	-$227
31.0	Equipment	3,086	2,982	-104
32.0	Land and Structures	0	0	0
33.0	Investments & Loans	0	0	0
41.0	Grants, Subsidies & Contributions	285,616	291,645	6,029
42.0	Insurance Claims & Indemnities	0	0	0
43.0	Interest & Dividends	0	0	0
44.0	Refunds	0	0	0
	Subtotal Non-Pay Costs	**$360,475**	**$368,734**	**$8,259**
	Total Budget Authority by Object Class	**$397,700**	**$406,746**	**$9,046**

[1] Includes FTEs whose payroll obligations are supported by the NIH Common Fund.

NATIONAL INSTITUTES OF HEALTH
National Institute of Dental and Craniofacial Research

Salaries and Expenses
(Dollars in Thousands)

OBJECT CLASSES	FY 2015 Enacted	FY 2016 President's Budget	FY 2016 +/- FY 2015
Personnel Compensation			
Full-Time Permanent (11.1)	$13,962	$14,180	$218
Other Than Full-Time Permanent (11.3)	10,424	10,568	144
Other Personnel Compensation (11.5)	584	592	8
Military Personnel (11.7)	193	196	3
Special Personnel Services Payments (11.8)	3,843	4,046	203
Subtotal Personnel Compensation (11.9)	**$29,006**	**$29,582**	**$576**
Civilian Personnel Benefits (12.1)	$8,137	$8,346	$209
Military Personnel Benefits (12.2)	82	84	1
Benefits to Former Personnel (13.0)	0	0	0
Subtotal Pay Costs	**$37,225**	**$38,012**	**$787**
Travel & Transportation of Persons (21.0)	$607	$594	-$13
Transportation of Things (22.0)	59	60	1
Rental Payments to Others (23.2)	0	0	0
Communications, Utilities & Misc. Charges (23.3)	369	372	3
Printing & Reproduction (24.0)	0	0	0
Other Contractual Services:			
Consultant Services (25.1)	603	611	8
Other Services (25.2)	4,934	4,683	-251
Purchases from government accounts (25.3)	37,389	38,248	859
Operation & Maintenance of Facilities (25.4)	365	365	0
Operation & Maintenance of Equipment (25.7)	2,137	2,149	12
Subsistence & Support of Persons (25.8)	0	0	0
Subtotal Other Contractual Services	**$45,427**	**$46,055**	**$628**
Supplies & Materials (26.0)	$3,763	$3,536	-$227
Subtotal Non-Pay Costs	**$50,225**	**$50,617**	**$392**
Total Administrative Costs	**$87,450**	**$88,629**	**$1,178**

NATIONAL INSTITUTES OF HEALTH
National Institute of Dental and Craniofacial Research

Detail of Full-Time Equivalent Employment (FTE)

OFFICE/DIVISION	FY 2014 Actual			FY 2015 Est.			FY 2016 Est.		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
Division of Extramural Activities									
Direct:	20	-	20	20	-	20	20	-	20
Reimbursable:	-	-	-	1	-	1	-	-	-
Total:	20	-	20	21	-	21	20	-	20
Division of Extramural Research									
Direct:	25	-	25	25	-	25	25	-	25
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	25	-	25	25	-	25	25	-	25
Division of Intramural Research									
Direct:	148	1	149	146	1	147	144	1	145
Reimbursable:	6	-	6	6	-	6	6	-	6
Total:	154	1	155	152	1	153	150	1	151
Office of Administrative Management									
Direct:	12	-	12	12	-	12	12	-	12
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	12	-	12	12	-	12	12	-	12
Office of Clinical Trial Operations and Management									
Direct:	3		3	3		3	3		3
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	3		3	3		3	3		3
Office of Communication and Health Education									
Direct:	6	-	6	7	-	7	8	-	8
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	6	-	6	7	-	7	8	-	8
Office of Information Technology									
Direct:	7	-	7	7	-	7	7	-	7
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	7	-	7	7	-	7	7	-	7
Office of Science Policy and Analysis									
Direct:	7	-	7	8	-	8	9	-	9
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	7	-	7	8	-	8	9	-	9
Office of the Director									
Direct:	2	1	3	3	-	3	4	-	4
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	2	1	3	3	-	3	4	-	4
Total	236	2	238	238	1	239	238	1	239
Includes FTEs whose payroll obligations are supported by the NIH Common Fund.									
FTEs supported by funds from Cooperative Research and Development Agreements.	0	0	0	0	0	0	0	0	0

FISCAL YEAR	Average GS Grade
2012	11.4
2013	11.4
2014	11.5
2015	11.5
2016	11.5

NATIONAL INSTITUTES OF HEALTH
National Institute of Dental and Craniofacial Research

Detail of Positions[1]

GRADE	FY 2014 Actual	FY 2015 Enacted	FY 2016 President's Budget
Total, ES Positions	0	1	1
Total, ES Salary	0	166,526	168,191
GM/GS-15	17	17	17
GM/GS-14	25	25	25
GM/GS-13	27	27	27
GS-12	29	30	30
GS-11	13	13	13
GS-10	0	0	0
GS-9	15	15	15
GS-8	10	10	10
GS-7	8	8	8
GS-6	7	7	7
GS-5	2	2	2
GS-4	0	0	0
GS-3	0	0	0
GS-2	1	1	1
GS-1	0	0	0
Subtotal	154	155	155
Grades established by Act of July 1, 1944 (42 U.S.C. 207)	0	0	0
Assistant Surgeon General	0	0	0
Director Grade	1	0	0
Senior Grade	0	0	0
Full Grade	1	1	1
Senior Assistant Grade	0	0	0
Assistant Grade	0	0	0
Subtotal	2	1	1
Ungraded	89	89	89
Total permanent positions	154	155	155
Total positions, end of year	247	248	248
Total full-time equivalent (FTE) employment, end of year	238	239	239
Average ES salary	0	166,526	168,191
Average GM/GS grade	11.5	11.5	11.5
Average GM/GS salary	94,111	95,052	96,003

[1] Includes FTEs whose payroll obligations are supported by the NIH Common Fund.