

Career Development Awards

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Career Development Awards

NIH has supported a range of career development awards, intended “for investigators at earlier phases of their research career to enhance skills development and provide time for research and training activities in the biomedical, behavioral, or clinical sciences.

These awards typically provide three to five years of salary, mentored research support, and protected time under the guidance of an experienced mentor.”

These awards have been funding through K mechanisms (<https://grants.nih.gov/funding/funding-categories/research-training-and-career-development/individual-career> (<https://grants.nih.gov/funding/funding-categories/research-training-and-career-development/individual-career>))

This report is focused on 3 mechanisms:

K01: The purpose of this program is to provide support and protected time for an intensive, supervised career development experience in the biomedical, behavioral, or clinical sciences leading to research independence. Some NIH Institutes use the K01 for individuals who propose to train in a new field or have had a hiatus in their research career.

K08: The purpose of this program is to prepare clinically trained individuals for careers that have a significant impact on the health-related research needs of the Nation. This program provides support and protected time for an intensive, supervised research career development experience in the fields of biomedical, behavioral, or clinical research, including translational research.

K23: The purpose of this program is to provide support for the career development of investigators who have made a commitment to focus their research endeavors on patient-oriented research. This mechanism provides support for a 3 year minimum up to 5 year period of supervised study and research for clinically trained professionals who have the potential to develop into productive, clinical investigators.

Transition to R01 and other funding

An obvious metric for judging the success of the career development programs is the success of awardees in obtaining R01 grants or other independent funding. This will occur over a period of years after the initiation of the Career Development Award.

Cohort in this report

Information for all new K01, K08, and K23 awards from fiscal years 2010 to 2020 were downloaded from NIH Reporter.

There were:

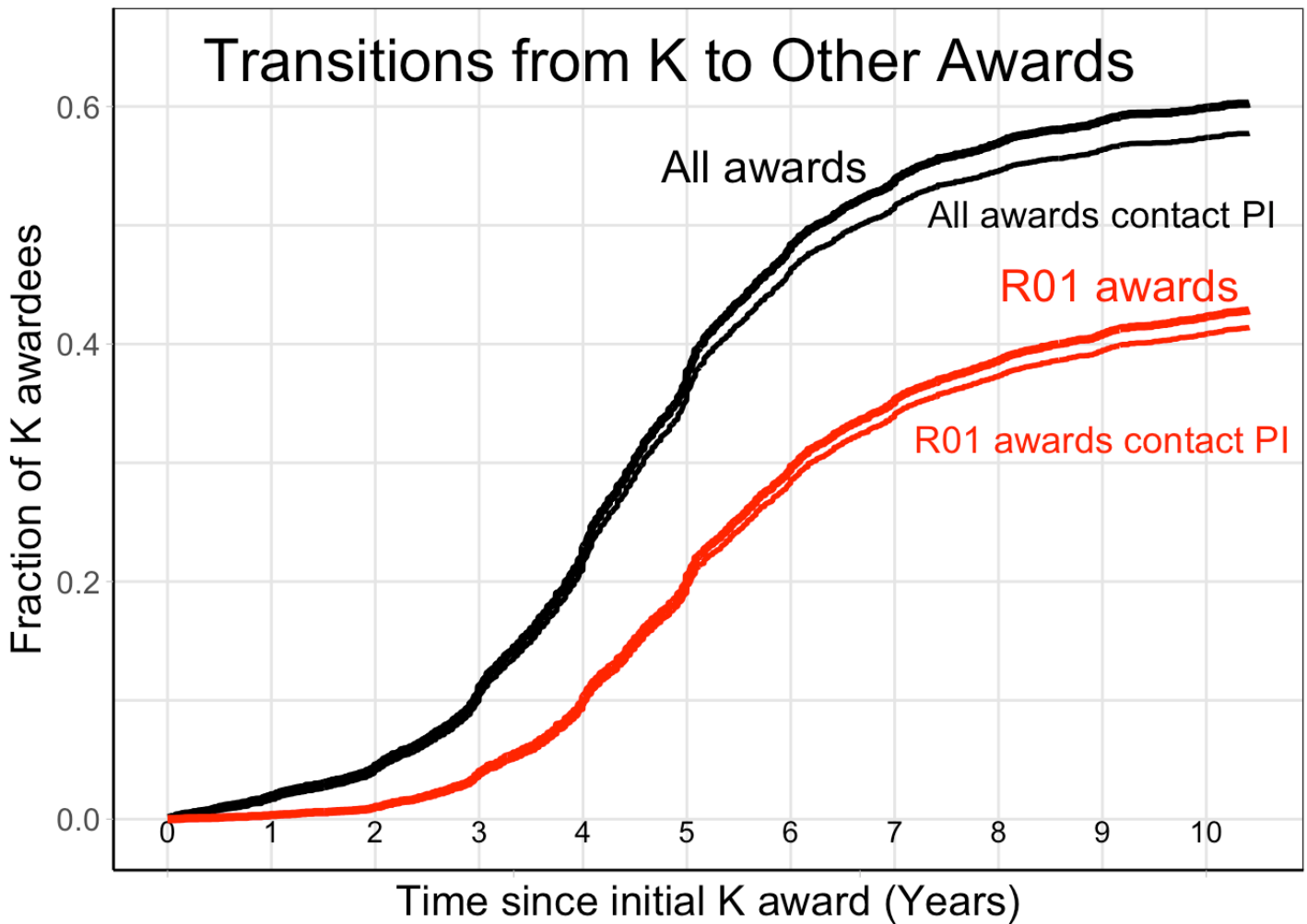
2175 K01 awardees.

2006 K08 awardees.

2399 K23 awardees.

Results

Subsequent grants to principal investigators of K01, K08, and K23 awards were tracked (though ID numbers in NIH Reporter) through subsequent years.



Overall, the probability of transitioning to another substantial award was 58%.

The probability of transitioning to an R01 award was 42%.

The median time for receiving the first award of any type (for those who received an award) was 4.5 years.

The median time for received the first R01 award (for those who received an R01 award) was 5.1 years.

Clinical Trial Awards

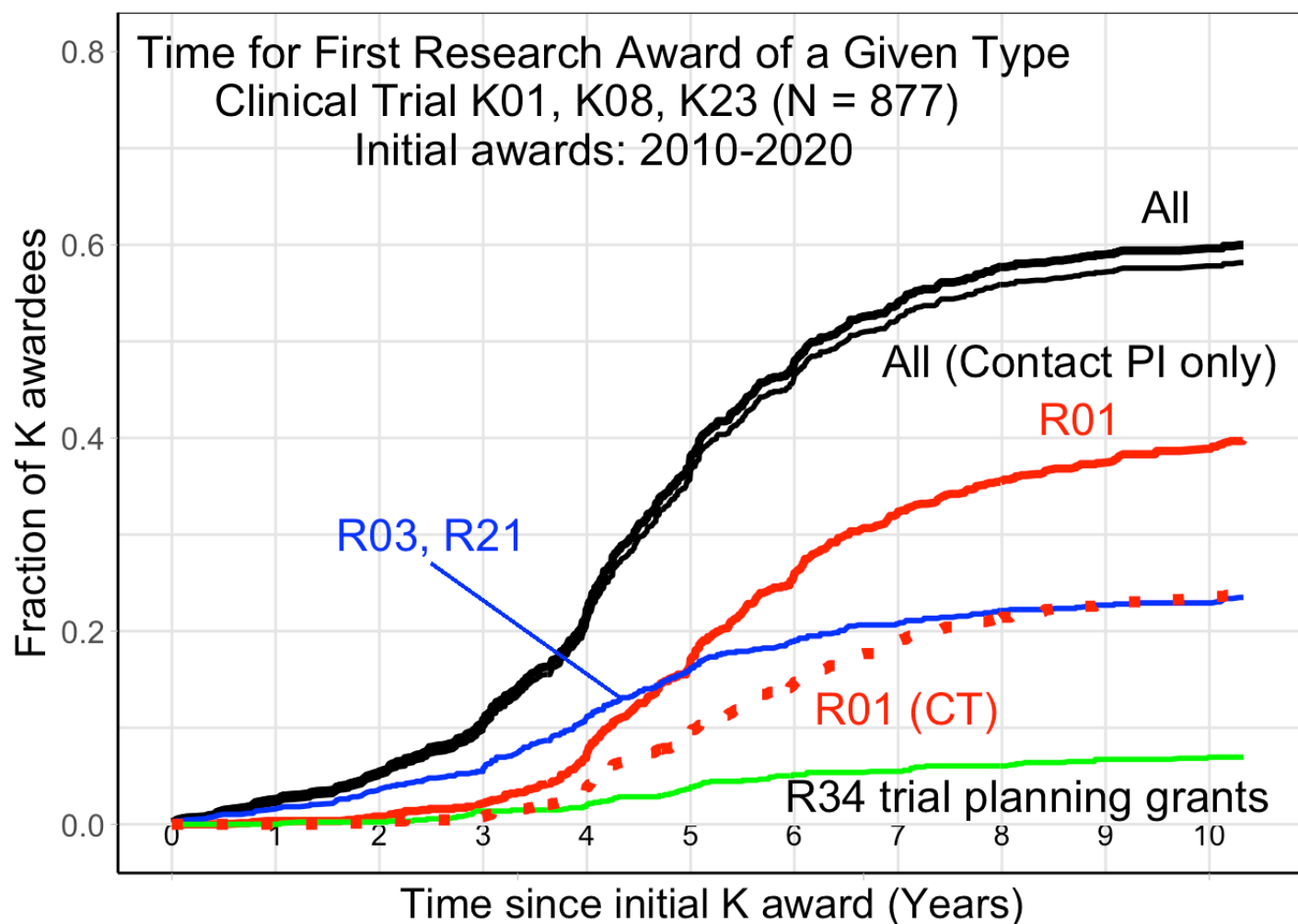
Awards could be classified as either “Clinical Trial” or “Non-clinical Trial” depending on whether the K award core grant number was associated with a clinical trial in data from NIH Exporter

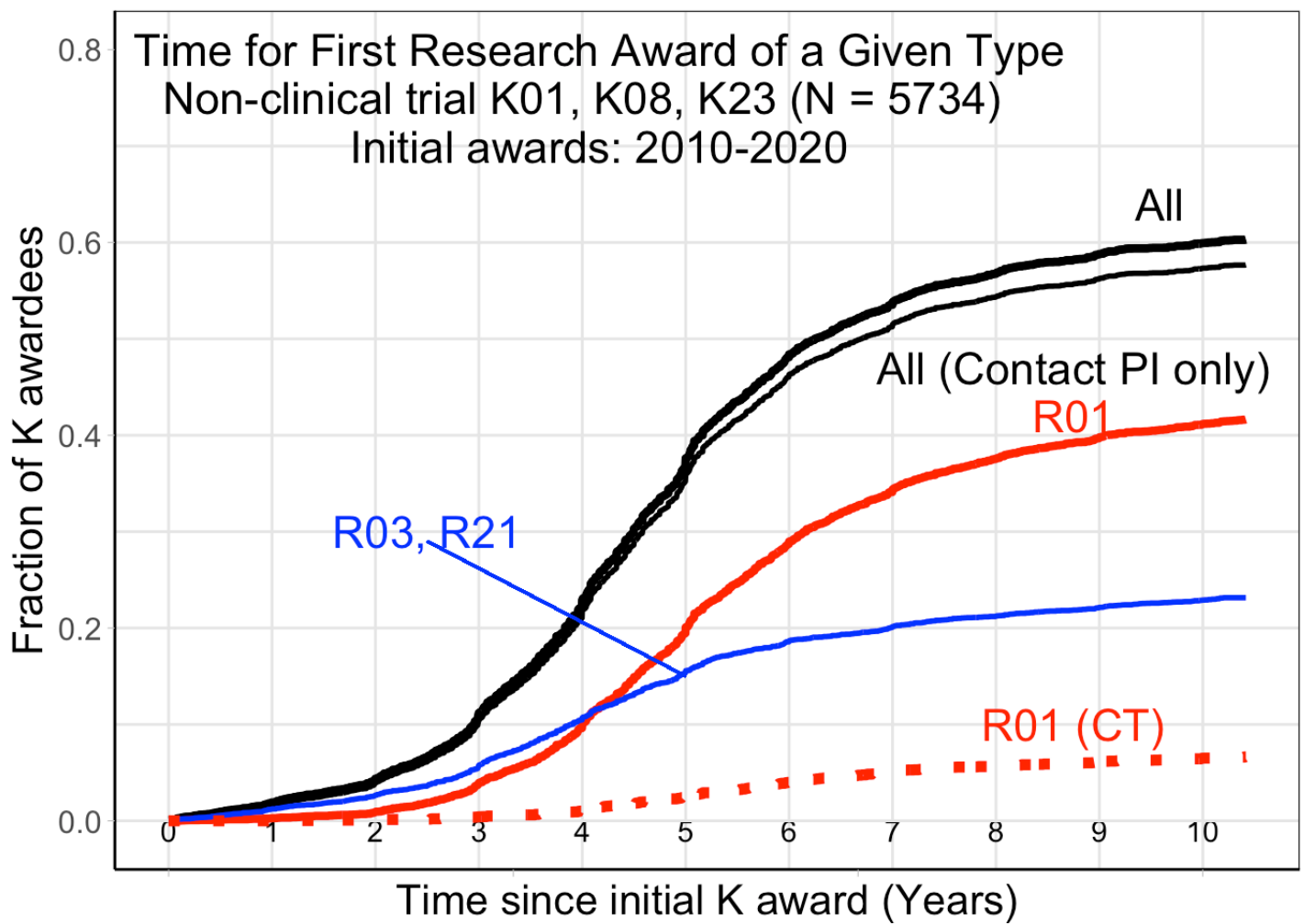
(<https://reporter.nih.gov/exporter/clinicalstudies> (<https://reporter.nih.gov/exporter/clinicalstudies>))

There were 877 K awards associated with clinical trials and 5703 K awards that were not.

The details of the subsequent funding are shown in the graphs below.

Subsequent R01 grants are also classified as clinical trial or not based on the NIH Exporter data.

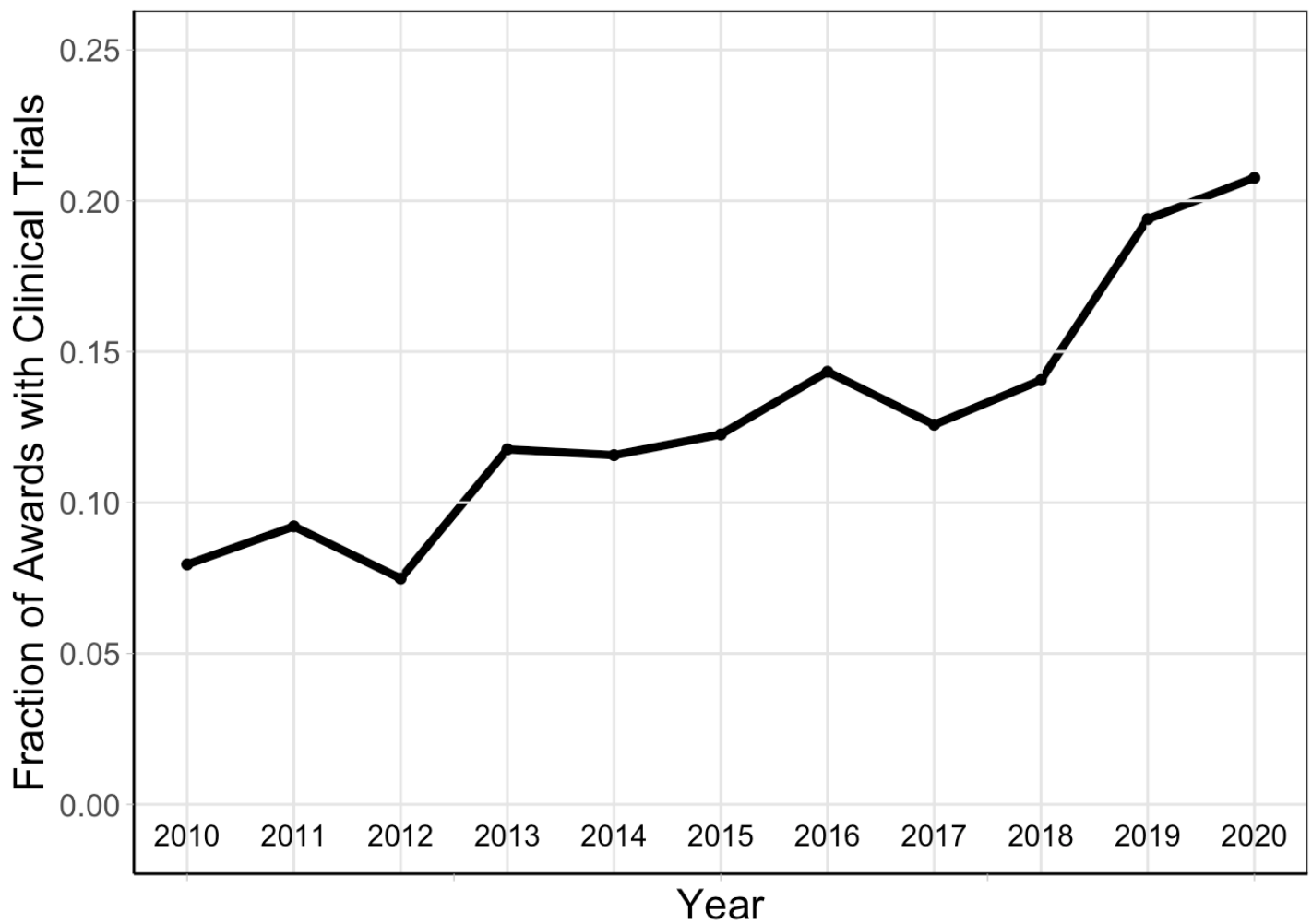




Two points from these results are that

1. There are not major differences in the rates of successful to R01 and other funding for clinical trial versus non-clinical trial K awards; and
2. K awards with clinical trials are more than 2-fold more likely to lead to R01s with clinical trials.

The fraction of these K awards with associated clinical trials has increased over time, reaching 20.8% in fiscal year 2020.



Clinical Trial Subjects

Of the 877 clinical trials associated with these K awards, 781 have a status of “COMPLETED” in ClinicalTrials.gov.

A word cloud based on the titles of these trials is shown below:

Gender of Career Development Award Principal Investigators

The genders of the principal investigators of these studies was examined. These genders were inferred using the R package “Gender”, based on association of first names and genders from Social Security data. For approximately 600 principal investigators for which insufficient information was available (due to non-Western or hyphenated names), genders were inferred from internet searches. It is estimated that the inferred genders are 98% or more accurate.

Overall, the percentage of females in this cohort was 53.3%

Interestingly, this varies between mechanisms with percentages of females as follows:

K01: 60.2%

K08: 38.2%

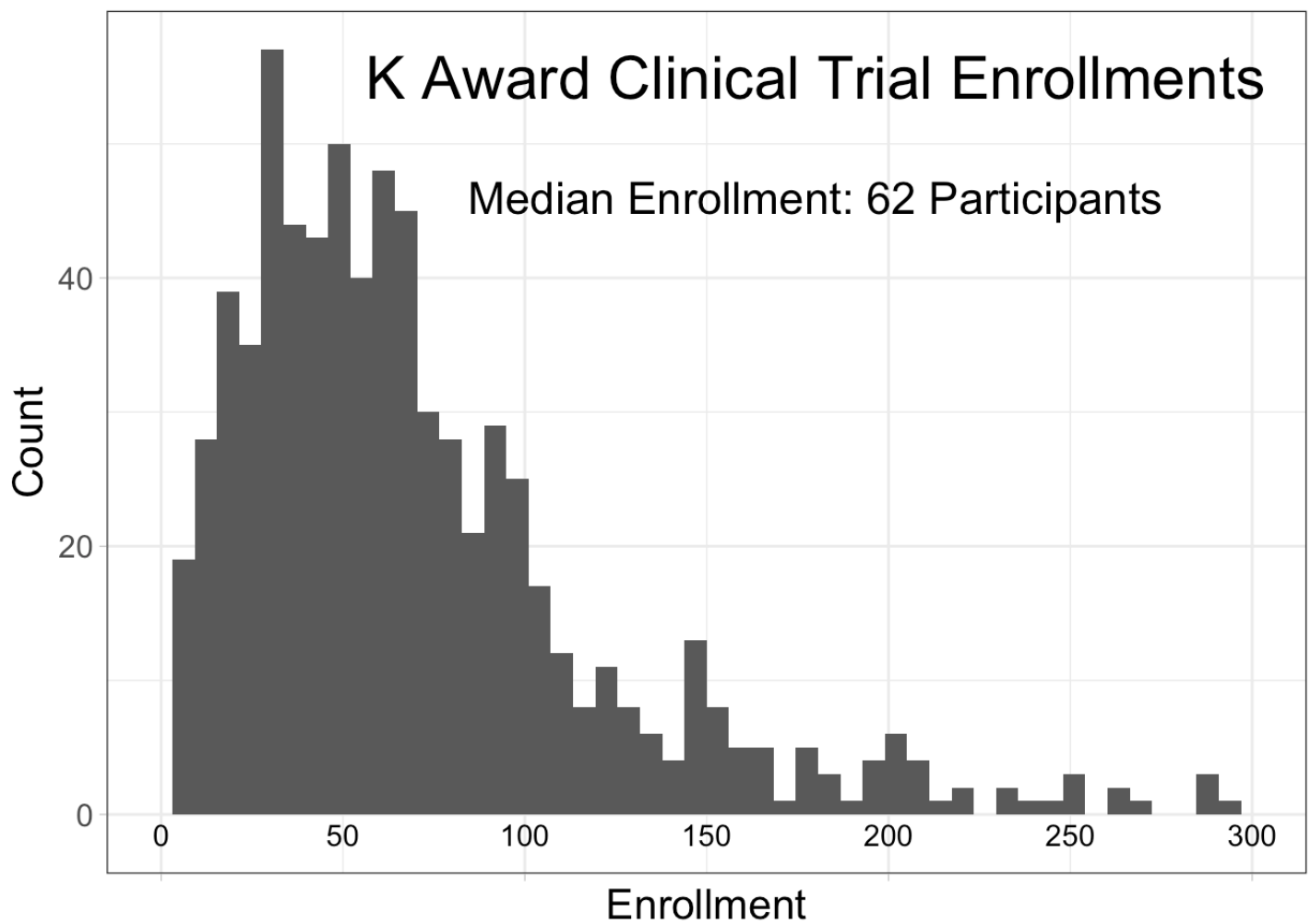
K23: 58.7%

Most strikingly, the percentage of female principal investigators in this cohort with K awards associated with clinical trials was 65.8%.

Regression analysis of the probability of transitioning to other funding or to R01 funding revealed trends with males transitioning at slightly higher rates than females, but these results were not statistically significant.

K Award Clinical Trial Enrollments

Data about clinical trial enrollments are available at The Clinical Trials Transformation Initiative (CTTI) database AACT (<https://aact.ctti-clinicaltrials.org/> (<https://aact.ctti-clinicaltrials.org/>)). For the 781 trials that were completed, the histogram of enrollments is shown below:



The median number of participants is 62. While these trials are generally relatively small (as would be expected given the likely low level of funding), these are large enough to provide meaningful results. Importantly, all of these trials would have to be approved by institutional review boards (IRBs) in order to be conducted.