

Figure Text

FIGURE 1: NUMBER OF NIDDK COMPETING R01 APPLICATIONS SCORING WITHIN THE TOP 50TH PERCENTILE AND NUMBER OF NIDDK PERCENTILED R01 APPLICATIONS FUNDED IN FY 2018

This is a vertical bar chart whose x-axis is percentiles in increments of one from one to fifty. The y-axis is the number of applications or awards from zero to fifty in increments of ten. There are two vertical bars for each percentile, one showing the number of applications and one showing the number of awards at that percentile. The bars show that nearly all applications that scored at or below the payline (the thirteenth percentile) received funding in fiscal year 2018.

FIGURE 2: NIDDK COMPETING R01 APPLICATION FUNDING CURVES FOR FY 2009-2018

This is a line graph whose x-axis shows percentiles from one to fifty in binned increments of five (for example, bin one to five, bin six to ten, bin eleven to fifteen, etc.). The y-axis indicates the percentage of applications that were funded in fiscal years 2009 through 2018 and ranges from zero to one hundred percent in increments of twenty. For each of the fiscal years in the chart there is initially a flat or nearly flat line indicating that nearly one hundred percent of applications that scored below the payline for that fiscal year were funded. Then each line declines steeply around the payline value to zero percent at the upper percentile range. Because paylines change each year, the point on the line where percent funded values decline is different each year.

FIGURE 3: NUMBER OF COMPETING NIDDK R01 APPLICATIONS (INCLUDING RESUBMISSIONS) RECEIVED FOR FUNDING CONSIDERATION IN FY 1997-2018

This is a stacked bar chart whose x-axis shows fiscal years between 1997 and 2018 in increments of one year. The y-axis shows the number of competing R01 applications received; it ranges from zero to three thousand two hundred in increments of five hundred. For each Fiscal Year, the height of the bar represents the total number of competing R01 applications received by NIDDK, and the bar is subdivided to indicate the portion of applications that are new and the portion that are resubmissions. Total applications received have increased from about 1600 competing applications in 1997 to about 2800 applications in 2018. Total numbers of applications increased steadily from 1997 to a peak of 2500 in 2006, then total applications remained relatively level varying from 2200 to 2400 from 2007 to 2014. From 2015 through 2018 competing application numbers increased to about 2700. In 1997 new applications made up about two-thirds of all applications, and resubmission applications comprised the remaining third of applications. From 1997 to 2018, the portion of competing applications received that were resubmission applications has steadily declined. The fraction of new applications increased to about 75 percent from 2000 through 2010. And by 2016 through 2018, new applications made up about 85% of all applications received, while resubmissions accounted for about 15 percent of applications.

FIGURE 4: NUMBER OF COMPETING NIDDK R01 APPLICATIONS RECEIVED FOR FUNDING CONSIDERATION IN FYS 2009-2018: NEW VERSUS RENEWAL APPLICATION NUMBERS

This is a line chart whose x-axis shows fiscal years between 2009 and 2018 with increments of one year. The y-axis shows the number of competing R01 applications received by NIDDK and ranges from zero to two thousand seven hundred in intervals of five hundred. There are two lines on the chart (from top to bottom): 1) Number of New R01 applications rose through this ten-year period from about 1600 in 2009 to 2500 in 2016. New R01 application numbers remained about 2500 from 2016 through 2018. 2) Number of resubmission (or renewal) R01 applications received each year declined during these ten years. Resubmissions were about 700 in 2009 and 2010, then decreased steadily until 2018, when there were about 400 renewal R01 applications received.

FIGURE 5: NUMBER OF NIDDK R01/R37 GRANTS (COMPETING AND NON-COMPETING) FUNDED IN FY 1997-2018

This is a stacked bar chart whose x-axis shows fiscal years between 1997 and 2018 with increments of one year. The y-axis shows the number of R01 and R37 awards and ranges from zero to two thousand five hundred. The total height of the bar in each fiscal year represents the total number of competing and non-competing R01 and R37 grants awarded. The total number of awards rises from about one thousand seven hundred in 1997 to about two thousand three hundred in 2003, and remains relatively level through 2011. The total number of R01 awards decreases to just under 2000 in 2014 through 2016. In 2017 and 2018, number of awards increased slightly each year, and in 2018 the number of R01 awards is just over 2000. The stacked bars are subdivided into portions that represent non-competing awards, new competing awards, and renewal competing awards. Non-competing awards comprise about 75 percent of R01 awards each year, with numbers increased from about 1100 noncompeting awards in 1997 to about 1700 from 2004 through 2012. Numbers of noncompeting awards gradually decreased to about 1700 in 2014 through 2018. In 1997, the 25 percent of competing awards were evenly split between new and renewal awards. But over the last 21 years, competing awards are increasingly to new awards rather than renewals, and by 2016 through 2018 only about 15% of competing awards were renewals and the majority of competing awards (about 85%) were to new awards.

FIGURE 6: OVERALL NIDDK EXPENDITURES (INCLUDES DIRECT AND FACILITIES AND ADMINISTRATIVE COSTS) ON R01 AWARDS (COMPETING AND NON-COMPETING) IN FY 1997-2018

This is a line chart whose x-axis shows fiscal years between 1997 and 2018 in increments of one year. The y-axis shows total awarded dollars from zero to nine hundred and fifty million dollars in increments of one hundred million dollars. There is a single line on the chart, which starts just under four hundred million dollars in 1997, then rises steadily to about seven hundred fifty million dollars in fiscal year 2005 where it stays almost flat until fiscal year 2008. By 2010 it rises to about eight hundred sixty million dollars but then declines to seven hundred fifty million dollars in fiscal year 2013. The line then rises steadily to just over nine hundred million dollars in fiscal year 2018.

FIGURE 7: MEDIAN TOTAL COSTS (INCLUDES DIRECT AND FACILITIES AND ADMINISTRATIVE COSTS) OF NIDDK R01 GRANTS (COMPETING AND NON-COMPETING) IN FY 1997-2018

This is a line chart whose x-axis shows fiscal years between 1997 and 2018 in increments of one year. The y-axis displays dollar amounts ranging from zero to four hundred thousand dollars in increments of one hundred thousand dollars. There is a single line on the chart. It starts in fiscal year 1997 at just over two hundred thousand dollars and rises steadily to just over three hundred thousand dollars in fiscal year 2005. It is then essentially flat until fiscal year 2008 when it rises with some fluctuations to just over four hundred thousand dollars in 2018.

FIGURE 8: NIDDK EXTRAMURAL RESEARCH FUNDING BY CATEGORY (COMPETING AND NON-COMPETING)

This is a horizontal bar chart whose x-axis displays percentages from zero to one hundred in increments of twenty percentage points. The y-axis shows fiscal years ascending from the bottom, starting with 2009 and ending with 2018 in increments of one year. Each horizontal bar corresponds to a fiscal year and is split into the following categories in order from left to right: R01/R37, Other R, Initiatives, Collaborative Grants, Centers, Career Development, Training, Other Research, and Contracts/Interagency Agreements. In general, most categories represent the same proportion of the budget from year to year. R01 and R37 budget has increased gradually from 50 percent to 55 percent over the last ten years. However, contracts and interagency agreements decreased from about nine percent in 2007 to about two percent in fiscal year 2011. Since then the proportion of the budget devoted to these mechanisms has remained in the two to three percent range. Other Research mechanisms have grown from the one to two percent range in fiscal years 2007 to 2011 to the four to five percent range in fiscal years 2012 to 2016, but reverted to about two percent in fiscal year 2017. Initiatives remained at about 11 percent of the budget until fiscal year 2017, when Initiatives increased to 15 percent. Other mechanisms' percentage of the funding budget have remained fairly constant over this span of fiscal years.

FIGURE 9: MAINTAINING A STABLE POOL OF NIDDK INVESTIGATORS— NUMBER OF INVESTIGATORS SUPPORTED BY AT LEAST ONE R01 OR R37

This is a vertical stacked bar chart whose x-axis displays fiscal years from 2009 to 2018 in increments of one year. The y-axis displays counts of investigators from zero to two thousand two hundred in increments of five hundred. The

total height of the bar each year represents the number of unique investigators supported by NIDDK R01 and R37 awards. The number of principal investigators with an R01 or R37 has fluctuated modestly over time. About one thousand nine hundred R01 and R37 investigators were supported by NIDDK from 2009 through 2012, then the number of investigators declined to about one thousand eight hundred investigators in fiscal years 2014 and 2015, before rebounding just over two thousand in fiscal year 2018. Established investigators comprise over 90% of all NIDDK R01 or R37 funded investigators across all years and new investigators has held steady at about 7 percent of investigators.

FIGURE 10: MAINTAINING A STABLE POOL OF NIDDK INVESTIGATORS— NUMBER OF INVESTIGATORS SUPPORTED BY AT LEAST ONE R01 OR R37 AND GROWTH OF MULTIPLE PI (MPI) AWARDS

This is a vertical bar chart whose x-axis shows fiscal years between 2009 and 2018 in increments of one year. The y-axis displays numbers from zero to two thousand six hundred in increments of five hundred. There are three vertical bars for each fiscal year: 1) one shows the number of investigators supported by R01 or R37 awards each fiscal year, 2) one shows the number of R01 or R37 awards paid by NIDDK each fiscal year, and 3) one shows the percentage of awards that are multiple principle investigator (MPI) awards each fiscal year. From fiscal year 2009 through 2016, there were more R01 awards than unique investigators supported by NIDDK by R01s, as some investigators have multiple R01 awards. However, the gap gradually decreased until by 2018, there were an equivalent number of investigators and R01 awards supported by NIDDK (two thousand). Number of NIDDK investigators with R01 or R37 awards ranges between one thousand seven hundred to two thousand each year. The number of R01 awards was about two thousand five hundred in fiscal years 2009 through 2011, then declined to just under two thousand from fiscal year 2014 through 2017. In 2018 the number of R01 awards reached about two thousand again. The third bar shows a steady increase in the number of multiple investigator R01 awards over the last ten years, from 2 percent of in 2009 to 18 percent of R01 awards in 2018.

FIGURE 11: PRESERVING A STABLE POOL OF NEW INVESTIGATORS—NUMBER OF NIDDK EARLY STAGE INVESTIGATOR (ESI) R01 APPLICATIONS AND NUMBER OF UNIQUE ESIs APPLYING AND AWARDED

This is a vertical bar chart whose x-axis shows fiscal years between 2010 (when the ESI data collection began) and 2018 in increments of one year. The y-axis displays numbers from zero to four hundred in increments of one hundred. There are three vertical bars for each fiscal year: 1) one shows the number of ESI R01 applications, 2) one shows the number of unique ESIs that submitted R01 applications to NIDDK, and 3) one shows the number of ESI R01 awards. Number of ESI applications ranged between about three hundred to nearly four hundred during these years, and the number of unique ESIs ranges from about two hundred fifty to three hundred and forty. The number of ESIs applying is always lower than the number of ESI applications, as very few ESIs submit multiple principle investigator (MPI) applications. The number of ESI awards ranged from about fifty to about eighty. From 21 percent to 29 percent of ESIs applying to NIDDK each year get funded.

FIGURE 12: PRESERVING A STABLE POOL OF NEW INVESTIGATORS—PERCENT OF NIDDK NEW COMPETING R01 APPLICATIONS SUBMITTED AND AWARDS RECEIVED BY EARLY STAGE INVESTIGATORS (ESIs)

This is a vertical bar chart whose x-axis shows fiscal years between 2010 and 2018 in increments of one year. The y-axis displays percentages from zero to thirty percent in increments of ten percent. There are two vertical bars for each fiscal year, one of which shows NIDDK ESI R01 applications as a percentage of all new R01 applications received by NIDDK and the other of which shows NIDDK ESI R01 awards as a percentage of all new NIDDK R01 awards in that year. There has been a slight decline in the fraction of new R01 applications submitted by ESIs, from about 17 percent in fiscal years 2010 through 2013 to about 14 percent in fiscal years 2017 and 2018. In contrast, ESI R01 awards make up about 23 percent of awards through this period, with the exception of fiscal year 2010, where new investigator awards comprised about 17 percent of all new R01 awards.

FIGURE 13: MEDIAN AND MEAN AGES OF NIDDK R01 AND R37 INVESTIGATORS

This is a line chart whose x-axis shows fiscal years between 2009 and 2018 in increments of one year. The y-axis displays the age of investigators from fifty years to fifty-five years in increments of one year. There are two lines on the chart. The top line shows the mean age of investigators and rises from just under fifty-two years in fiscal year 2007 to just over fifty-three years in fiscal year 2017. The lower line shows the median age of investigators. The

median age of investigators from fiscal year 2007 through 2012 was fifty-one years. The median age then rose to fifty-two years in fiscal year 2013 and has remained at this level through fiscal year 2018.

FIGURE 14: SUPPORT PIVOTAL CLINICAL STUDIES AND TRIALS—NIDDK HUMAN SUBJECTS RESEARCH FUNDING AS A PROPORTION OF ALL EXTRAMURAL RESEARCH FUNDING

This is a vertical bar chart whose x-axis shows fiscal years between 2009 and 2018 in increments of one year. The y-axis displays percentages from zero percent to forty five percent in increments of ten percent. There are two vertical bars for each fiscal year. The left bar of each fiscal year pair displays the percent of the NIDDK extramural research budget that supports human subjects research for all NIDDK extramural research awards. The right bar of each fiscal year pair displays the percent of the NIDDK extramural research budget that supports human subjects research for only NIDDK R01 and R37 awards. The percentage of NIDDK extramural budget supporting human subjects research for all NIDDK extramural research awards remained fairly stable at about thirty percent from fiscal years 2009 and 2010, but then climbed from fiscal year 2011 through 2014 to forty one percent in fiscal years 2017 and 2018. The percentage of the NIDDK extramural budget supporting human subjects research for NIDDK R01 and R37 awards climbed consistently over these ten years and rose from approximately twenty-seven percent in fiscal year 2009 to about thirty-seven percent in fiscal years 2017 and 2018.

Figure 15: NIDDK Is Committed to Training the Next Generation of Scientists

FIGURE 15A: NIDDK FELLOWSHIP (F), CAREER DEVELOPMENT (K), AND TRAINING (T) AWARDS AS A PERCENT OF TOTAL EXTRAMURAL RESEARCH FUNDING

This is a line chart whose x-axis displays fiscal years from 2009 to 2018 in one year increments. The y-axis shows percentages from zero to six percent. There are three lines on the chart, which display (from top to bottom): 1) K awards—accounted for approximately five percent of extramural funding between fiscal years 2009 and 2018 with levels fluctuating only modestly until fiscal year 2017 when K awards decreased to 4.4 percent of total funding, then rebounded slightly in fiscal year 2018 to about 4.6 percent of total funding; 2) T awards—T awards remained about 3.1 percent of extramural funding from fiscal year 2010 through 2015, then dropped to 2.8 percent in fiscal year 2017 and rebounded to 2.9 percent in fiscal year 2018; and 3) F awards—these have increased slightly from 0.7 percent of the research budget in 2009 to just under one percent in 2016 and 2018.

FIGURE 15B: NUMBERS OF NIDDK FELLOWSHIP (F), CAREER DEVELOPMENT (K), AND TRAINING (T) AWARDS BY FISCAL YEAR

This is a line chart whose x-axis displays fiscal years from 2009 to 2018 in one-year increments. The y-axis shows numbers from zero to eight hundred in increments of two hundred. There are three lines on the chart, which display (from top to bottom): 1) K awards—there were about six hundred K awards in 2009, which declined about five hundred in 2011, fluctuated slightly from year to year until fiscal year 2015, and then declined to about four hundred fifty awards in fiscal years 2017 and 2018. 2) T awards—the number of T awards remained about two hundred fifty in fiscal years 2009 through 2012, then dropped to about two hundred fifteen in fiscal years 2013 through 2016. There was a surge to about 250 T awards again in fiscal year 2017, which returned to about two hundred in fiscal year 2018. 3) F awards—these have increased from two hundred six awards in fiscal year 2009 to two hundred forty in fiscal years 2010 through 2015, then increased again to about three hundred awards in fiscal years 2016 through 2018.

FIGURE 15C: NUMBER OF NIDDK CAREER DEVELOPMENT (K) AWARDS BY ACTIVITY AND FISCAL YEAR

This is a line chart whose x-axis displays fiscal years from 2009 through 2018 in increments of one year. The y-axis displays numbers of awards from zero to two hundred fifty in increments of fifty, and includes both competing and non-competing awards. There are five lines, from top to bottom: 1) K08—this line starts at two hundred seven in 2009, then generally declines to about one hundred seventeen in fiscal years 2017 and 2018; 2) K01—this line starts at one hundred seventy nine in fiscal year 2009, declines to about one hundred fifty in fiscal years 2011 and 2012, then rises to nearly two hundred in 2015 before declining again to about one hundred sixty in fiscal years 2016 through 2018; 3) K23—this line remains generally stable at about one hundred twenty four awards throughout this period,

with small variability from year to year; 4) K24—this line starts at around fifty awards in fiscal years 2009 and 2010, then declines steadily to about forty awards in fiscal years 2013 and 2014, to about thirty five awards in fiscal years 2015 and 2016, and to twenty six awards in fiscal years 2017 and 2018; 5) K99—this line starts at twenty eight awards in 2009, then declines to around twenty from 2010 to 2015, and to about sixteen awards in fiscal years 2016 through 2018.

FIGURE 15D: NUMBER OF NIDDK CAREER DEVELOPMENT (K) APPLICATIONS BY ACTIVITY AND FISCAL YEAR

This is a line chart whose x-axis displays fiscal years from 2009 through 2018 in increments of one year. The y-axis displays numbers of competing applications from zero to one hundred seventy in increments of twenty-five. There are five lines, from top to bottom: 1) K01—this line starts at eight-four applications in 2009, then rises to one hundred ten in 2010 and rises gradually to about one hundred thirty in 2014. K01 application numbers decrease to about one hundred six in fiscal year 2016 then rebound the following two years to reach one hundred fifty-one in fiscal year 2018. 2) K08—this line starts at eighty-three applications in 2009 remains relatively constant through 2012, then declines to about sixty in fiscal years 2013 through 2018; 3) K23—this line starts at about sixty-eight applications in 2008 and remains generally at about that level, except for a peak to ninety-four in 2011, until 2018 when number of K23 applications increased to one hundred twelve; 4) K24—this line remains generally stable at around sixteen applications through 2018, except for a rise in fiscal years 2011 and 2012 to about 24 applications; 5) K99—this line starts at forty-two applications in 2009 and rises to a peak of seventy-one applications in 2013, followed by a decline to thirty-four applications in 2015; K99 applications held constant at about forty four in fiscal years 2016 through 2018.

FIGURE 15E: NUMBER OF NIDDK TRAINING (T32) AWARD SLOTS BY FISCAL YEAR

This is a vertical bar chart whose x-axis displays fiscal years from 2008 to 2017 in increments of one year. The y-axis shows the number of T32 slots from zero to one thousand in increments of two hundred. There is one vertical bar for each fiscal year. From fiscal year 2008 to 2012 the number of T32 trainee slots remained stable at about nine hundred per year. However, since 2013 the number of slots has declined to about eight hundred twenty-five for fiscal years 2013 through 2015, then dropped to under eight hundred in fiscal years 2016 and 2017.