Figure Text

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Figure 1: Number of NIDDK Paid and Unpaid R01 Applications in FY 2020, By Percentile

This is a line graph whose x-axis is percentiles from one to fifty in increments of one. The y-axis is the number of applications or awards from zero to sixty in increments of ten. There are two shaded areas, one showing the number of applications and one showing the number of awards at that percentile. These areas demonstrate that nearly all applications that scored at or below the payline (the sixteenth percentile) received funding in fiscal year 2020. The fraction of applications that are funded tapers off at increasing percentiles, with no applications funded at a percentile of 42 or higher.

Figure 2: NIDDK Competing R01 Application Funding Curves by Percentiles for FY 2011-2020

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 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.

Table 1: NIDDK Investigator-Initiated R01 Paylines

Table 1 details the NIDDK payline thresholds by fiscal year. The columns from left to right are the fiscal year, general payline, grants over $500,000 in direct costs payline, the new investigator payline, the Early Stage Investigator (ESI) payline, and the ESI first competitive grant renewal payline. The rows are the Fiscal Years from 2011 and 2020 and contain the payline values for the columns described above.

Figure 3: Number of Competing NIDDK R01 Applications (Including Resubmissions) Received for Funding Consideration in FYs 1997-2020

This is a stacked bar chart whose x-axis shows fiscal years between 1997 and 2020 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 renewals. Total applications received have increased from about 1600 competing applications in 1997 to about 2800 applications in 2020. 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 2020 competing application numbers averaged about 2700. In 1997 new applications made up about two-thirds of all applications and renewal applications comprised the remaining third of applications. From 1997 to 2020, the portion of competing applications received that were renewal applications have steadily declined. The fraction of new applications increased to about 75 percent from 2000 through 2010. Between 2015 and 2020, new applications increased 7 percent from 82 percent in 2015 to 89 percent in 2020. The percentage of

renewal applications steadily decreased from 18 percent competing renewals in 2015 to 11 percent competing renewals in 2020.

Figure 4: Number of Competing NIDDK R01 Applications Received for Funding Consideration in FYs 2011-2020: New Versus Renewal Applications

This is a line chart whose x-axis shows fiscal years between 2011 and 2020 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) The number of new R01 applications rose through this ten-year period from about 1800 in 2011 to 2500 in 2020; 2) The number of renewal R01 applications received each year declined during these ten years. Renewal applications were about 550 in 2011 and have decreased steadily through 2020 to 313 renewal R01 applications.

Figure 5: Number of NIDDK R01/ R37 Grants (Competing and Non-Competing) Funded in FYs 1997-2020

This is a stacked bar chart whose x-axis shows fiscal years between 1997 and 2020 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 in increments of 500. 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 2017. In 2018 through 2020, the number of awards increases slightly each year and in 2020 the number of R01 awards is almost 2200. The stacked bars and subdivided into portions that represent non-competing awards, new competing awards, and renewal competing awards. Non-competing awards roughly comprised about 75 percent of R01 awards each year, with numbers increasing from about 1100 noncompeting awards in 1997 to about 1700 from 2004 through 2012. Numbers of noncompeting awards gradually decreased to about 1500 in 2014 through 2018 but rose to about 1600 in 2020. In 1997, the competing awards were evenly split between new and renewal awards. Over the last 22 years, the proportion of new competing awards is increasing, while renewal awards are decreasing.

Figure 6: Total NIDDK R01/R37 Expenditures (Includes Direct and Facilities and Administrative Costs) (Competing and Non-Competing) in FYS 1997-2020

This is a line chart whose x-axis shows fiscal years between 1997 and 2020 in increments of one year. The y-axis shows total awarded dollars from zero to twelve hundred million dollars in increments of two 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 one billion dollars in fiscal year 2020.

Figure 7: Median NIDDK R01/R37 Award Total Costs (Includes Direct and Facilities and Administrative Costs) (Competing and Non-Competing) in FYs 1997-2020

This is a line chart whose x-axis shows fiscal years between 1997 and 2020 in increments of one year. The y-axis displays dollar amounts ranging from zero to five 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 forty thousand dollars in 2020.

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 2010 and ending with 2020 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: RPGs, SBIR/STTR, Research Centers, Research Careers, Other Research, Training, and Contracts/IAAs. In general, most categories represent the same proportion of the budget from year to year. The RPG budget is over seventy percent of the NIDDK extramural budget.

Figure 8A: NIDDK Research Project Grants Funded in FYs 2010-2020 (Competing and Non-Competing), by Activity Code

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 2010 and ending with 2020 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, R21, R37, P01, U01, Other R (includes DP), and Other U. In general, most categories represent the same proportion of the budget from year to year.   Starting in 2015, the R01 awards represent a larger proportion of RPG awards, increasing from 70 percent in 2015 to 81 percent 2020. During these same years the fraction of R37, P01, and U01 awards decreased somewhat, with U01s showing a more significant decrease of 4% from 2019 to 2020.

Figure 9: Maintaining a Stable Pool of NIDDK Investigators— Number of Investigators Supported by at Least One R01 or R37 in FYs 2010-2020

This is a vertical stacked bar chart whose x-axis displays fiscal years from 2010 to 2020 in increments of one year. The y-axis displays numbers of investigators from zero to two thousand five 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 over time. About one thousand nine hundred sixty R01 and R37 investigators were supported by NIDDK from 2010 through 2012, then the number of investigators declined to about one thousand eight hundred between fiscal years 2013-2015. Since 2016, the total number of PIs has steadily increased to approximately twenty-two hundred in 2020. Established investigators comprise over 90 percent of all NIDDK R01 or R37 funded investigators across all years and the number of new investigators has averaged about 7 percent.

Figure 10: Maintaining a Stable Pool of NIDDK Investigators— Number of Investigators Supported by at Least One R01/R37 and Growth of Multiple PI (MPI) Awards in FYs 2011-2020

This is a vertical bar chart whose x-axis shows fiscal years between 2011 and 2020 in increments of one year. The y-axis displays numbers of PIs or awards 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 2011 through 2018, there were more R01 awards than unique investigators supported by NIDDK by R01 or R37 awards, as some investigators have multiple R01 awards. The number of R01 or R37 awards declined from about two thousand five hundred awards to just under two thousand awards and the number of investigators also declined from about one thousand nine hundred to one thousand eight hundred from 2011 through 2015.   Since 2015, there has been an increase in the number of investigators and R01 awards. In 2020, there were approximately two thousand two hundred

investigators and two thousand three hundred R01 awards. The percentage of MPI awards has risen steadily over the last ten years from six percent in 2011 to twenty two percent in 2020.

Figure 11: Preserving a Stable Pool of New Investigators—Number of NIDDK ESI R01 Applications and Number of Unique ESIs Applying and Awarded in FYs 2010-2020

This is a vertical bar chart whose x-axis shows fiscal years between 2010 (when the ESI data collection began) and 2020 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. The success rate of ESI applications is displayed in numerical form over the ESI R01 award bar. The number of ESI applications ranged between about three hundred to nearly four hundred during these years and the number of unique ESIs ranged from about two hundred fifty to three hundred forty. The number of ESIs applying is lower than the number of ESI applications, as some ESIs submit multiple applications. The number of ESI awards each year ranged between fifty to eighty. Over the last eleven years, the success rate for ESI awards ranged from about 20 percent to nearly 30 percent.

Figure 12: Preserving a Stable Pool of New Investigators—Percent of NIDDK New Competing R01 Applications Submitted and Awards Received by EISs Relative to all NIDDK R01 Applications Submitted and Awarded in FYs 2010-2020

This is a vertical bar chart whose x-axis shows fiscal years between 2010 and 2020 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 shows NIDDK ESI R01 applications as a percentage of all new R01 applications received by NIDDK and the other bar shows NIDDK ESI R01 awards as a percentage of all new NIDDK R01 awards in that year. In general, there has been a decline in the percent of new R01 applications submitted by ESIs with about 18 percent submitted in fiscal year 2010 to about 14 percent in fiscal year 2020. The average percent of R01 awards to ESIs between 2011 and 2018 was twenty three percent. In 2019 and 2020, the average percent of R01 awards to ESIs was eighteen percent.

Figure 13: Median and Mean Ages of NIDDK R01/R37 Investigator in FYs 2011-2020

This is a line chart whose x-axis shows fiscal years between 2011 and 2020 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 fifty-two years in fiscal year 2011 to just over fifty-three years in fiscal year 2020. The lower line shows the median age of investigators. The median age of investigators in fiscal years 2011 and 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 2020.

Figure 14: Support Pivotal Clinical Studies and Trials—NIDDK Human Subjects (HS+) Research Funding as a Proportion of all Extramural Research Funding in FYs 2011-2020

This is a vertical bar chart whose x-axis shows fiscal years between 2011 and 2020 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 through R01 and R37 awards. The percentage of NIDDK extramural budget supporting human subjects research for all NIDDK extramural research awards has increased from thirty three percent in fiscal year 2011 to

about forty percent in fiscal year 2020. The percentage of the NIDDK extramural budget supporting human subjects research through R01 and R37 awards increased from twenty nine percent in 2011 to thirty five percent in fiscal years 2016 and has remained at about thirty six percent through 2020.

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 2011 to 2020 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, 2) T awards, and 3) F awards. K awards accounted for approximately five percent of extramural funding between fiscal years 2011 and 2016. From fiscal years 2017 to 2020, extramural funding for K awards averaged four and a half percent. T awards averaged about 3 percent of extramural funding from fiscal year 2011 through 2020. In fiscal year 2020, extramural funding for T awards was below the average at 2.6 percent. Between fiscal year 2011 and 2020, F award spending averaged 0.85 percent of extramural funding.

Figure 15B: Numbers of NIDDK Fellowship (F), Career Development (K), and Training (T) Awards by Fiscal Year in FYs 2011-2020

This is a line chart whose x-axis displays fiscal years from 2011 to 2020 in one-year increments. The y-axis shows number of awards from zero to six hundred in increments of two hundred. There are three lines on the chart, which display (from top to bottom): 1) K awards, 2) F awards, and 3) T awards. The K awards between 2011 and 2015 averaged approximately five hundred. In 2016 through 2020 the average number of K awards was four hundred sixty. Fiscal year 2020 saw a slight increase of nearly 30 awards. F awards held steady at about two hundred forty in fiscal years 2011 through 2015 then increased to about three hundred awards in fiscal years 2016 through 2020. In 2011 and 2012, the number of T awards was about two hundred fifty then dropped to about two hundred ten in fiscal years 2013 through 2019, with the exception of a surge to about 250 T awards in fiscal year 2017. In 2020, there were 195 T awards.

Figure 15C: Number of NIDDK Career Development (K) Awards by Activity Code in FYs 2011-2020

This is a line chart whose x-axis displays fiscal years from 2011 through 2020 in increments of one year. The y-axis displays number 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) K01, 2) K23, 3) K08, 4) K24, and 5) K99. For the K01 awards, this line starts at about one hundred fifty in fiscal years 2011 and 2012. In 2013, it starts to increase and peaks at about two hundred awards in 2015, then declines to an average of one hundred sixty-one awards in fiscal years 2016 through 2019, with a slight increase to 169 awards in 2020. For the K23 awards this line remains generally stable at about one hundred twenty-four awards from 2011 through 2018. K23 awards increased to 140 awards in 2019 and 158 awards in 2020.   The K08 line starts at around one hundred sixty awards in fiscal years 2011 through 2013 and then declines each year to about one hundred fifteen in 2020. The K24 line starts at forty-three awards in 2011 and then gradually declines to sixteen awards in 2020. The K99 line remains generally stable at just under twenty awards throughout this period, with small variability from year to year.

Figure 15D: Number of NIDDK Career Development (K) Applications by Activity Code in FYs 2011-2020

This is a line chart whose x-axis displays fiscal years from 2011 through 2020 in increments of one year. The y-axis displays number of competing applications from zero to one hundred seventy-five in increments of twenty-five. There are five lines (from top to bottom) 1) K01, 2) K23, 3) K08, 4) K99, and 5) K24. The K01 line averaged about one hundred twenty applications each year from fiscal

years 2011 through 2017, then rose to just over one hundred fifty K01 applications in fiscal years 2018 and 2019. It declines to about one hundred thirty in 2020. The K23 line averaged about seventy-five applications from 2011 to 2017. There is a sharp increase in 2018 to about one hundred ten applications and then a gradual decline to ninety-two applications in 2020.   The K08 line remains stable with minor fluctuations throughout this period with an average of about 65 applications a year. The K99 line starts at fifty-three applications in 2011 and rises to a peak of seventy-one applications in 2013. There is a decline to thirty-four applications in 2015 and then a gradual rise to another peak of 71 applications in 2019. In 2020 they again decreased to 53 applications. The K24 line is stable at around twenty applications in fiscal years 2011 and 2012, dropped to about fifteen applications in fiscal years 2013 through 2018.   NIDDK stopped accepting K24 applications in 2019 so no additional data are available.

Figure 15E: Number of NIDDK Training (T32) Award Slots by Fiscal Year in FYs 2010-2019

This is a vertical bar chart whose x-axis displays fiscal years from 2010 to 2019 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 2010 to 2012 the number of T32 trainee slots remained stable at about nine hundred per year. Since 2013, the number of slots, on average, has declined to about seven hundred fifty in 2019.