

DEPARTMENT OF HEALTH AND HUMAN SERVICES

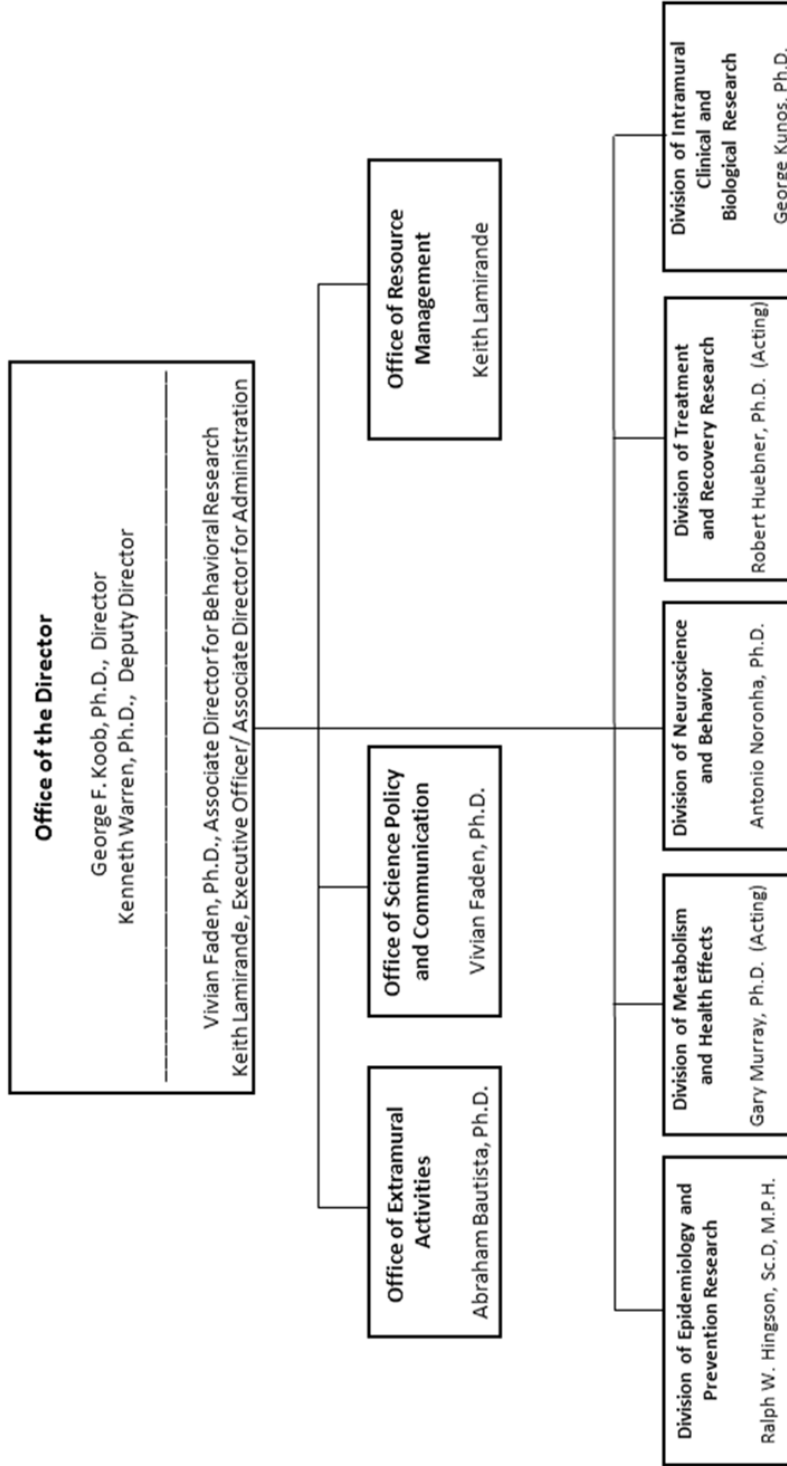
NATIONAL INSTITUTES OF HEALTH

National Institute on Alcohol Abuse and Alcoholism (NIAAA)

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NATIONAL INSTITUTES OF HEALTH

National Institute on Alcohol Abuse and Alcoholism



NATIONAL INSTITUTES OF HEALTH

National Institute on Alcohol Abuse and Alcoholism

For carrying out section 301 and title IV of the PHS Act with respect to alcohol abuse and alcoholism,
【\$447,408,000】*\$459,833,000*

NATIONAL INSTITUTES OF HEALTH
National Institute on Alcohol Abuse and Alcoholism

Amounts Available for Obligation¹
(Dollars in Thousands)

Source of Funding	FY 2014 Actual	FY 2015 Enacted	FY 2016 President's Budget
Appropriation	\$446,025	\$447,408	\$459,833
Type 1 Diabetes	0	0	0
Rescission	0	0	0
Sequestration	0	0	0
FY 2014 First Secretary's Transfer	-1,120	0	0
FY 2014 Second Secretary's Transfer	-87	0	0
Subtotal, adjusted appropriation	\$444,818	\$447,408	\$459,833
OAR HIV/AIDS Transfers	0	-255	0
National Children's Study Transfers	1,466	0	0
Subtotal, adjusted budget authority	\$446,284	\$447,153	\$459,833
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	0	0	0
Subtotal, adjusted budget authority	\$446,284	\$447,153	\$459,833
Unobligated balance lapsing	-2	0	0
Total obligations	\$446,282	\$447,153	\$459,833

¹ Excludes the following amounts for reimbursable activities carried out by this account:
FY 2014 - \$5,120 FY 2015 - \$6,000 FY 2016 - \$6,200

NATIONAL INSTITUTES OF HEALTH
National Institute on Alcohol Abuse and Alcoholism

Budget Mechanism Total¹
(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								
Administrative Supplements	477	\$184,107	501	\$189,337	491	\$186,684	-10	-\$2,653
Competing:	(35)	2,349	(24)	1,269	(24)	1,269	(0)	0
Renewal								
New	29	11,412	25	9,719	26	10,336	1	617
Supplements	149	48,523	126	41,709	146	47,636	20	5,927
	2	516	2	439	4	1,148	2	709
Subtotal, Competing	180	\$60,451	153	\$51,867	176	\$59,120	23	\$7,253
Subtotal, RPGs	657	\$246,907	654	\$242,473	667	\$247,073	13	\$4,600
SBIR/STTR	29	9,329	34	10,962	37	11,889	3	927
Research Project Grants	686	\$256,236	688	\$253,435	704	\$258,962	16	\$5,527
Research Centers:								
Specialized/Comprehensive	17	\$26,350	17	\$27,821	17	\$28,200	0	\$379
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	17	\$26,350	17	\$27,821	17	\$28,200	0	\$379
Other Research:								
Research Careers	93	\$14,304	93	\$13,834	93	\$14,000	0	\$166
Cancer Education	0	0	0	0	0	0	0	0
Cooperative Clinical Research	1	6,750	1	7,180	1	7,180	0	0
Biomedical Research Support	0	0	0	0	0	0	0	0
Minority Biomedical Research Support	0	0	0	0	0	0	0	0
Other	43	15,091	46	14,254	46	15,000	0	746
Other Research	137	\$36,145	140	\$35,268	140	\$36,180	0	\$912
Total Research Grants	840	\$318,731	845	\$316,524	861	\$323,342	16	\$6,818
Ruth L. Kirchstein Training Awards:	<u>FITPs</u>		<u>FITPs</u>		<u>FITPs</u>		<u>FITP</u>	
Individual Awards	95	\$3,951	95	\$4,274	99	\$4,500	±	\$226
Institutional Awards	174	7,691	174	8,415	175	8,700	4	285
Total Research Training	269	\$11,642	269	\$12,689	274	\$13,200	5	\$511
Research & Develop. Contracts <i>(SBIR/STTR) (non-add)</i>	68 (0)	\$36,762 (2,351)	65 (4)	\$38,000 (1,100)	69 (4)	\$42,552 (1,100)	4 (0)	\$4,552 (0)
Intramural Research	108	49,006	109	49,496	109	49,991	0	495
Res. Management & Support	128	30,143	128	30,444	128	30,748	0	304
<i>Res. Management & Support (SBIR Admin) (non-add)</i>	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Construction		0		0		0		0
Buildings and Facilities		0		0		0		0
Total, NIAAA	236	\$446,284	237	\$447,153	237	\$459,833	0	\$12,680

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 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 2016 President's Budget request for NIAAA, which is \$12.680 million more than the FY 2015 Enacted level, for a total of \$459.833 million.

Research Project Grants (+\$5.527 million; total \$258.962 million): NIAAA will support a total of 704 Research Project Grant (RPG) awards in FY 2016. Noncompeting RPGs will decrease by ten awards and competing awards will increase by twenty-three awards and \$7.253 million.

Research Centers and Other Research Grants (+\$1.291 million; total \$64.380 million): NIAAA will support a total of 17 Research Centers and 140 Other Research Grants in FY 2016.

Research Training (+\$0.511 million; total \$13.200 million): The success of biomedical research is dependent upon the robustness of NIH training programs for the next generation of scientists. NIH will provide an across-the-board increase in FY 2016 of 2.0 percent for stipends levels under the Ruth L. Kirschstein National Research Service Award training program to continue efforts to attain the stipend levels recommended by the National Academy of Sciences. The requested increase will help to sustain the development of a highly qualified biomedical research workforce.

Research and Development Contracts (+\$4.552 million; total \$42.552 million): Funds are included in R&D contracts to support the expansion of clinical trials to test promising therapeutic agents for alcohol use disorders.

NATIONAL INSTITUTES OF HEALTH
National Institute on Alcohol Abuse and Alcoholism

Summary of Changes¹
(Dollars in Thousands)

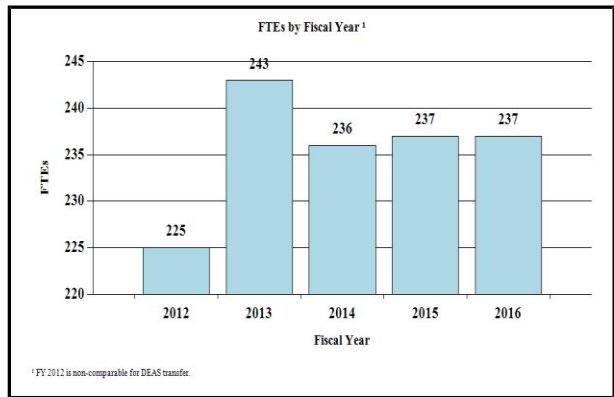
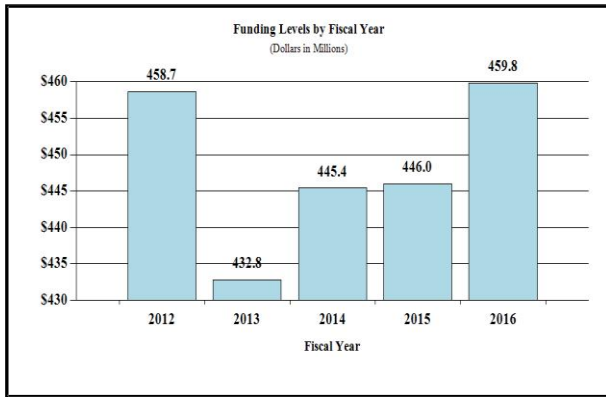
FY 2015 Enacted				\$447,153
FY 2016 President's Budget				\$459,833
Net change				\$12,680
CHANGES	FY 2016 President's Budget		Change from FY 2015	
	FTEs	Budget Authority	FTEs	Budget Authority
A. Built-in:				
1. Intramural Research:				
a. Annualization of January 2015 pay increase & benefits		\$18,989		\$79
b. January FY 2016 pay increase & benefits		18,989		250
c. One more day of pay (n/a for 2015)		18,989		0
d. Differences attributable to change in FTE		18,989		0
e. Payment for centrally furnished services		7,292		178
f. Increased cost of laboratory supplies, materials, other expenses, and non-recurring costs		23,710		0
Subtotal				\$507
2. Research Management and Support:				
a. Annualization of January 2015 pay increase & benefits		\$19,924		\$84
b. January FY 2016 pay increase & benefits		19,924		266
c. One more day of pay (n/a for 2015)		19,924		0
d. Differences attributable to change in FTE		19,924		0
e. Payment for centrally furnished services		738		18
f. Increased cost of laboratory supplies, materials, other expenses, and non-recurring costs		10,085		0
Subtotal				\$368
Subtotal, Built-in				\$876

CHANGES	FY 2016 President's Budget		Change from FY 2015	
	No.	Amount	No.	Amount
B. Program:				
1. Research Project Grants:				
a. Noncompeting	491	\$187,953	-10	-\$2,653
b. Competing	176	59,120	23	7,253
c. SBIR/STTR	37	11,889	3	927
Subtotal, RPGs	704	\$258,962	16	\$5,527
2. Research Centers	17	\$28,200	0	\$379
3. Other Research	140	36,180	0	912
4. Research Training	274	13,200	5	511
5. Research and development contracts	69	42,552	4	4,552
Subtotal, Extramural		\$379,094		\$11,881
6. Intramural Research	<u>FTEs</u> 109	\$49,991	<u>FTEs</u> 0	-\$12
7. Research Management and Support	128	30,748	0	-64
8. Construction		0		0
9. Buildings and Facilities		0		0
Subtotal, Program	237	\$459,833	0	\$11,804
Total changes				\$12,680

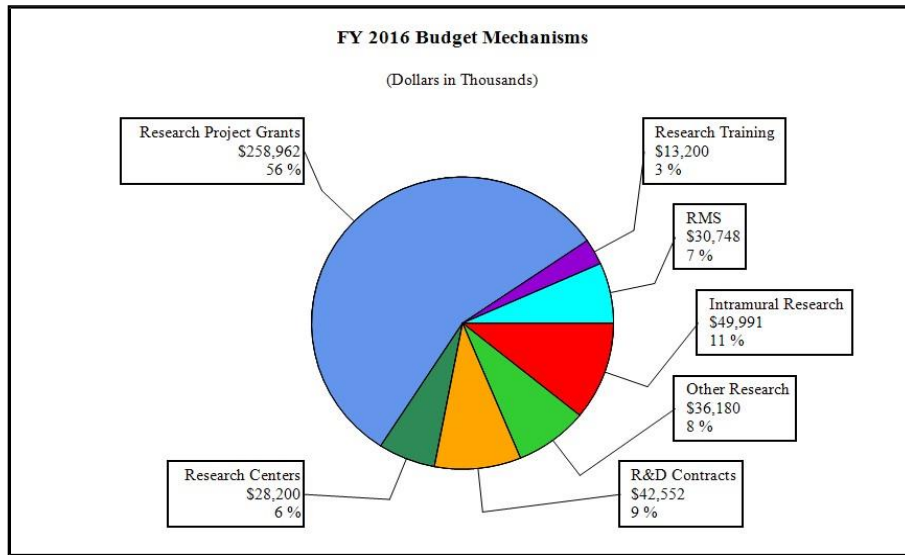
¹ The amounts in the Change from FY 2014 column take into account funding reallocations, and therefore may not add to the net change reflected herein.

Fiscal Year 2016 Budget Graphs

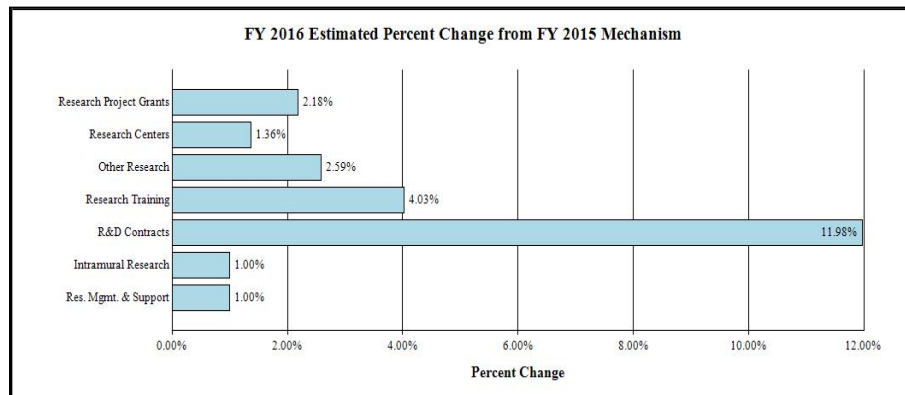
History of Budget Authority and FTEs:



Distribution by Mechanism:



Change by Selected Mechanism:



NATIONAL INSTITUTES OF HEALTH
National Institute on Alcohol Abuse and Alcoholism

Budget Authority by Activity¹
(Dollars in Thousands)

	FY 2014 Actual		FY 2015 Enacted ²		FY 2016 President's Budget		FY 2016 +/- FY 2015	
	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>
<u>Extramural Research</u>								
<u>Detail</u>								
Embryo and Fetus		\$15,728		\$15,731		\$16,240		\$509
Youth/Adolescence		61,749		61,762		63,760		1,998
Young Adult		165,564		165,599		170,957		5,358
Mid-Life/Senior Adult		124,094		124,120		128,136		4,016
Subtotal, Extramural		\$367,135		\$367,213		\$379,094		\$11,881
Intramural Research	108	\$49,006	109	\$49,496	109	\$49,991	0	\$495
Research Management & Support	128	\$30,143	128	\$30,444	128	\$30,748	0	\$304
TOTAL	236	\$446,284	237	\$447,153	237	\$459,833	0	\$12,680

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

¹ Items in italics are "non-adds"; for reference only (NIH Director's Challenge Fund amounts are already included in OD Operations budget.)

² The amounts in the FY 2014 column take into account funding reallocations, and therefore may not add to the total budget authority reflected herein.

NATIONAL INSTITUTES OF HEALTH
National Institute on Alcohol Abuse and Alcoholism

Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2015 Amount Authorized	FY 2015 CR	2016 Amount Authorized	FY 2016 PB
Research and Investigation	Section 301	42§241	Indefinite	\$447,153,000	Indefinite	\$459,833,000
National Institute on Alcohol Abuse and Alcoholism	Section 401(a)	42§281	Indefinite	\$447,153,000	Indefinite	\$459,833,000
Total, Budget Authority				\$447,153,000		\$459,833,000

NATIONAL INSTITUTES OF HEALTH
National Institute on Alcohol Abuse and Alcoholism

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2006 Rescission	\$440,333,000	\$440,333,000	\$452,271,000	\$440,333,000 (\$4,403,000)
2007 Rescission	\$433,318,000	\$433,318,000	\$433,318,000	\$435,930,000 \$0
2008 Rescission Supplemental	\$436,505,000	\$436,505,000	\$436,505,000	\$436,256,000 (\$7,757,000) \$2,320,000
2009 Rescission	\$436,681,000	\$451,688,000	\$448,834,000	\$450,230,000 \$0
2010 Rescission	\$455,149,000	\$466,308,000	\$457,887,000	\$462,346,000 \$0
2011 Rescission	\$474,649,000		\$473,904,000	\$462,346,000 (\$4,059,673)
2012 Rescission	\$469,197,000	\$469,197,000	\$453,127,000	\$460,389,000 (\$870,135)
2013 Rescission Sequestration	\$457,104,000		\$458,489,000	\$459,518,865 (\$919,038) (\$23,064,687)
2014 Rescission	\$463,848,000		\$460,765,000	\$446,025,000 \$0
2015 Rescission	\$446,017,000			\$447,408,000 \$0
2016	\$459,833,000			

Justification of Budget Request

National Institute on Alcohol Abuse and Alcoholism

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 2016+ / - FY 2015
BA	\$446,284,000	\$447,153,000	\$459,833,000	+\$12,680,000
FTE	236	237	237	0

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

Director's Overview

Alcohol misuse has profound effects on the health and well-being of individuals, families, and communities, with substantial economic costs; excessive drinking cost the United States \$224 billion in 2006.¹ According to a recent national survey, about seventeen million adults age 18 and older have an alcohol use disorder (AUD).² The National Institute on Alcohol Abuse and Alcoholism (NIAAA) is working to reduce the considerable burden of alcohol misuse for individuals at all stages of life by supporting: research on the neurobiological mechanisms underlying AUD and co-occurring disorders; the development of behavioral therapies and medications that promote recovery; studies on the consequences of alcohol misuse, including fetal alcohol spectrum disorders (FASD), effects on the developing adolescent brain, and tissue and organ damage; the development of strategies to prevent and intervene with the short- and long-term consequences of alcohol misuse; the translation and implementation of research findings into improved health care for individuals with AUD alone, with AUD and another psychiatric disorder, and with co-occurring AUD and HIV/AIDS; and the dissemination of research-based information to health care providers, researchers, policy makers and the public.

Basic Research is the Key to Prevention, Diagnosis, and Treatment

The developing brain is susceptible to alcohol exposure, beginning with the prenatal period and continuing into a person's twenties. After the brain is fully developed, it continues to be vulnerable to excessive alcohol use. Advances in research are transforming our understanding of how alcohol impacts brain structure and function throughout the lifespan, and increasing our understanding of the neuroplastic nature of the brain – its ability to adapt in response to changes in the body and environment, which can confer AUD but also promote resilience. A recent neuroimaging study of abstinent drinkers with AUD identified rewiring of brain networks that

¹ Bouchery EE, Harwood HJ, Sacks JJ, Simon CJ, Brewer RD. Economic costs of excessive alcohol consumption in the United States, 2006. External Web Site Icon. Am J Prev Med 2011;41:516–24.

² Substance Abuse and Mental Health Services Administration (SAMHSA). 2012 National Survey on Drug Use and Health (NSDUH). <http://www.samhsa.gov/data/NSDUH/2012SummNatFindDetTables/DetTabs/NSDUH-DetTabsSect5peTabs1to56-2012.htm#Tab5.8A>; This is based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).

compensated for alcohol-related deficits in attention and visuospatial function, a demonstration of the brain's ability to "recover" from AUD. Longitudinal studies using advanced neuroimaging are providing greater detail on alcohol's impact on the developmental trajectory of the brain. During a critical developmental period when unexposed children experienced heightened brain activity, those exposed prenatally to alcohol showed decreased brain activation, suggesting that deficits in network connectivity may underlie cognitive deficits in FASD. Adolescence is a period of significant brain maturation and also the time when many individuals initiate and escalate alcohol consumption. Therefore, determining the short- and long-term effects of adolescent alcohol exposure on the developing brain is a major NIAAA priority. NIAAA's National Consortium on Alcohol and Neurodevelopment in Adolescence (NCANDA) is an ongoing longitudinal study of 800 adolescents, enrolled before they began alcohol use (see program portrait). With NCANDA, NIAAA has laid the foundation for a larger, more complex study of 10,000 youth to be conducted jointly with other NIH ICs under the Collaborative Research on Addiction at NIH (CRAN) initiative to assess the effects of alcohol and other substances, alone and in combination, on the adolescent brain (see program portrait).

Co-occurring post-traumatic stress disorder (PTSD) and AUD is an important public health concern, especially among our nation's military personnel and veterans, as well as among victims of violence, including sexual assault. PTSD and AUD frequently co-occur, complicating treatment for both conditions. Animal and human studies have demonstrated that traumatic stress, like excessive alcohol consumption, is associated with altered function of the amygdala—the primary region of the brain that regulates emotional responses. NIAAA will be expanding research on the neurobiological mechanisms that underlie co-occurring PTSD and AUD to improve treatment of affected individuals.

Alcohol exposure elicits inflammatory responses in the body that are associated with serious consequences, including alcoholic liver disease and brain damage. Notably, the systems of the gut, liver, and brain interact so that perturbation by alcohol in one system can influence the others. Emerging evidence indicates that components of the brain's inflammatory response contribute to functional changes that drive excessive drinking and AUD. NIAAA is pursuing studies on the role of neuroimmune mechanisms in AUD to identify novel targets for AUD treatment (see program portrait).

Translating Discovery into Health

Despite the availability of effective therapies for AUD, fewer than 1 in 10 individuals with AUD receive treatment in a specialized facility. It is imperative that more people who need treatment get it; therefore, NIAAA continues to promote alcohol screening in primary care and other health care settings through its two very popular guides: *Alcohol Screening and Brief Intervention for Youth: A Practitioner's Guide* and *Helping Patients Who Drink Too Much: A Clinician's Guide*. For example, in 2013 NIAAA partnered with Medscape to develop an online training course to familiarize clinicians with use of the youth guide that was released in 2011. To date, more than 24,000 health care providers have been Medscape certified, and almost 200,000 copies of the youth guide have been distributed. NIAAA is also working to raise public awareness about evidence-based treatment and recently released *Treatment for Alcohol Problems: Finding and Getting Help*. This guide outlines behavioral and medication treatment options for AUD, and provides tips for selecting among treatment options and sustaining recovery. Current medications approved for treating AUD are non-addictive and have been shown to work well; however, they are under-utilized. To address this problem, NIAAA partnered with the Substance Abuse and

Mental Health Services Administration to develop a guide for providers on the use of medications in the treatment of AUD. However, recognizing that available AUD medications work better for some patients than for others, NIAAA is devoting significant resources to the development of additional AUD medications that are directed at novel targets. In FY 2015 NIAAA will begin a clinical trial of a long-acting formulation of the widely prescribed pain medication gabapentin.

The extent of binge drinking and related consequences such as alcohol poisonings, injuries, deaths, assaults, and sexual assaults on college campuses is alarming. In FY 2015 NIAAA will release a decision tool and guide, the NIAAA College Alcohol Interventions Matrix (College-AIM) to assist college administrators in selecting evidence-based interventions that are appropriate for their campuses (see program portrait). Improving prevention, diagnosis and treatment of alcoholic liver disease (ALD) continues to be a high priority for NIAAA. NIAAA supports translational research on developing novel therapies for ALD; four research consortia are pursuing new clinical approaches to treat alcoholic hepatitis, a severe form of ALD that has a high, short-term mortality rate and often progresses to cirrhosis in survivors. For individuals undergoing treatment for ALD or other medical conditions exacerbated by alcohol use such as HIV/AIDS or hepatitis C, continuous monitoring of alcohol consumption is important. NIAAA is seeking to capitalize on technological advances to develop a small, inconspicuous alcohol biosensor with real-time monitoring for use in these patients, and for other applications in research and clinical, judicial and other real-world settings.

Preparing a Diverse and Talented Workforce

NIAAA is committed to cultivating a highly-skilled scientific workforce. Through its training and career development programs, the Institute supports broad-based, multidisciplinary training aimed at preparing students and early-career investigators to conduct innovative basic, clinical, and population research in research areas related to NIAAA's mission. NIAAA also supports an array of training and career development opportunities aimed at increasing the number of investigators from underrepresented groups pursuing alcohol research at all career stages, from high school students to senior-level faculty.

Program Descriptions and Accomplishments

Embryo and Fetus: The developing embryo and fetus are uniquely vulnerable to the adverse effects of alcohol. Epidemiological studies suggest that the prevalence of fetal alcohol spectrum disorders (FASD) is between two and five percent, a prevalence similar to that of autism spectrum disorder. NIAAA's research support for this life stage encompasses: outreach to pregnant women to identify and intervene with risky drinking (during pregnancy, defined as any drinking); research to enhance our ability for early identification of and intervention with prenatal alcohol affected children; examination of nutritional and pharmacological agents that could either lessen alcohol's adverse effects on the developing embryo/fetus or ameliorate them in affected children; and research on how alcohol disrupts normal embryonic and fetal development. Research has shown that the severity of alcohol-related effects on the developing fetus is affected by the timing and level of maternal alcohol consumption, maternal nutritional status and maternal hormones. One challenge facing clinicians is the ability to recognize women who are drinking during pregnancy and infants who have been exposed to alcohol prenatally. Although the facial features of fetal alcohol syndrome (FAS), the most severe form of FASD, are well defined, less is known about the full range of facial phenotypes caused by prenatal alcohol exposure. Studies have shown that three-dimensional facial imaging may help identify children who have cognitive impairments

caused by prenatal alcohol exposure but lack the diagnostic facial features of FAS. In addition, developing biological and neuropsychological markers and determining the neurological deficits underlying the behavioral manifestations of FASD will be critical to effectively intervening with affected children. Given that alcohol appears to play a significant role in the risks of Sudden Infant Death Syndrome (SIDS) and stillbirth, NIAAA continues to collaborate with NICHD and NIDCD to support studies that investigate the interactions between prenatal alcohol exposure and other environmental and maternal factors that contribute to SIDS and stillbirth.

Budget Policy: The FY 2016 President's Budget estimate is \$16.240 million, an increase of \$0.509 million or 3.2 percent above the FY 2015 Enacted level.

Youth/Adolescence (Ages 0-17): Adolescence is the time of life during which the frontal cortex, the region of the brain responsible for executive function and decision-making, is still developing. It is also the time when drinking, binge drinking (drinking five or more drinks on one occasion), and heavy drinking (binge drinking five or more times in the past 30 days) all increase dramatically, as well as a period of significant biological, social, and environmental changes. Protecting the developing body and brain from alcohol exposure is an important investment in short- and long-term health. NIAAA continues to support multi-site longitudinal studies of youth ages 12-21 to assess the vulnerability of the adolescent brain to alcohol exposure. Complementary studies with animals are investigating the biological and neurobiological mechanisms that underlie the effects of adolescent alcohol exposure on brain function and behavior in adulthood. Screening and brief interventions by health providers has been shown to be effective in reducing problem drinking in adults and a growing body of evidence supports the use of alcohol screening among adolescents. Surveys indicate that youth are not routinely asked about drinking when they interface with the health care system. To encourage universal screening for youth in health care settings, NIAAA developed an empirically based alcohol screener and guide for pediatricians and other clinicians who care for children and adolescents. The screener was devised to identify children at elevated risk for using alcohol, children and adolescents who have already begun to experiment with alcohol, and those who are more heavily involved with alcohol. This developmentally appropriate screening instrument, which is endorsed by the American Academy of Pediatrics, has been widely distributed. It is currently being evaluated in a variety of settings including primary care, emergency departments, schools and the juvenile justice system.

Budget Policy: The FY 2016 President's Budget estimate is \$63.760 million, an increase of \$1.998 million or 3.2 percent above the FY 2015 Enacted level.

Young Adult (Ages 18-29): For young adults, whose drinking behavior and extent of associated problems vary widely, but who remain highly vulnerable because of continuing development of the frontal cortex, NIAAA focuses on risk assessment and screening, universal and selective prevention, early intervention (before problems escalate and/or become chronic), and timely treatment for those who need it. Given the pervasiveness of high-risk drinking and alcohol dependence among young adults, efforts to alter drinking trajectories at this stage have life-changing potential and can significantly reduce the burden of illness resulting from alcohol-related problems. Incidents of alcohol poisonings and other alcohol-related consequences occur frequently in this age group. On America's college campuses excessive alcohol consumption is a problem faced on an almost daily basis; especially worrisome is the intensity of drinking as reflected in the increased percentage of college students who report having experienced a blackout in the past year as a result of drinking. NIAAA-supported studies have shown that both individual

and environmental approaches to prevention and treatment for college students are necessary to reduce harmful drinking and its consequences. Working with researchers in the college drinking field, NIAAA is developing a research-based, interactive, user-friendly decision tool and guide to help colleges and universities select appropriate strategies to meet their alcohol intervention goals. The College-AIM will be launched in 2015. NIAAA's very popular *Clinician's Guide: Helping Patients Who Drink Too Much* is another important resource for use with this age group; the *Guide* is an alcohol screening tool that health care practitioners can use with individuals ages 18 and older, including young adults and college students.

Budget Policy: The FY 2016 President's Budget estimate is \$170.957 million, an increase of \$5.358 million or 3.2 percent above the FY 2015 Enacted level.

Midlife/Senior Adult: Research has demonstrated that individual differences contribute to risk for AUD and AUD-related health outcomes as well as response to treatment. NIAAA's research focus for the midlife/senior population includes: 1) identification of mechanisms by which alcohol and its metabolites cause tissue and organ pathologies; 2) development of treatment strategies for AUD (including medications) that are tailored to specific populations; and 3) treatment of individuals with co-existing psychiatric and medical disorders. To ensure efficient testing of promising compounds for AUD and to move them more quickly through early clinical testing, NIAAA's Clinical Investigations Group (NCIG) continues to coordinate multi-site Phase II clinical trials. By taking on more of the risk for failure during early drug development, NIAAA anticipates that pharmaceutical companies will be more willing to pursue those compounds that show positive effects. NIAAA's medications development program has been especially successful at linking individual genetic variation with positive outcomes for specific medications. NIAAA continues to promote its *Rethinking Drinking* initiative for the public which features evidence-based information about risky drinking patterns in U.S. adults, as well as support for cutting back or quitting alcohol use. NIAAA also continues to support development of medications for the treatment of alcoholic liver disease, especially alcoholic hepatitis, and to seek biomarkers that enable detection of various stages of liver damage.

Budget Policy: The FY 2016 President's Budget estimate is \$128.136 million, an increase of \$4.016 million or 3.2 percent above the FY 2015 Enacted level.

Intramural Research: A major focus of the NIAAA Intramural Program is to improve diagnosis, prevention and treatment of AUD and co-occurring disorders by increasing understanding of the basic biological and neurobiological mechanisms underlying these disorders. Intramural advances are making it possible to explore the relationships between specific brain circuits and alcohol-related behaviors in greater detail; recently intramural scientists developed a cutting edge fiber optic technique that allows measurement of specific subsets of neurons deep in the brains of freely moving mice. The Intramural Research Program will continue to focus on many important areas of alcohol research including: the genetic and neurobiological bases of AUD and related behaviors; the impact of alcohol on brain structure and function; the patterns of alcohol use and prevalence of AUD and co-occurring disorders in the U.S. population; and the molecular and cellular processes underlying the effects of alcohol exposure, all of which will promote exploration of new approaches to clinical diagnoses of alcohol-related behaviors and prevention of alcohol misuse. For treatment, specific goals include identifying novel therapeutic targets and biomarkers that predict response to treatment, and translating these findings into new treatments. In a recent study in which intramural investigators intravenously administered ghrelin, a hormone in the stomach

that regulates hunger, to drinkers with AUD, study participants experienced increased alcohol craving when exposed to visual cues of alcohol use. Increased craving for food or other drinks was not associated with ghrelin administration, suggesting the craving was specific to alcohol. This preliminary finding provides evidence that ghrelin plays a role in the neurobiology of alcohol craving and that ghrelin activity may be a potential target for AUD treatment, particularly in preventing relapse in abstinent drinkers. The intramural program will continue to focus on the development of novel pharmacotherapies for AUD and co-occurring disorders, and the mechanisms of and treatment for alcoholic liver disease and other consequences of AUD.

Budget Policy: The FY 2016 President's Budget estimate is \$49.991 million, an increase of \$0.495 million or 1.0 percent above the FY 2015 Enacted level.

Research Management and Support: NIAAA 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.

Budget Policy: The FY 2016 President's Budget estimate is \$30.748 million, an increase of \$0.300 million or 1.0 percent above the FY 2015 Enacted level.

Program Portrait: Impact of Drinking During Adolescence on the Developing Brain

FY 2015 Level: \$10.3million
FY 2016 Level: \$10.6 million
Change: +\$0.3 million

During childhood and into early adulthood, maturing connections between brain cells enable increasingly complex communication among brain regions, and full maturity of certain regions including the frontal cortex does not occur until about age 25. Considerable evidence shows that drinking at early ages can disrupt brain networks in ways that increase the likelihood of developing alcohol-related problems later in life. Research also indicates that adolescent exposure to alcohol can compromise cognitive functioning both in the short and long term. Thus, furthering our understanding of alcohol's effects on the developing human brain is of paramount importance.

In 2012, NIAAA launched the National Consortium on Alcohol and Neurodevelopment in Adolescence (NCANDA), a multi-site longitudinal study to address alcohol's effects on normal brain development. The five NCANDA sites collectively will enroll more than 800 participants ages 12-21, and will capture brain images and other data on these youth beginning before they start to drink. NCANDA's overall objectives are to elucidate the short- and long-term effects of alcohol exposure on the developing human brain and to identify brain characteristics that may predict alcohol use disorder. The NCANDA project is currently scheduled to run through June 2017.

Although NCANDA was initially funded in 2012, it has its roots in NIAAA's longstanding research portfolio on adolescent neuroscience and in the Institute's Underage Drinking Research Initiative. In late 2007, NIAAA laid the foundation for NCANDA when it solicited pilot studies to determine the feasibility of, and broaden the research base for, a large longitudinal study of the effects of child and adolescent alcohol use on the developing human brain. On a parallel track, the consortium on Neurobiology of Adolescent Drinking in Adulthood (NADIA) uses rat models to study the mechanism by which neurobiological effects of adolescent alcohol exposure persist into adulthood.

NCANDA is now poised to inform a larger trans-NIH collaborative CRAN initiative that will involve NIAAA, NIDA, NCI and NICHD. Referred to as the Adolescent Brain Cognitive Development (ABCD) study, this proposed project will be unique in its size and duration, as it calls for 10,000 youths to be followed and studied for 10 years to assess the neurodevelopmental consequences of substances of abuse used either individually or in combination. And, importantly, like NCANDA, it will recruit participants before they have initiated substance use.

Program Portrait: Addressing College Drinking and its Harmful Consequences

FY 2015 Level: \$5.3 million
FY 2016 Level: \$5.4 million
Change: +\$0.1 million

Although NIAAA's research initiatives have made significant contributions to college drinking prevention in the past fifteen years, frequent news reports about alcohol-related tragedies on America's campuses demonstrate that this important work is far from done. While the percentage of U.S. college students who drink as well as those who binge drink has decreased somewhat, the intensity of consumption (amount and speed) among those college students who do drink seems to be increasing. Each year 18-24 year olds, both in college and not in college, account for about 300,000 emergency department visits and 60,000 hospitalizations related to excessive drinking, and the numbers of such visits have been increasing over the past ten years.

Building on prior accomplishments including its seminal report, *A Call to Action: Changing the Culture of Drinking at U.S. Colleges*, and with an eye toward future progress, in 2010 NIAAA convened a group of college presidents to advise the Institute on both the types of information they need and the ways they want to receive it. Among the recommendations the presidents made to NIAAA, one stood out—the need for a clear, easy-to-understand tool to facilitate decisions about alcohol intervention strategies

In response, NIAAA engaged a team of premier researchers with expertise in college drinking interventions to help the Institute develop a research-based, interactive, user-friendly decision tool and guide to aid colleges and universities in selecting appropriate strategies to meet their alcohol intervention goals. An additional group of prominent college drinking researchers served as peer reviewers for the data analysis that underlies the decision tool being developed. The overarching goal of the initiative is to increase the likelihood that research will inform the choice of college drinking interventions implemented on U.S. campuses. This tool and guide, the NIAAA College Alcohol Interventions Matrix (College-AIM), will allow college presidents and staff to review the strategies they are currently using as well as explore others that may serve them better. Users will be able to search for strategies according to intervention level (e.g., individual, group, campus-wide, community) and evaluate factors, such as effectiveness, costs, and ease of implementation. The NIAAA College-AIM is being finalized and will be released in 2015.

Program Portrait: The Role of Immune-Signaling in Mediating Alcohol Drinking Behavior

FY 2015 Level: \$3.8 million

FY 2016 Level: \$3.9 million

Change: +\$0.1 million

Components of the immune system that defend the body against invading pathogens are now being implicated in brain function and behavior. With respect to alcohol, excessive drinking has been shown to increase leakage of bacterial toxins from the gut, which then elicit an immune response in the liver that can lead to immune signaling in the brain. Immune signaling in the brain can also occur when alcohol directly enters the brain by crossing the blood-brain barrier.

Both genetic and behavioral studies indicate that excessive alcohol consumption, directly and indirectly, activates immune signaling in the brain, which may in turn affect alcohol consumption, development of AUD and relapse. A human genetic study showed that individuals carrying specific variants in immune-related genes had increased risk for AUD. Genetic studies also demonstrated differences in expression of immune-related genes in the brains of individuals with AUD as well as in animal models of chronic alcohol consumption. Behavioral studies in humans with AUD have correlated alcohol craving and consumption with the levels of immune factors and bacterial toxins circulating in the bloodstream. Lastly, behavioral studies in animals have demonstrated that immune-related factors act through the brain stress system to promote anxiety that is often associated with alcohol withdrawal. This body of evidence suggests that immune-signaling pathways represent unexplored targets for AUD treatment. Preliminary research in animals has demonstrated that pharmacologically disrupting neuroimmune signaling pathways can reduce excessive alcohol consumption. Based on these and other findings, NIAAA will pursue studies that explore the role of neuroimmune signaling as potential targets for AUD treatment in humans.

NATIONAL INSTITUTES OF HEALTH
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Budget Authority by Object Class¹

(Dollars in Thousands)

	FY 2015 Enacted	FY 2016 President's Budget	FY 2016 +/- FY 2015
Total compensable workyears:			
Full-time employment	237	237	0
Full-time equivalent of overtime and holiday hours	0	0	0
Average ES salary	\$0	\$0	\$0
Average GM/GS grade	12.7	12.7	0.0
Average GM/GS salary	\$110	\$111	\$1
Average salary, grade established by act of July 1, 1944 (42 U.S.C. 207)	\$89	\$90	\$1
Average salary of ungraded positions	\$142	\$143	\$1
OBJECT CLASSES	FY 2015 Enacted	FY 2016 President's Budget	FY 2016 +/- FY 2015
11.1 Personnel Compensation			
Full-Time Permanent	\$18,503	\$18,759	\$256
11.3 Other Than Full-Time Permanent	7,651	7,757	106
11.5 Other Personnel Compensation	431	437	6
11.7 Military Personnel	372	377	5
11.8 Special Personnel Services Payments	2,968	3,009	41
11.9 Subtotal Personnel Compensation	\$29,925	\$30,339	\$414
12.1 Civilian Personnel Benefits	\$7,987	\$8,242	\$256
12.2 Military Personnel Benefits	321	332	10
13.0 Benefits to Former Personnel	0	0	0
Subtotal Pay Costs	\$38,233	\$38,913	\$680
21.0 Travel & Transportation of Persons	\$764	\$721	-\$43
22.0 Transportation of Things	90	85	-5
23.1 Rental Payments to GSA	2	2	0
23.2 Rental Payments to Others	0	0	0
23.3 Communications, Utilities & Misc. Charges	345	326	-19
24.0 Printing & Reproduction	7	7	0
25.1 Consulting Services	\$529	\$511	-\$19
25.2 Other Services	4,814	4,582	-232
25.3 Purchase of goods and services from government accounts	47,949	49,045	1,095
25.4 Operation & Maintenance of Facilities	117	111	-6
25.5 R&D Contracts	19,766	23,944	4,178
25.6 Medical Care	54	51	-3
25.7 Operation & Maintenance of Equipment	610	577	-33
25.8 Subsistence & Support of Persons	0	0	0
25.0 Subtotal Other Contractual Services	\$73,840	\$78,820	\$4,980
26.0 Supplies & Materials	\$3,200	\$3,038	-\$162
31.0 Equipment	1,458	1,379	-79
32.0 Land and Structures	0	0	0
33.0 Investments & Loans	0	0	0
41.0 Grants, Subsidies & Contributions	329,213	336,542	7,329
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	\$408,920	\$420,920	\$12,000
Total Budget Authority by Object Class	\$447,153	\$459,833	\$12,680

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

NATIONAL INSTITUTES OF HEALTH
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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)	\$18,503	\$18,759	\$256
Other Than Full-Time Permanent (11.3)	7,651	7,757	106
Other Personnel Compensation (11.5)	431	437	6
Military Personnel (11.7)	372	377	5
Special Personnel Services Payments (11.8)	2,968	3,009	41
Subtotal Personnel Compensation (11.9)	\$29,925	\$30,339	\$414
Civilian Personnel Benefits (12.1)	\$7,987	\$8,242	\$256
Military Personnel Benefits (12.2)	321	332	10
Benefits to Former Personnel (13.0)	0	0	0
Subtotal Pay Costs	\$38,233	\$38,913	\$680
Travel & Transportation of Persons (21.0)	\$764	\$721	-\$43
Transportation of Things (22.0)	90	85	-5
Rental Payments to Others (23.2)	0	0	0
Communications, Utilities & Misc. Charges (23.3)	345	326	-19
Printing & Reproduction (24.0)	7	7	0
Other Contractual Services:			
Consultant Services (25.1)	357	336	-21
Other Services (25.2)	4,814	4,582	-232
Purchases from government accounts (25.3)	32,805	33,624	819
Operation & Maintenance of Facilities (25.4)	117	111	-6
Operation & Maintenance of Equipment (25.7)	610	577	-33
Subsistence & Support of Persons (25.8)	0	0	0
Subtotal Other Contractual Services	\$38,703	\$39,229	\$526
Supplies & Materials (26.0)	\$3,200	\$3,038	-\$162
Subtotal Non-Pay Costs	\$43,109	\$43,406	\$297
Total Administrative Costs	\$81,342	\$82,319	\$976

NATIONAL INSTITUTES OF HEALTH
National Institute on Alcohol Abuse and Alcoholism

Detail of Full-Time Equivalent Employment (FTE)

OFFICE/DIVISION	FY 2014 Actual			FY 2015 Enacted			FY 2016 Est.		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
Division of Epidemiology and Prevention Research									
Direct:	11	-	11	11	-	11	11	-	11
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	11	-	11	11	-	11	11	-	11
Division of Intramural Research Program									
Direct:	97	4	101	98	4	102	98	4	102
Reimbursable:	7	-	7	7	-	7	7	-	7
Total:	104	4	108	105	4	109	105	4	109
Division of Metabolism and Health Effects									
Direct:	9	-	9	9	-	9	9	-	9
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	9	-	9	9	-	9	9	-	9
Division of Neuroscience and Behavior									
Direct:	14	-	14	14	-	14	14	-	14
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	14	-	14	14	-	14	14	-	14
Division of Treatment and Recovery Research									
Direct:	10	-	10	10	-	10	10	-	10
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	10	-	10	10	-	10	10	-	10
Office of Extramural Activities									
Direct:	20	-	20	20	-	20	20	-	20
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	20	-	20	20	-	20	20	-	20
Office of Resource Management									
Direct:	36	-	36	36	-	36	36	-	36
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	36	-	36	36	-	36	36	-	36
Office of Science Policy and Communications									
Direct:	16	-	16	16	-	16	16	-	16
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	16	-	16	16	-	16	16	-	16
Office of the Director									
Direct:	12	-	12	12	-	12	12	-	12
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	12	-	12	12	-	12	12	-	12
Total	232	4	236	233	4	237	233	4	237
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	13.0								
2013	12.7								
2014	12.7								
2015	12.7								
2016	12.7								

NATIONAL INSTITUTES OF HEALTH
National Institute on Alcohol Abuse and Alcoholism

Detail of Positions¹

GRADE	FY 2014 Actual	FY 2015 Enacted	FY 2016 President's Budget
Total, ES Positions	0	0	0
Total, ES Salary	0	0	0
GM/GS-15	30	30	30
GM/GS-14	52	52	52
GM/GS-13	35	36	36
GS-12	28	28	28
GS-11	9	9	9
GS-10	2	2	2
GS-9	6	6	6
GS-8	2	2	2
GS-7	8	8	8
GS-6	0	0	0
GS-5	1	1	1
GS-4	1	1	1
GS-3	1	1	1
GS-2	0	0	0
GS-1	0	0	0
Subtotal	175	176	176
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	1	1
Senior Grade	0	0	0
Full Grade	2	2	2
Senior Assistant Grade	0	0	0
Assistant Grade	0	0	0
Subtotal	3	3	3
Ungraded	75	75	75
Total permanent positions	178	179	179
Total positions, end of year	253	254	254
Total full-time equivalent (FTE) employment, end of year	236	237	237
Average ES salary	0	0	0
Average GM/GS grade	12.7	12.7	12.7
Average GM/GS salary	108,687	109,774	110,872

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