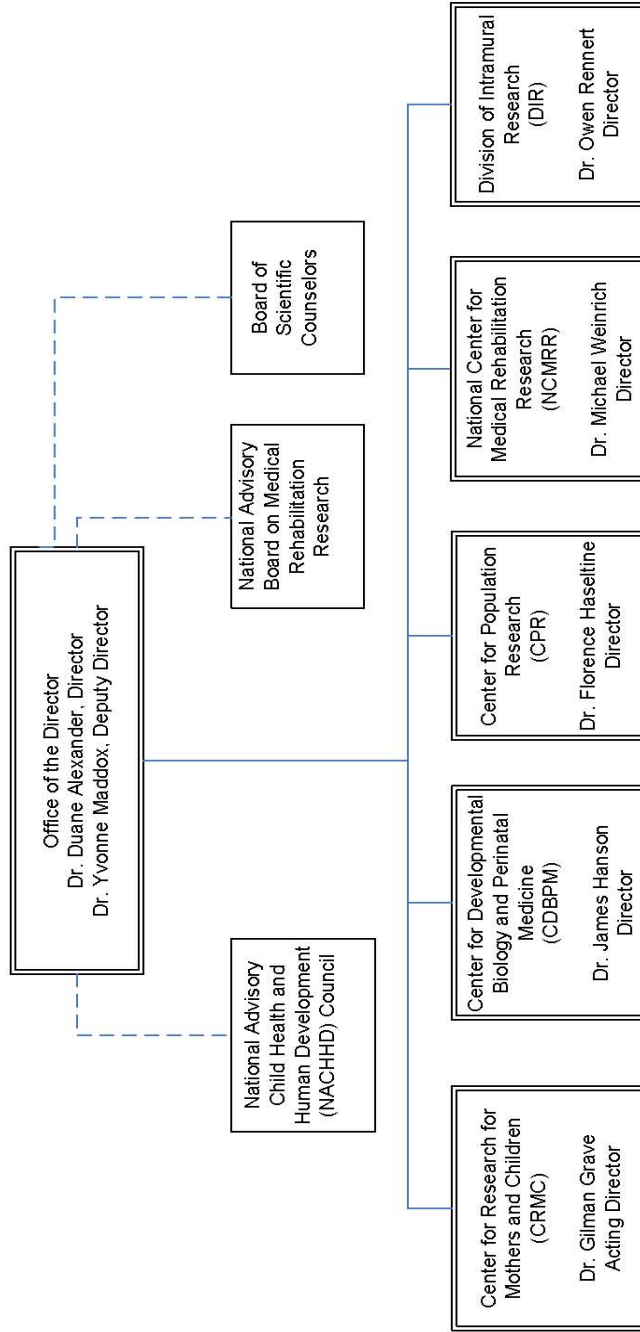


DEPARTMENT OF HEALTH AND HUMAN SERVICES  
NATIONAL INSTITUTES OF HEALTH

*Eunice Kennedy Shriver* National Institute of Child Health and Human Development

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# Eunice Kennedy Shriver National Institute of Child Health and Human Development



**NATIONAL INSTITUTES OF HEALTH**

***Eunice Kennedy Shriver* National Institute of Child Health  
and Human Development**

For carrying out section 301 and title IV of the Public Health Service Act with respect to child health and human development [\$1,294,894,000] **\$1,313,674,000** (Department of Health and Human Services Appropriations Act, 2009).

**National Institutes of Health  
Eunice Kennedy Shriver National Institute of Child Health and Human Development**

**Amounts Available for Obligation 1/**

Source of Funding	FY 2008 Actual	FY 2009 Estimate	FY 2010 PB
Appropriation	\$1,277,017,000	\$1,294,894,000	\$1,313,674,000
Rescission	-22,309,000	0	0
Supplemental	6,673,000	0	0
Subtotal, adjusted appropriation	1,261,381,000	1,294,894,000	1,313,674,000
Real transfer under Director's one-percent transfer authority (GEI)	-1,942,000	0	0
Comparative transfer under Director's one-percent transfer authority (GEI)	1,942,000	0	0
Subtotal, adjusted budget authority	1,261,381,000	1,294,894,000	1,313,674,000
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	-4,000	0	0
Subtotal, adjusted budget authority	1,261,377,000	1,294,894,000	1,313,674,000
Unobligated balance lapsing	0	0	0
Total obligations	1,261,377,000	1,294,894,000	1,313,674,000

1/ Excludes the following amounts for reimbursable activities carried out by this account:  
 FY 2008 - \$29,185,000    FY 2009 - \$29,225,000    FY 2010 - \$29,242,000  
 Excludes \$909,711 in FY 2009 and \$909,711 in FY 2010 for royalties.

**NATIONAL INSTITUTES OF HEALTH**  
**Eunice Kennedy Shriver National Institute of Child Health and Human Development**

(Dollars in Thousands)

Budget Mechanism - Total

MECHANISM	FY 2008 Actual		FY 2009 Estimate		FY 2010 PB		Change	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Grants:								
<u>Research Projects:</u>								
Noncompeting	1,250	\$507,195	1,218	\$506,600	1,192	\$504,300	(26)	-\$2,300
Administrative supplements	(41)	9,165	(41)	9,166	(41)	9,166	(0)	0
Competing:								
Renewal	78	37,693	122	38,505	129	41,339	7	2,834
New	373	100,278	325	102,438	342	109,978	17	7,540
Supplements	4	1,032	4	1,054	4	1,132	0	78
Subtotal, competing	455	139,003	451	141,997	475	152,449	24	10,452
Subtotal, RPGs	1,705	655,363	1,669	657,763	1,667	665,915	(2)	8,152
SBIR/STTR	94	28,728	92	29,232	93	29,670	1	438
Subtotal, RPGs	1,799	684,091	1,761	686,995	1,760	695,585	(1)	8,590
<u>Research Centers:</u>								
Specialized/comprehensive	47	64,845	56	69,630	56	71,714	0	2,084
Clinical research	0	0	0	0	0	0	0	0
Biotechnology	0	238	0	238	0	238	0	0
Comparative medicine	0	300	0	300	0	300	0	0
Research Centers in Minority Institutions	0	0	0	0	0	0	0	0
Subtotal, Centers	47	65,383	56	70,168	56	72,252	0	2,084
<u>Other Research:</u>								
Research careers	283	49,214	282	50,912	286	51,676	4	764
Cancer education	0	0	0	0	0	0	0	0
Cooperative clinical research	79	40,624	62	46,136	62	46,829	0	693
Biomedical research support	0	0	0	0	0	0	0	0
Minority biomedical research support	0	0	0	0	0	0	0	0
Other	119	22,300	129	27,332	130	27,742	1	410
Subtotal, Other Research	481	112,138	473	124,380	478	126,247	5	1,867
<b>Total Research Grants</b>	<b>2,327</b>	<b>861,612</b>	<b>2,290</b>	<b>881,543</b>	<b>2,294</b>	<b>894,084</b>	<b>4</b>	<b>12,541</b>
<u>Research Training:</u>	<u>FTEs</u>		<u>FTEs</u>		<u>FTEs</u>			
Individual awards	93	4,034	92	4,035	94	4,076	2	41
Institutional awards	745	32,354	738	32,318	738	32,641	0	323
<b>Total, Training</b>	<b>838</b>	<b>36,388</b>	<b>830</b>	<b>36,353</b>	<b>832</b>	<b>36,717</b>	<b>2</b>	<b>364</b>
Research & development contracts (SBIR/STTR)	204 (0)	142,153 (0)	208 (0)	150,682 (0)	208 (0)	153,013 (0)	0 (0)	2,331 (0)
	<u>FTEs</u>		<u>FTEs</u>		<u>FTEs</u>		<u>FTEs</u>	
Intramural research	375	162,752	382	166,495	386	168,992	4	2,497
Research management and support	199	58,476	237	59,821	244	60,868	7	1,047
Construction		0		0		0		0
Buildings and Facilities		0		0		0		0
<b>Total, NICHD</b>	<b>574</b>	<b>1,261,381</b>	<b>619</b>	<b>1,294,894</b>	<b>630</b>	<b>1,313,674</b>	<b>11</b>	<b>18,780</b>

Includes FTEs which are reimbursed from the NIH Common fund for Medical Research

**NATIONAL INSTITUTES OF HEALTH**  
**Eunice Kennedy Shriver National Institute of Child Health and Human Development**  
**BA by Program**  
(Dollars in thousands)

	FY 2006 Actual		FY 2007 Actual		FY 2008 Actual		FY 2009 Estimate		FY 2010 PB		Change	
	FTEs	Amount	FTEs	Amount	FTEs	Amount	FTEs	Amount	FTEs	Amount	FTEs	Amount
<b>Extramural Research</b>												
<u>Detail:</u>												
Center for Developmental Biology and Perinatal Medicine		\$321,315		\$303,541		\$306,972		\$317,000		\$326,000		9,000
Center for Research for Mothers and Children		314,400		338,085		341,006		351,478		353,814		2,336
Center for Population Research		324,563		319,096		305,339		313,000		316,000		3,000
National Center for Medical Rehabilitation Research		90,019		76,520		84,890		87,100		88,000		900
<b>Subtotal, Extramural</b>		1,050,297		1,037,242		1,038,207		1,068,578		1,083,814		15,236
<b>Intramural research</b>	370	159,051	380	159,495	375	162,752	382	166,495	386	168,992	4	2,497
<b>Res. management &amp; support</b>	177	54,552	180	53,028	199	58,476	237	59,821	244	60,868	7	1,047
<b>TOTAL</b>	547	1,263,900	560	1,249,765	574	1,259,435	619	1,294,894	630	1,313,674	11	18,780

Includes FTEs which are reimbursed from the NIH Common Fund for Medical Research

## Major Changes in the Fiscal Year 2010 Budget Request

Major changes by budget mechanism and/or budget activity 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 2010 budget request for NICHD, which is an \$18.8 million increase over the FY 2009 Estimate, for a total of \$1,313,674,000.

Research Project Grants (RPGs) (+\$8.1 million, total \$665.9 million): The NIH Budget policy for RPGs in FY 2010 is to provide a 2.0% inflationary increase in noncompeting awards and a 2.0% increase in average cost for competing RPGs. NICHD will support a total of 1,667 Research Project Grant (RPG) awards in FY 2010. Non-competing RPGs will decrease by 26 awards for \$2.3 million. Competing RPGs will increase by 24 awards for \$10.4 million. To capitalize on new advances in neurodevelopment and to address the recent increase in premature birth rates, the NICHD will provide additional resources for new competing research project grants, particularly in the Center for Developmental Biology and Perinatal Medicine. NICHD will expand research efforts in the areas of autism and cancer by funding additional competing RPGs for approximately \$4.8 million.

Research Centers (+\$2.1 million, total \$72.2 million): NICHD will increase support to the Autism Centers of Excellence, by providing an additional \$1.0 million. This effort is part of an NIH-wide target to increase funding in this high priority area.

**NATIONAL INSTITUTES OF HEALTH**  
**Eunice Kennedy Shriver National Institute of Child Health and Human Development**  
**Summary of Changes**

FY 2009 estimate		\$1,294,894,000	
FY 2010 estimated budget authority		1,313,674,000	
Net change		18,780,000	
CHANGES	2009 Current Estimate Base		Change from Base
	FTEs	Budget Authority	FTEs Budget Authority
A. Built-in:			
1. Intramural research:			
a. Annualization of January 2009 pay increase		\$62,472,000	\$747,000
b. January FY 2010 pay increase		62,472,000	937,000
c. Payment for centrally furnished services		28,519,000	570,000
d. Increased cost of laboratory supplies, materials, and other expenses		75,504,000	1,244,000
Subtotal		3,498,000	
2. Research management and support:			
a. Annualization of January 2009 pay increase		\$34,621,000	\$414,000
b. January FY 2010 pay increase		34,621,000	519,000
c. Payment for centrally furnished services		9,091,000	182,000
d. Increased cost of laboratory supplies, materials, and other expenses		16,109,000	280,000
Subtotal		1,395,000	
Subtotal, Built-in		4,893,000	



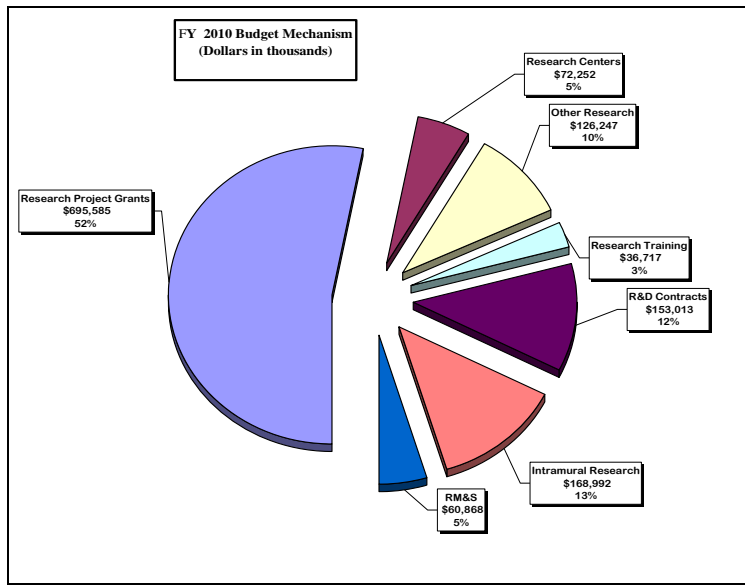
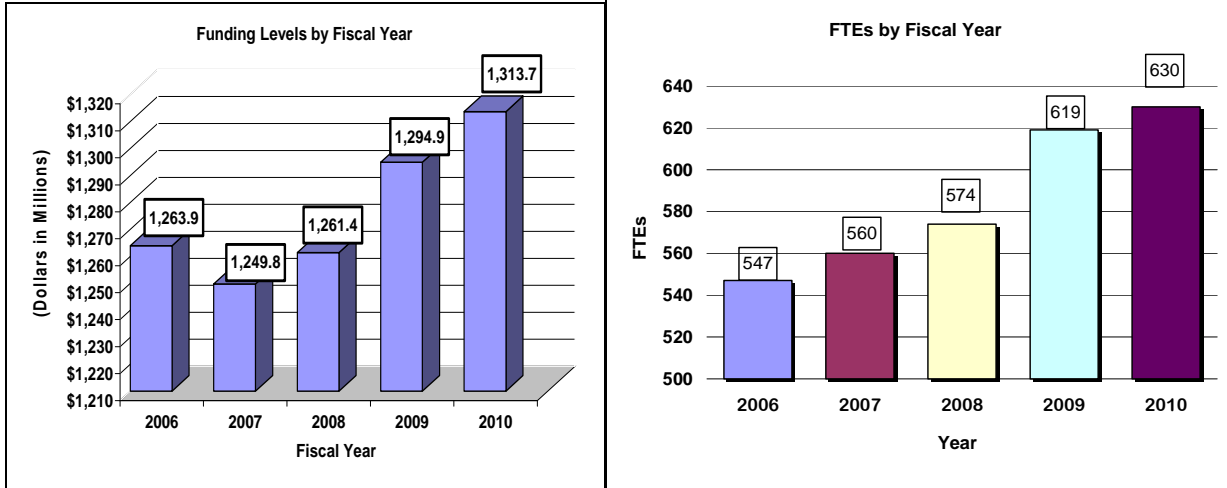
**NATIONAL INSTITUTES OF HEALTH  
Eunice Kennedy Shriver National Institute of Child Health and Human Development**

**Summary of Changes--continued**

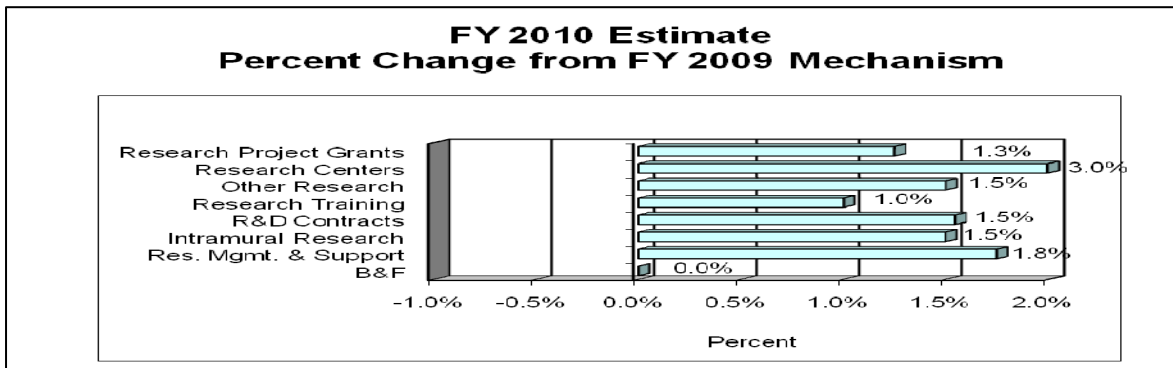
CHANGES	2009 Current Estimate Base		Change from Base	
	No.	Amount	No.	Amount
<b>B. Program:</b>				
1. Research project grants:				
a. Noncompeting	1,218	\$515,766,000	(26)	(\$2,300,000)
b. Competing	451	141,997,000	24	10,452,000
c. SBIR/STTR	92	29,232,000	1	438,000
Total	1,761	686,995,000	(1)	8,590,000
2. Research centers	56	70,168,000	0	2,084,000
3. Other research	473	124,380,000	5	1,867,000
4. Research training	830	36,353,000	2	364,000
5. Research and development contracts	208	150,682,000	0	2,331,000
Subtotal, extramural				15,236,000
	<u>FTEs</u>		<u>FTEs</u>	
6. Intramural research	382	166,495,000	4	(1,001,000)
7. Research management and support	237	59,821,000	7	(348,000)
8. Construction		0		0
9. Buildings and Facilities		0		0
Subtotal, program		1,294,894,000		13,887,000
Total changes	619		11	18,780,000

## FY 2010 Budget Graphs

### History of Budget Authority and FTEs:



### Distribution by Mechanism: Changes by Selected Mechanism:



**Justification**  
***Eunice Kennedy Shriver***  
**National Institute of Child Health and Human Development**

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

Budget Authority:

	FY 2008 Appropriation	FY 2009 Omnibus	FY 2009 Recovery Act	FY 2010 President's Budget	FY 2010 +/- 2009 Omnibus
BA	\$1,261,381,000	\$1,294,894,000	\$327,443,000	\$1,313,674,000	+\$18,780,000
FTE	574	619	0	630	+11

This document provides justification for the Fiscal Year (FY) 2010 activities of the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), including HIV/AIDS activities. Details of the FY 2010 HIV/AIDS activities are in the "Office of AIDS Research (OAR)" Section of the Overview. Details on the Common Fund are located in the Overview, Volume One. Program funds are allocated as follows: Competitive Grants/Cooperative Agreements; Contracts; Direct Federal/Intramural and Other.

In FY 2009, a total of \$327,443,000 American Recovery and Reinvestment Act (ARRA) funds were transferred from the Office of the Director. These funds will be used to support scientific research opportunities that help support the goals of the ARRA. The ARRA allows NIH to execute these funds via any NIH funding mechanism. Funds are available until September 30, 2010. These funds are not included in the FY 2009 Omnibus amounts reflected in this document.

**Director's Overview**

**Institute Mission**

The NICHD mission is to ensure that every child is born healthy and wanted; that women suffer no harmful effects from reproductive processes; that all children can achieve their full potential for healthy and productive lives, free from disease or disability; and to ensure the health, productivity, independence and well-being of all people through optimal rehabilitation.

Scientifically, NICHD is home to a broad research portfolio, uniquely focused on understanding normative human development from before birth until adulthood, and providing the knowledge needed to treat and prevent a wide range of inherited or developmental conditions and to understand the earliest origins of adult disease. The NICHD provides a unique home to the reproductive and medical rehabilitative sciences; the science of early childhood learning; and to demographic and related policy research

on family and child well-being. Thus, NICHD research ranges from that needed to understand embryonic stem cells to the impact of economic and immigration policies on the family.

## **Recent Progress**

Prematurity rates are continuing to rise. New research enables doctors to better identify which premature infants are at highest risk for death or disability, helping them to optimize care and treatment. Scientists also discovered that a common treatment to delay labor can also reduce preterm infants' risk for cerebral palsy. To reduce infant mortality, the NICHD supports efforts in the U.S. and in resource-poor countries. For example, in collaboration with the Centers for Disease Control and Prevention (CDC), researchers showed that the risk of HIV infection in breast-feeding infants can be reduced; and in partnership with the Gates Foundation, researchers found that giving an inexpensive drug to women after birth was a safe way to prevent postpartum hemorrhage. Plus, collaborating with the National Institute of Nursing Research, among others, the NICHD created a program to help nurses communicate the risk factors for sudden infant death syndrome (SIDS) to parents and child caregivers. Understanding typical development, as well as studying diseases, continues to show scientists new ways to improve health. Earlier research in movement control paved the way for a new nerve-muscle graft procedure that enables amputees to have more natural control of a prosthetic device.

## **Future Directions**

The NICHD led the 2008 Surgeon General's Conference on the Prevention of Preterm Birth. To immediately implement some key conference priorities, the NICHD will launch a program to identify and address the factors contributing to prematurity among women having their first baby. The Institute also leads, with the National Heart, Lung, and Blood Institute, the NIH response to the Pediatric Medical Device Safety and Improvement Act. As a start, the NICHD will support the development of medical devices that can be used in the neonatal intensive care unit. New technology is also needed in rehabilitation, where advances in neurological research support the development of new orthotic and prosthetic devices for both adults and children. The NICHD also plans to increase funding in the area of neurodevelopment, which includes Fragile X, Down syndrome, and autism. This effort will support implementation of the trans-NIH research plans recently developed for these conditions. As a complement these efforts, the NICHD is leading the effort to pilot test the feasibility of implementing the National Children's Study (NCS), examining environmental influences on health and development from before birth to age 21. By following a large group of children for many years, scientists will be better able to identify causes and identify treatments for conditions including birth defects, diabetes, asthma, and autism. The funding request for this study is within the NIH Office of the Director.

The FY 2010 budget request of \$194.4 million in the NIH Office of the Director will support continuation of the NCS pilot study. The NIH lengthening of the NCS pilot study defers commencement of the full study. Extending the pilot study will support ample evaluation of the multitude of possible tests and questions that could eventually make

up the main study. This approach will allow development of a cost efficient study that will answer core questions about the influence of the environment on children's health and development.

The NCS costs are driven by the preparation for recruitment and the size of participant recruitment. These costs are spread across all components of the study. The budget for the seven NCS vanguard centers is estimated to be \$52.7 million in FY 2010, \$13.2 million or a 33% increase from the FY 2009 level. The vanguard centers pilot study commenced the screening of households and enrollment of women in 2009.

The goal of the pilot study is to test the recruitment and enrollment strategies for the main study as well as the initial study visit procedures, bio/environmental sample collections and clinical measures. Data collections include: household enumeration and pregnancy screening, preconception home visit, first trimester home visit, third trimester clinic visit, birth visit, and additional contacts (some in-person visits, some by phone) at 3, 6, 9, and 12 months of age for the infant. In FY 2010 the vanguard centers will continue to enroll women who are not yet pregnant as well as women in their first trimester of pregnancy and follow them and the infants that have been born during this pilot phase of the study.

The FY 2010 budget request includes \$4.3 million to support the bio-specimen and environmental sample repository for the vanguard centers' collections. The size and capacity of the repository is driven by the number of participants in the study and the volume of samples collected. Currently, all bio-specimens collected from study participants will be stored in the repository for future analysis, thus there are no costs for analyses of biological specimens listed. Any samples deemed unstable will be analyzed on an ad hoc basis.

The FY 2010 budget request includes \$1.9 million to support the environmental laboratory testing and provide analysis of environmental samples (e.g., water, dust, air) obtained during the vanguard centers' home visits. Analyses are conducted for only those unstable samples.

The administrative components of the NCS include the data coordinating center, the information management system, logistics and communication support for the vanguard and study centers. The FY 2010 budget request of \$68.6 million will support development of all study materials, data collection and processing procedures, training and monitoring of the work in the vanguard and study centers as well as protocol refinement, information management systems, and development of training programs related to subsequent data collection. In addition to the total \$194.4 million in the Office of the Director, the FY 2010 NICHD research management and support budget request provides \$2.5 million for scientific program management and advisory council costs. The NCS pilot study is to be completed in 2010. Upon completion, the NCS staff, study investigators and advisory board will evaluate the outcomes to develop a revised protocol. This revised protocol will contain the most important science necessary to address the study hypotheses, with assurance that the approaches tested are feasible and acceptable to the participants, and can be accommodated within the approximately \$3.1 billion planned for the study. That protocol will be peer reviewed by an expert panel convened by the National Academy of Sciences, which will advise the NIH on whether the study at that cost level will yield sufficient information for the study to be continued. Proceeding with the study will depend on that recommendation and the willingness of Congress to provide the necessary funding.

## **Justification of FY 2010 Budget**

### **Program Descriptions and Accomplishments**

#### **Overall Budget Policy**

The NICHD's research priorities are to support investigator-initiated research projects, new investigator research, career development and crucial infrastructure programs. Together these enable both new and experienced investigators to conduct pre-clinical and clinical trials at established sites with experience in recruiting and conducting trials in specific, high-priority populations, including children, pregnant women, and individuals with disabling conditions. The Institute carefully balances the portfolio mix and utilizes the appropriate support mechanism to meet the requirements of the scientific program. The NICHD conducts program reviews, with consultation and input from members of the NICHD Advisory Council and other outside experts, and uses the results to make decisions concerning future program directions and related funding. The NIH is lengthening the NCS pilot study, which delays the initiation of the full study, to support a better evaluation of the myriad of possible tests and questions that would eventually make up the main study. This approach will allow development of a cost efficient study that will answer core questions about the influence of the environment on children's health and development. Intramural Research and Research Management and Support receive modest increases to help offset the cost of pay and other increases. The NICHD will continue to support new investigators and to maintain an adequate number of competing RPGs.

#### **Center for Developmental Biology and Perinatal Medicine**

The Center supports research to advance basic and clinical knowledge about maternal health and child development, starting with congenital and genetic disorders, as well as intellectual and other developmental disabilities such as autism, Fragile X, and Down syndrome. The Center studies factors that affect maternal and fetal health during pregnancy—the causes and consequences of fetal growth restriction, preterm labor and birth, and stillbirth; and conditions affecting early life—respiratory distress syndrome and SIDS. A major goal is to address prematurity as a national public health issue with its implications for health disparities, while improving diagnoses, therapy, and clinical care for disabling developmental conditions that appear early in life.

Additional Center accomplishments include: partnering to support the full implementation of the Autism Centers of Excellence (ACE) and other autism-related research; and establishing the foundation of a national network to develop newborn screening technologies and related new treatments for a wider range of conditions. –

#### **Budget Policy**

A total of \$326.0 million will support the FY 2010 NICHD program in Developmental Biology and Perinatal Medicine, a \$9.0 million or a 2.8% increase from the FY 2009 level. Research priorities for FY 2010 include a renewal (at current funding levels) of the Intellectual and Developmental Disabilities Research Centers, with a focus on

translational research. These centers form a strong infrastructure for multidisciplinary collaborations among leading scientists in neuroscience, developmental biology, genetics, and other fields. Moreover, the NICHD will increase its investment and strengthen its portfolio in the field of developmental disorders. NICHD will provide \$3.3 million to support research in autism and Fragile X.

To optimize care and developmental outcomes for infants in the neonatal intensive care unit, the program plans to invest up to \$1.2 million in research to develop safe and effective instruments and devices for these infants. Other priority areas include a trans-NICHD effort to examine how fetal epigenetics may lead to poor pregnancy outcomes, and include continued support of genomic analyses of animal models and research tools to shed light on the mechanisms of birth defects. Building on the success of a training program that supports developmental biology research at undergraduate institutions, the Institute will continue to encourage these research training activities to spur careers in this field.

## **Portrait of a Program: Neurodevelopmental Disorders Research**

FY 2009 Level: \$35.100 million  
FY 2010 Level: \$39.500 million  
Change: \$4.400 million

Autism spectrum disorders (ASDs), fragile X syndrome (FXS), Down syndrome (DS), and other neurodevelopmental disorders—and the atypical developmental processes underlying these conditions—are a major focus of NICHD research. Neurodevelopmental disorders are highly complex and difficult to understand fully because genetic abnormalities, pre- and post-natal environmental exposures, illnesses and behavioral factors all play important roles in early development. Moreover, interactions among these factors can also influence the neurodevelopmental processes. NICHD-supported scientists are conducting basic research in animal models, along with clinical studies, to clarify how these factors influence developmental processes. Researchers are using the findings from these studies to develop potential biomarkers to help identify children at risk for these disorders early, and develop new medication or behavioral interventions to help improve outcomes.

The NICHD invests in multiple programs dedicated to unraveling the complexities of neurodevelopmental disorders. Since 1991, the NICHD has advanced research in this area by supporting a Brain and Tissue Bank. This resource serves the critical role of collecting, preserving, and distributing human tissues to qualified scientific investigators who are trying to shed light on the origins of many neurodevelopmental disorders, including DS, FXS and ASD. The fourteen Eunice Kennedy Shriver Intellectual and Developmental Disabilities Research Centers (IDDRCs) provide investigators with core facilities and services for hundreds of research projects, including those funded separately by other NIH Institutes and Centers, other government agencies and various non-profit organizations.

Major NICHD investments also support the multi-Institute Autism Centers of Excellence (ACE) program, which emphasizes identifying the causes of ASDs and developing new and improved treatments. The NICHD also participates in a trans-NIH research initiative on the shared neurobiology of FXS and ASD, allowing scientists to leverage basic research across multiple conditions. By integrating all of these activities, the NICHD is able to enhance research collaborations while more efficiently building the scientific and clinical knowledge needed to improve the care and treatment of children with neurodevelopmental disorders and their families

## **Center for Research for Mothers and Children**

The Center supports an array of maternal and child health research: factors affecting growth and development; gestational diabetes; antecedents of adult diseases; obesity and overweight; growth retardation; and congenital and infectious diseases, including HIV/AIDS in children, adolescents and women. The CRMC also funds research that examines mechanisms of cognitive, social, emotional, and neurobiological development; the influences of genetics, environment, and life experiences on development; the causes and treatment of specific learning disabilities; and health promotion and disease prevention in children and adolescents. In compliance with the Best Pharmaceuticals for Children Act, the Center houses the primary federal research entity to study and compare safe pharmaceuticals for children, and a network to aid the safe testing of drugs in pregnant women.

Accomplishments: establishing a program to better diagnose and treat iron deficiency and understand how it affects malaria, especially in children; developing HIV prevention programs targeting high-risk children and adolescents; leading a trans-NIH effort to



examine the multi-organ problems in children with HIV/AIDS; and continually improving drug regimens to prevent maternal-child transmission of HIV/AIDS especially in resource-poor settings.

### Budget Policy

The budget for the Research for Mothers and Children program is estimated to be \$353.8 million in FY 2010, \$2.3 million or a 0.7% increase from the FY 2009 level. This funding supports ongoing programs such as the Pediatric, Adolescent, and Maternal AIDS program; the Pediatric Pharmacology Research Units; and the Global Network for Women's and Children's Health Research. The NICHD plans new initiatives to assess cognitive and language development trajectories in young children and to increase research in the development of outcome measures for school readiness.

## **Portrait of a Program: Improving Maternal and Infant Survival on a Global Scale**

FY 2009 Level: \$98.300 million

FY 2010 Level: \$100.000 million

Change: \$1.500 million

In the United States, childbirth is typically a joyous event, only rarely marred by tragedy. However, while only about 1 in 7,700 American women die in childbirth, in resource-poor countries that figure is as high as 1 in 16. Infants and young children in these countries also face many risks to life and health in childhood, from AIDS and malaria to malnutrition. The NICHD leads several programs to save lives and improve global health for all women and children.

The Global Network for Women's and Children's Health Research (the Global Network), a partnership between the NICHD and philanthropic foundations, provides funding for scientists from developing countries, together with those in the United States, to address critical global health problems. For example, the leading cause of maternal death in world is postpartum hemorrhage (PPH), or excessive bleeding after childbirth. The Global Network recently completed 2 separate studies—one in Latin America and one in India—on how to prevent PPH. In Argentina and Uruguay, researchers found that intensive training for the hospitals' medical staff resulted in more effective medical practice and a dramatic 70 percent reduction in severe cases of PPH. In India, most women do not give birth in hospitals, and the medication used in Latin America and the U.S. to prevent PPH is not feasible because it requires cold storage and skilled birth attendants. A Global Network-funded study showed that providing an alternative oral medication cut rates of acute PPH by nearly 50 percent.

The HIV/AIDS epidemic has taken the lives of many children across the globe, but the impact has been felt most severely in resource-poor countries. In response, the NICHD has supported international clinical trials to develop interventions that can help contain the epidemic under the conditions that people in these countries face every day. For instance, in many countries, mothers with HIV face a stark choice: to nurse their infants and risk passing on HIV, or to formula feed and deprive their infants of much of the natural immunity that can help protect against the fatal diseases prevalent in these parts of the world. In addition, formula feeding may not be feasible or healthy in areas without clean water to mix the formula, the income to purchase the formula, or a heat source to boil water. The Institute's ongoing research in pediatric and maternal AIDS has identified ways to make it safer for mothers to breastfeed. One NICHD-funded study showed that extended drug regimens could decrease the rate of HIV infection or death by more than 30 percent among the breastfed infants at 9 months.

## **Center for Population Research**

The Center supports population studies to understand reproductive health and biology to alleviate human infertility and reproductive disorders. The CPR supports development of a variety of contraceptive methods that are safe and effective, inexpensive and readily available, preferably reversible, which meet the diverse needs of women and men throughout their reproductive lives, including the need to prevent the spread of sexually transmitted diseases. The Center also supports behavioral and social science research to understand the consequences of changes in population size, composition and distribution; factors that affect family formation, functioning, stability, and influence on child well-being; and the antecedents and consequences of migration and immigration.

Accomplishments include: stimulating collaborations among researchers studying female pelvic floor disorders; supporting basic and applied research to develop contraceptive products for men; and launching a program to examine the developmental and environmental processes contributing to HIV risk. The Center also encourages researchers to transform our understanding of uterine fibroids at the molecular level into new options for treatment; supporting research on how assisted reproductive technologies (ART) may affect developmental outcomes of children born through ART; and enhancing technologies to help preserve fertility. The CPR also promoted a research effort to understand the role of fat tissue in regulating reproduction and in diseases and disorders that impact human fertility.

### Budget Policy

The budget for the population research program is estimated at \$316.0 million for FY 2010, a \$3.0 million or a 1.0% increase from the FY 2009 level. This funding supports a wide range of ongoing population research efforts in reproductive health and biology, including basic and translational research on uterine fibroids, pregnancy prevention, and demographic factors underlying population changes. In addition, the program will continue to support the Building Interdisciplinary Research Careers in Women's Health initiative and the Women's Reproductive Health Research Career Development Centers, two highly successful ongoing initiatives that promote interdisciplinary research related to women's health.

## **Portrait of a Program: Reducing Preterm Birth**

FY 2009 Level: \$93.300 million  
FY 2010 Level: \$94.700 million  
Change: \$1.400 million

Each year in the United States, nearly 500,000 infants (12.8 percent of U.S. births) are born too soon. Preterm birth—before the 37<sup>th</sup> week of pregnancy—is a major cause of infant death and places infants at increased risk for such serious lifelong health problems as intellectual disability, cerebral palsy, and vision impairment. The annual cost of caring for infants born prematurely is estimated to be \$26 billion. Despite some progress in reducing the risk of preterm labor for certain women, the overall rate of preterm births has increased recently, with African American women still being twice as likely to give birth prematurely.

For a number of years, through multiple clinical research networks, the NICHD has funded a range of clinical research studies to address this major public health problem. For example, one study showed that weekly injections of progesterone reduced the risk of preterm birth by 34 percent among pregnant women who had given birth prematurely in an earlier pregnancy. Researchers also showed that simply administering magnesium sulfate to mothers before they give birth could reduce the incidence of moderate or severe cerebral palsy in preterm infants from 3.5% to 1.9%. Research is also underway to identify biomarkers for preterm labor—substances in the blood or tissues that signal impending labor. If successful, some of these research findings could allow physicians to determine a woman's susceptibility to a preterm birth even before she became pregnant. NICHD-supported researchers are investigating the role of stress, environmental substances, and genes in influencing the risk of preterm birth in the minority community, while another NICHD-supported research network supports a variety of trials to optimize treatments for the most vulnerable preterm infants.

Through this wealth of research, scientists have identified many factors that can lead to prematurity. However, only about half of all women who give birth prematurely have any known risk factors. Among first-time mothers, the rate of preterm birth has increased 50 percent in recent years, and with no pregnancy history, it is often difficult to predict their risk of preterm birth. Recently, the NICHD implemented one of the recommendations from the Surgeon General's Conference on the Prevention of Preterm Birth by announcing a new initiative to study 10,000 first-time mothers with single pregnancies. Researchers will carefully follow these women to identify biomarkers and other factors that influence the risk for preterm birth.

## **National Center for Medical Rehabilitation Research**

The Center aims to enhance the health, productivity, independence, and quality-of-life of people with disabilities by supporting a broad range of research: the underlying biology of injury and disability and the body's normal mechanisms of recovery and adaptation; spinal cord and traumatic brain injuries (TBI) and stroke; childhood disabilities and long-term outcomes for survivors of trauma, congenital anomalies, harmful deprivation of oxygen in newborns, infections and septic shock. The NCMRR supports the development of equipment, devices and treatments to improve mobility and enhance an individual's capacity to function.

Accomplishments: launching a program to collect data on the use of multi-drug combinations to better treat TBI; partnering with the Department of Health and Human Services, the CDC, and the National Institute of General Medical Sciences to conduct a nationwide study examining the outcomes of children who arrive in emergency rooms

with critical pertussis; and stimulating the development of advanced methods to eliminate infection when lower limb prostheses are directly attached to bones. The Center is also a leading user of the Small Business Innovation Research Awards—developing cutting-edge sensors for prosthetic devices and virtual reality systems to enhance rehabilitation, and creating training curricula to help families better cope with TBI.

### Budget Policy

A total of \$88.0 million, an increase of \$0.9 million or a 1.0% over FY 2009, will support the NICHD Medical Rehabilitation Research program. This funding will maintain ongoing research efforts in traumatic brain injury (TBI), spinal cord injury, pediatric critical care, and rehabilitation. The program will renew funding for its rehabilitation research networks to provide basic and clinical support for rehabilitation researchers to encourage outcomes research, applied psychology, and strategies for promoting participation. In addition, in response to the rise in the number of individuals who need prosthetic and orthotic devices, the program plans to stimulate the development of outcome measures to help assess the effectiveness of those devices. This research will ultimately provide clinicians the information they need to optimize rehabilitation and quality of life for amputees and an aging population

### Division of Intramural Research (DIR)

NICHD intramural researchers conduct interdisciplinary and interactive research to answer basic biomedical research questions and solve difficult clinical problems in human development. This includes research in genetics, genomics (the study of how genes function) and epigenetics (DNA-associated, heritable switches that can affect gene function) and how these influence normal and abnormal development. The intramural program also studies the basic biophysical mechanisms underlying cell and tissue function; early development, beginning with how cells signal within themselves or each other; and the prevention and treatment of disorders of childhood development and endocrine and reproductive disorders, including cancers, through innovative diagnostics, therapies and immunizations. Intramural researchers also develop the innovative tools needed to conduct increasingly sophisticated biomedical research at the cellular and sub-cellular levels.

Accomplishments: improving microscopy techniques that allow following intracellular processes at the molecular level; linking undetectable intrauterine infection to the initiation of preterm labor; understanding at a molecular level how the flu virus becomes infectious, giving researchers new targets to interfere with its spread; and a new vaccine for typhoid fever and a promising new vaccine approach for malaria.

### Budget Policy

A total of \$169.0 million will support the NICHD FY 2010 Intramural research program, a 1.5% increase from the FY 2009 level. This supports the Institute's in-house research program. The Intramural research program has 210 research projects, over half of which (107) include human subjects. Support for these projects includes the personnel

costs of the research operation and the operational support for such items as equipment, supplies, and related bioinformatics.

### **Research Management and Support (RMS)**

Activities include technical and administrative functions for the Institute's research investments. The RMS budget also supports the Institute's international and special populations research activities, and the outreach and public education activities, such as the Back-to-Sleep effort. The NICHD regularly reviews administrative and programmatic functions to identify ways to streamline activities, save costs, and ensure programs are effective. For example, the Institute evaluated its Media Smart Youth (MSY) program and used the findings to update the program's content. The Institute is also enhancing the consistency of all NICHD clinical research activities; improving business processes; and finding new ways to improve efficiencies in the design and conduct of clinical trial research programs.

### **Budget Policy**

The NICHD FY 2010 RMS budget request of \$60.9 million is a 1.8% increase from the FY 2009 level. The FY 2010 NICHD RMS activities provide administrative, budgetary, logistical, and scientific support in the review, award, and monitoring of research grants, training awards and research and development contracts. RMS functions also encompass strategic planning, coordination, and evaluation of the Institute's programs, regulatory compliance, international coordination, and liaison with other Federal agencies, Congress, and the public.

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**Budget Authority by Object**

	FY 2009 Estimate	FY 2010 PB	Increase or Decrease	Percent Change
Total compensable workyears:				
Full-time employment	619	630	11	1.8
Full-time equivalent of overtime and holiday hours	2	2	0	0.0
Average ES salary	\$171,011	\$174,431	\$3,420	2.0
Average GM/GS grade	12.0	12.0	0.0	0.0
Average GM/GS salary	\$91,854	\$93,691	\$1,837	2.0
Average salary, grade established by act of July 1, 1944 (42 U.S.C. 207)	\$92,033	\$94,794	\$2,761	3.0
Average salary of ungraded positions	137,453	140,202	2,749	2.0
<b>OBJECT CLASSES</b>	<b>FY 2009 Estimate</b>	<b>FY 2010 Estimate</b>	<b>Increase or Decrease</b>	<b>Percent Change</b>
Personnel Compensation:				
11.1 Full-time permanent	\$38,602,000	\$40,451,000	\$1,849,000	4.8
11.3 Other than full-time permanent	22,865,000	23,808,000	943,000	4.1
11.5 Other personnel compensation	1,282,000	1,347,000	65,000	5.1
11.7 Military personnel	2,559,000	2,666,000	107,000	4.2
11.8 Special personnel services payments	12,051,000	12,505,000	454,000	3.8
<b>Total, Personnel Compensation</b>	<b>77,359,000</b>	<b>80,777,000</b>	<b>3,418,000</b>	<b>4.4</b>
12.0 Personnel benefits	17,700,000	18,491,000	791,000	4.5
12.2 Military personnel benefits	2,034,000	2,119,000	85,000	4.2
13.0 Benefits for former personnel	0	0	0	0.0
<b>Subtotal, Pay Costs</b>	<b>97,093,000</b>	<b>101,387,000</b>	<b>4,294,000</b>	<b>4.4</b>
21.0 Travel and transportation of persons	2,438,000	2,360,000	(78,000)	-3.2
22.0 Transportation of things	295,000	290,000	(5,000)	-1.7
23.1 Rental payments to GSA	0	0	0	0.0
23.2 Rental payments to others	97,000	96,000	(1,000)	-1.0
23.3 Communications, utilities and miscellaneous charges	1,121,000	1,045,000	(76,000)	-6.8
24.0 Printing and reproduction	667,000	634,000	(33,000)	-4.9
25.1 Consulting services	2,826,000	2,778,000	(48,000)	-1.7
25.2 Other services	14,013,000	13,737,000	(276,000)	-2.0
25.3 Purchase of goods and services from government accounts	137,442,000	137,621,000	179,000	0.1
25.4 Operation and maintenance of facilities	341,000	336,000	(5,000)	-1.5
25.5 Research and development contracts	101,054,000	101,541,000	487,000	0.5
25.6 Medical care	1,064,000	1,054,000	(10,000)	-0.9
25.7 Operation and maintenance of equipment	2,598,000	2,568,000	(30,000)	-1.2
25.8 Subsistence and support of persons	0	0	0	0.0
<b>25.0 Subtotal, Other Contractual Services</b>	<b>259,338,000</b>	<b>259,635,000</b>	<b>297,000</b>	<b>0.1</b>
26.0 Supplies and materials	12,476,000	12,344,000	(132,000)	-1.1
31.0 Equipment	5,235,000	5,066,000	(169,000)	-3.2
32.0 Land and structures	0	0	0	0.0
33.0 Investments and loans	0	0	0	0.0
41.0 Grants, subsidies and contributions	916,117,000	930,801,000	14,684,000	1.6
42.0 Insurance claims and indemnities	0	0	0	0.0
43.0 Interest and dividends	17,000	16,000	(1,000)	-5.9
44.0 Refunds	0	0	0	0.0
<b>Subtotal, Non-Pay Costs</b>	<b>1,197,801,000</b>	<b>1,212,287,000</b>	<b>14,486,000</b>	<b>1.2</b>
<b>Total Budget Authority by Object</b>	<b>1,294,894,000</b>	<b>1,313,674,000</b>	<b>18,780,000</b>	<b>1.5</b>

Includes FTEs which are reimbursed from the NIH Common Fund for Medical Research

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**Salaries and Expenses**

OBJECT CLASSES	FY 2009 Estimate	FY 2010 PB	Increase or Decrease	Percent Change
<b>Personnel Compensation:</b>				
Full-time permanent (11.1)	\$38,602,000	\$40,451,000	\$1,849,000	4.8
Other than full-time permanent (11.3)	22,865,000	23,808,000	943,000	4.1
Other personnel compensation (11.5)	1,282,000	1,347,000	65,000	5.1
Military personnel (11.7)	2,559,000	2,666,000	107,000	4.2
Special personnel services payments (11.8)	12,051,000	12,505,000	454,000	3.8
<b>Total Personnel Compensation (11.9)</b>	<b>77,359,000</b>	<b>80,777,000</b>	<b>3,418,000</b>	<b>4.4</b>
Civilian personnel benefits (12.1)	17,700,000	18,491,000	791,000	4.5
Military personnel benefits (12.2)	2,034,000	2,119,000	85,000	4.2
Benefits to former personnel (13.0)	0	0	0	0.0
<b>Subtotal, Pay Costs</b>	<b>97,093,000</b>	<b>101,387,000</b>	<b>4,294,000</b>	<b>4.4</b>
Travel (21.0)	2,438,000	2,360,000	(78,000)	-3.2
Transportation of things (22.0)	295,000	290,000	(5,000)	-1.7
Rental payments to others (23.2)	97,000	96,000	(1,000)	-1.0
Communications, utilities and miscellaneous charges (23.3)	1,121,000	1,045,000	(76,000)	-6.8
Printing and reproduction (24.0)	667,000	634,000	(33,000)	-4.9
<b>Other Contractual Services:</b>				
Advisory and assistance services (25.1)	2,826,000	2,778,000	(48,000)	-1.7
Other services (25.2)	14,013,000	13,737,000	(276,000)	-2.0
Purchases from government accounts (25.3)	89,649,000	88,013,000	(1,636,000)	-1.8
Operation and maintenance of facilities (25.4)	341,000	336,000	(5,000)	-1.5
Operation and maintenance of equipment (25.5)	2,598,000	2,568,000	(30,000)	-1.2
Subsistence and support of persons (25.8)	0	0	0	0.0
<b>Subtotal Other Contractual Services</b>	<b>109,427,000</b>	<b>107,432,000</b>	<b>(1,995,000)</b>	<b>-1.8</b>
Supplies and materials (26.0)	12,444,000	12,312,000	(132,000)	-1.1
<b>Subtotal, Non-Pay Costs</b>	<b>126,489,000</b>	<b>124,169,000</b>	<b>(2,320,000)</b>	<b>-1.8</b>
<b>Total, Administrative Costs</b>	<b>223,582,000</b>	<b>225,556,000</b>	<b>1,974,000</b>	<b>0.9</b>



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**Authorizing Legislation**

	PHS Act/ Other Citation	U.S. Code Citation	2009 Amount Authorized	FY 2009 Estimate	2010 Amount Authorized	FY 2010 PB
Research and Investigation	Section 301	42§241	Indefinite	\$1,294,894,000	Indefinite	\$1,313,674,000
National Institute of Child Health and Human Development	Section 402(a)	42§281	Indefinite		Indefinite	
Total, Budget Authority				1,294,894,000		1,313,674,000

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**Appropriations History**

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2001	810,501,000 <u>2/</u>	984,300,000	986,069,000	976,455,000
Rescission				(486,000)
2002	1,096,650,000	1,088,208,000	1,123,692,000	113,605,000
Rescission				(1,931,000)
2003	1,196,093,000	1,196,093,000	1,213,817,000	1,213,817,000
Rescission				(7,890,000)
2004	1,245,371,000	1,245,371,000	1,251,185,000	1,250,585,000
Rescission				(8,224,000)
2005	1,280,915,000	1,280,515,000	1,288,900,000	1,280,915,000
Rescission				(10,594,000)
2006	1,277,544,000	1,277,544,000	1,310,989,000	1,277,544,000
Rescission				(12,775,000)
2007	1,257,418,000	1,257,418,000	1,264,500,000	1,254,707,000
Rescission				0
2008	1,264,946,000	1,273,863,000	1,282,231,000	1,254,708,000
Rescission				(22,309,000)
Supplemental				6,673,000
2009	1,255,920,000	1,299,059,000	1,290,873,000	1,294,894,000
Rescission				0
2010	1,313,674,000			

1/ Reflects enacted supplementals, rescissions, and reappropriations.

2/ Excludes funds for HIV/AIDS research activities consolidated in the NIH Office of AIDS Research.

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**Details of Full-Time Equivalent Employment (FTEs)**

OFFICE/DIVISION	FY 2008 Actual	FY 2009 Estimate	FY 2010 PB
Office of the Director	116	153	158
Center for Developmental Biology & Perinatal Medicine	21	21	22
Center for Population Research	23	22	23
Center for Research for Mothers & Children	29	32	32
National Center for Medical Rehabilitation Research	10	9	9
Division of Intramural Research	375	382	386
<b>Total</b>	<b>574</b>	<b>619</b>	<b>630</b>
Includes FTEs which are reimbursed from the NIH Common Fund for Medical Research			
FTEs supported by funds from Cooperative Research and Development Agreements	(1)	(1)	(1)
FISCAL YEAR	Average GM/GS Grade		
2006	11.6		
2007	11.7		
2008	11.9		
2009	12.0		
2010	12.0		

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**New Positions Requested**

	FY 2010		
	Grade	Number	Annual Salary
Extramural:			
Health Science Administrator	GS 13	1	\$98,518
Health Science Administrator	GS 14	2	116,419
Program Analyst	GS 12	1	85,845
Grant Management Specialist	GS 12	1	82,845
Health Science Writer/Editor	GS 12	1	82,845
Program Director	AD 602	1	175,000
Intramural:			
Investigator	AD 401	1	123,900
Research Fellow	AD 401	2	123,900
Clinical Fellow	AD 401	1	123,900
<b>Total Requested</b>		<b>11</b>	