

Mentored Career Development Application (K) Funding Rates by Race-Ethnicity FY2010-FY2023

Michael Lauer, National Institutes of Health (NIH) Office of the Director (OD)
Deepshikha Roychowdhury, NIH Office of Extramural Research (OER)

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Introduction

This is an analysis of funding rates for FY2010 to FY2023 mentored career development award (K) applicants according to the race-ethnicity of designated Principal Investigators (PIs).

Methods

Data Sources

We used data from frozen, official, NIH success rate files. We focus on applicants for F99-K00, K01, K08, K23, K25, and K99 direct budget authority awards.

We obtained data on the race and ethnicity of PIs from their entries into the eRA Commons Personal Profile. [As noted by NIH](#), PIs provide these data on a strictly voluntary basis, and these data are not used for making funding decisions. If individuals described themselves as Hispanic in the ethnicity field and not Black in the race field, then race-ethnicity was considered to be Hispanic; otherwise the individual's race-ethnicity was based on their entry in the race field. Race-ethnicity groups with small cell sizes are removed from the report.

Grant Outcome Metrics

As a reminder, [NIH publishes three main kinds](#) of grant outcome metrics, namely award rates, success rates, and funding rates. Award and success rates are *application-based* metrics, while funding rates are *person-based*.

The funding rate, as a person-based measure, is calculated as

$$F_{FY} = \frac{\sum_{j=1}^P a}{P} \quad (1)$$

where P is the number of *unique* persons (designated-PI applicants) who submitted at least one proposal in a given fiscal year and a is an indicator of whether person (designated-PI applicant) j

successfully obtained funding for at least one of those proposals (1 if yes, 0 if no). A data frame that calculates funding rate will have only *one* observation per person per year.

Throughout the report we refer for convenience to Principal Investigators (“PIs”) as applicants or awardees. In point of fact, applicants and awardees are institutions who in turn designate PIs; PIs are typically employees of the applicants and awardees.

Results and Findings

Tables 1 and 2 show characteristics according to race-ethnicity of scientists who were designated as a PI on at least one K application submitted in FY2011 (the year the Ginther paper was published) and in FY2023. Compared to white applicants, FY2023 Black applicants were more likely to submit a K01 application and less likely to submit K08 or K23 applications. The K01 mechanism is used by some IC’s to enhance workforce diversity. Black applicants were more likely to submit proposals including human subjects and less likely to submit proposals including animal models.

Funding Rates

Figure 1 shows the number of unique K applicants each fiscal year according to race-ethnicity. Figure 2 shows increasing numbers of unique Black K applicants and awardees, while Figure 3 shows corresponding values for Hispanic applicants and awardees. Figure 4 shows K funding rates according to race-ethnicity.

Of note, in FY2023 there were 177 Black applicants; of these 43 were K99 applicants and 26 were MOSAIC applicants. There were 79 Black awardees; of these 18 were K99 awardees and 13 were MOSAIC awardees. There were 291 Hispanic applicants; of these 122 were K99 applicants and 40 were MOSAIC applicants. There were 129 Hispanic awardees; of these 43 were K99 awardees and 23 were MOSAIC awardees.

Table 1: Characteristics according to race-ethnicity of scientists who were designated as a Principal Investigator on at least one K application in FY2011.

Characteristic		White	Asian	Unknown	Hispanic	Black
Total N (%)		1257 (53.3)	554 (23.5)	282 (12.0)	121 (5.1)	103 (4.4)
Female		587 (46.7)	227 (41.0)	108 (38.3)	68 (56.2)	66 (64.1)
Age (years)	Median (IQR)	36.0 (33.0 to 39.0)	36.0 (34.0 to 39.0)	36.0 (34.0 to 40.0)	37.0 (35.0 to 40.0)	37.0 (34.0 to 42.0)
Degree	MD	336 (26.7)	162 (29.2)	41 (14.5)	33 (27.3)	34 (33.0)
	MD-PhD	158 (12.6)	80 (14.4)	26 (9.2)	15 (12.4)	9 (8.7)
	Other	26 (2.1)	20 (3.6)	91 (32.3)	4 (3.3)	3 (2.9)
	PhD	737 (58.6)	292 (52.7)	124 (44.0)	69 (57.0)	57 (55.3)
Submitted a K01 application		215 (17.1)	83 (15.0)	51 (18.1)	34 (28.1)	44 (42.7)
Submitted a K08 application		244 (19.4)	102 (18.4)	41 (14.5)	21 (17.4)	6 (5.8)
Submitted a K23 application		341 (27.1)	126 (22.7)	46 (16.3)	31 (25.6)	37 (35.9)
Submitted a K25 application		37 (2.9)	19 (3.4)	18 (6.4)	7 (5.8)	1 (1.0)
Submitted a K99 application		424 (33.7)	225 (40.6)	126 (44.7)	28 (23.1)	16 (15.5)
Submitted a K animal research application		543 (43.2)	272 (49.1)	147 (52.1)	44 (36.4)	23 (22.3)
Submitted a K human research application		660 (52.5)	261 (47.1)	105 (37.2)	71 (58.7)	77 (74.8)

Table 2: Characteristics according to race-ethnicity of scientists who were designated as a Principal Investigator on at least one K application in FY2023.

Characteristic		White	Asian	Hispanic	Unknown	Black
Total N (%)		1773 (49.7)	984 (27.6)	290 (8.1)	258 (7.2)	177 (5.0)
Female		1018 (57.4)	479 (48.7)	144 (49.7)	61 (23.6)	120 (67.8)
Age (years)	Median (IQR)	36.0 (34.0 to 39.0)	36.0 (34.0 to 39.0)	36.0 (34.0 to 39.0)	36.0 (34.0 to 39.0)	38.0 (34.0 to 41.0)
Degree	MD	343 (19.3)	168 (17.1)	39 (13.4)	37 (14.3)	30 (16.9)
	MD-PhD	172 (9.7)	110 (11.2)	16 (5.5)	21 (8.1)	11 (6.2)
	Other	197 (11.1)	118 (12.0)	56 (19.3)	99 (38.4)	30 (16.9)
	PhD	1061 (59.8)	588 (59.8)	179 (61.7)	101 (39.1)	106 (59.9)
Submitted an F99-K00 application		40 (2.3)	30 (3.0)	24 (8.3)	9 (3.5)	10 (5.6)
Submitted a K01 application		318 (17.9)	122 (12.4)	67 (23.1)	35 (13.6)	67 (37.9)
Submitted a K08 application		297 (16.8)	141 (14.3)	34 (11.7)	52 (20.2)	20 (11.3)
Submitted a K23 application		433 (24.4)	129 (13.1)	40 (13.8)	42 (16.3)	36 (20.3)
Submitted a K25 application		14 (0.8)	14 (1.4)	4 (1.4)	0 (0.0)	1 (0.6)
Submitted a K99 application		678 (38.2)	550 (55.9)	122 (42.1)	120 (46.5)	43 (24.3)
Submitted a K animal research application		559 (31.5)	454 (46.1)	135 (46.6)	113 (43.8)	42 (23.7)
Submitted a K human research application		1047 (59.1)	418 (42.5)	129 (44.5)	117 (45.3)	126 (71.2)

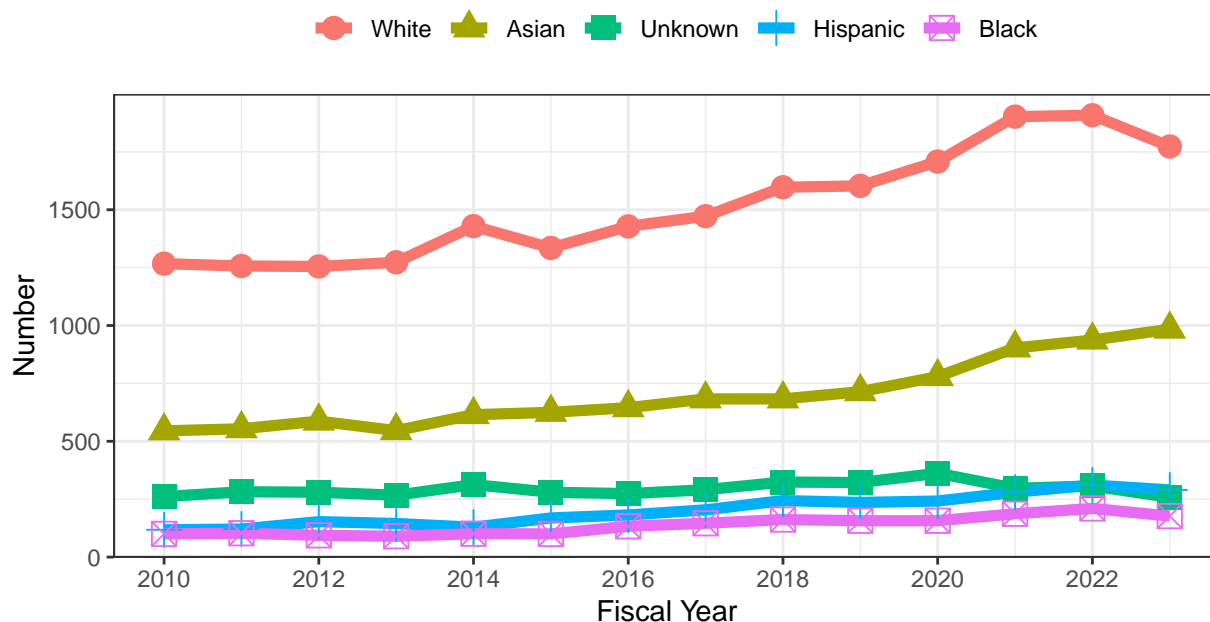


Figure 1: Number of K applicants according to race-ethnicity by fiscal year.

Mentored K Black Applicants and Awardees

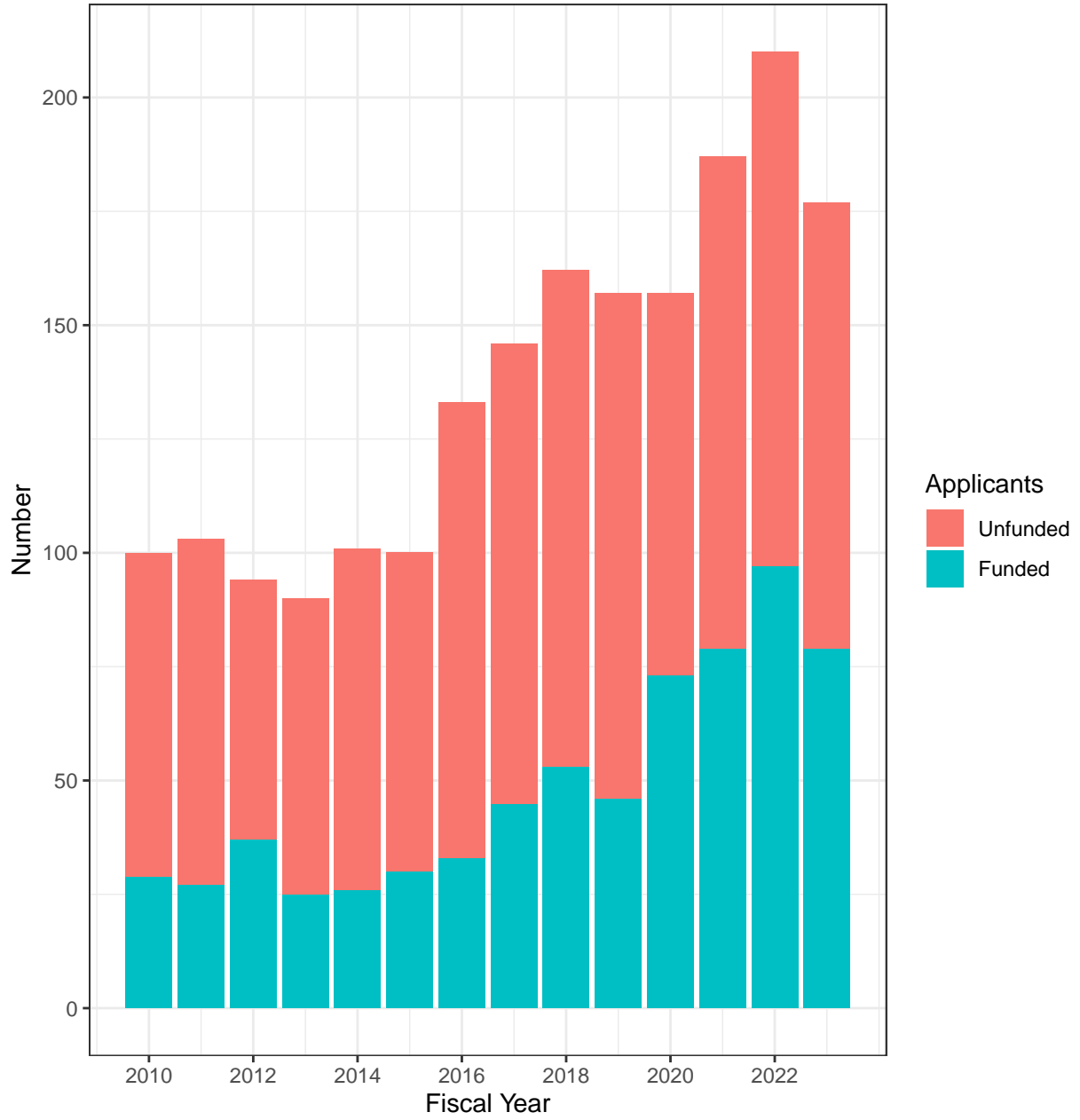


Figure 2: Number of unique mentored K Black applicants and awardees by fiscal year

Mentored K Hispanic Applicants and Awardees

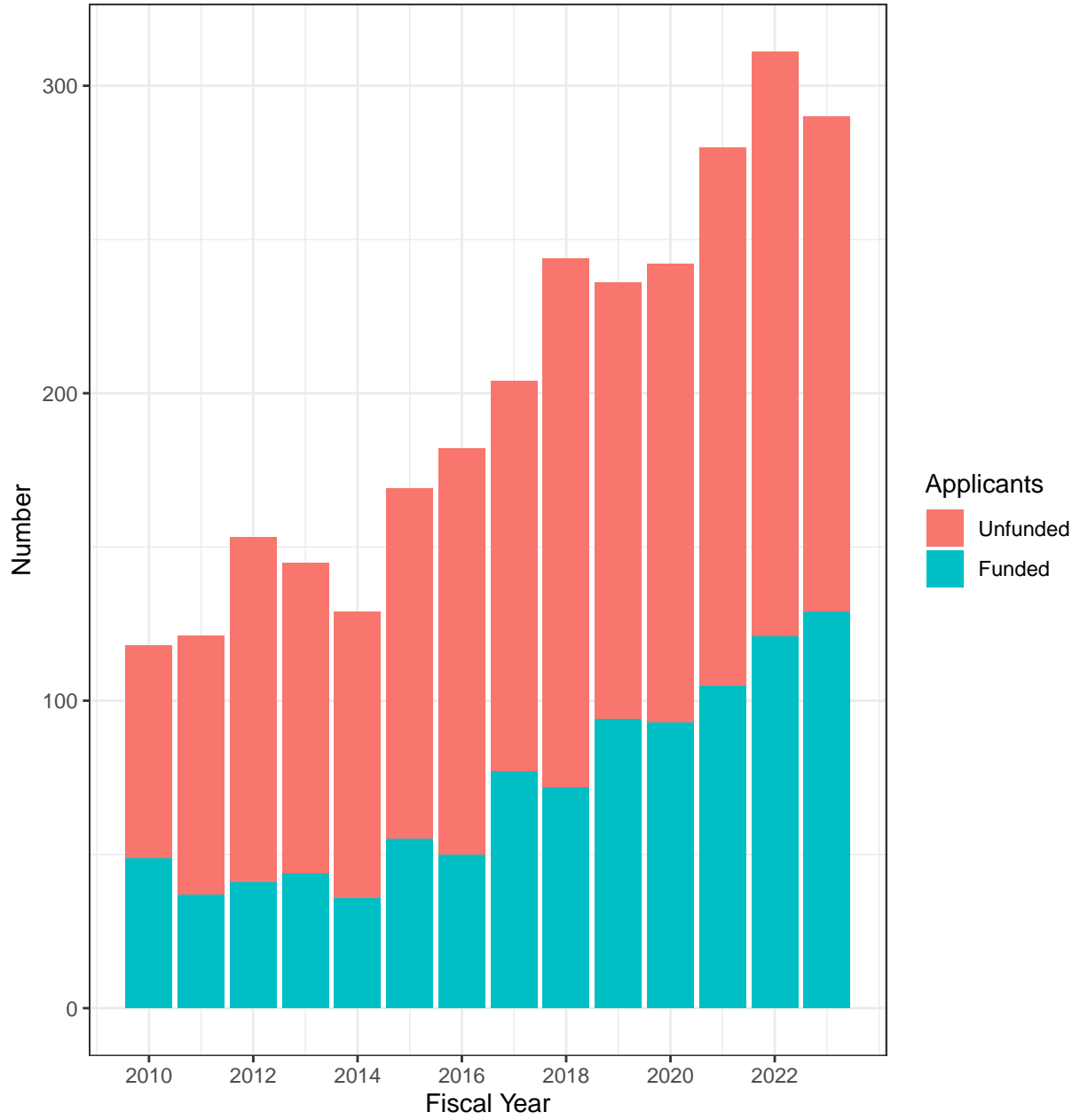


Figure 3: Number of unique mentored K Hispanic applicants and awardees by fiscal year

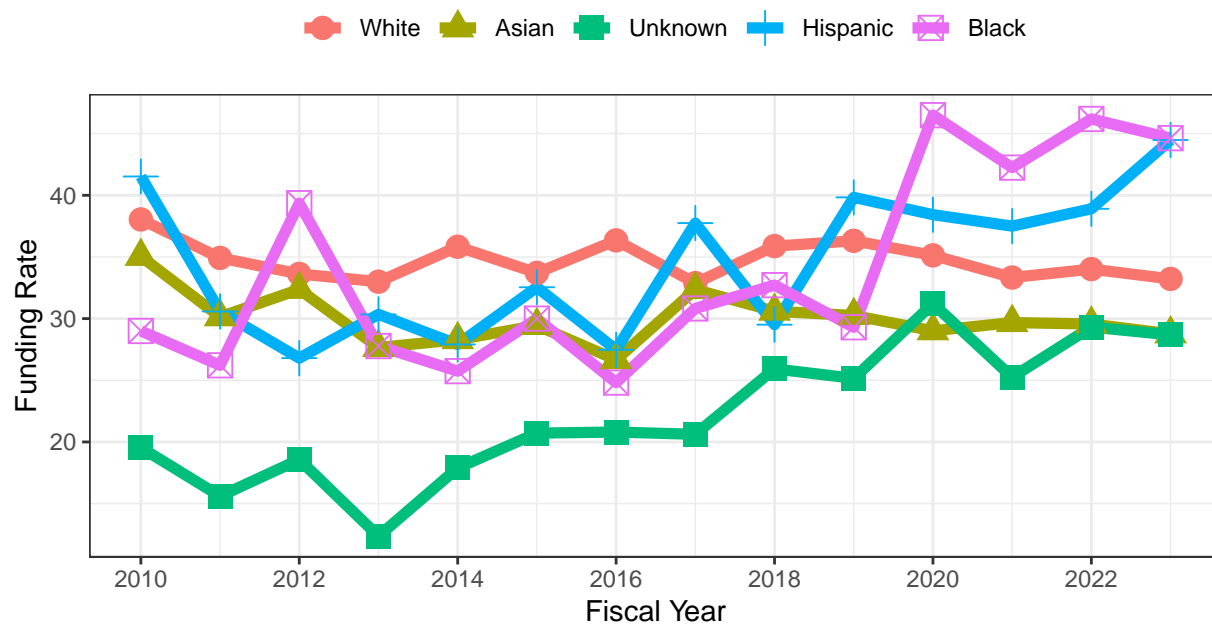


Figure 4: Funding rates for K applicants according to race-ethnicity by fiscal year.