An examination of radiological research funding by NIH between clinical radiologists and non-clinicians

Kyle Tegtmeyer MD, Mihir Khunte, Raj S Moily, Ajay Malhotra, MD

Yale University School of Medicine, Department of Radiology and Biomedical Imaging

Background

Radiology is an active field of research, comprised of projects within the domains of diagnostic radiology, interventional radiology, and radiation oncology, with greater than $500 million in NIH funding allocated to radiology projects in 2022. Prior studies have noted that grants are often awarded to male researchers within radiology, often with greater grant totals [1]. A study of grants awarded in 2015 notes that MD investigators tend to receive fewer grants with higher average funding per grant relative to PhD researchers [2]. Compared to research within other medical specialties, projects within radiology ranked 10th of 19 in total grant funding (in US Dollars) [3]. Clinician research is particularly difficult in highly paid specialties, such as radiology, given the NIH grant salary limit of $221,900 in 2024; few departments may be willing or able to fund the remainder of a competitive salary for clinician-scientists, leaving little financial incentive for clinicians to pursue NIH-funded research.

Purpose

We seek to characterize differences in funding and funding trends between clinician and non-clinician, to better characterize the scope of clinician-scientist funding in radiology.

Methods

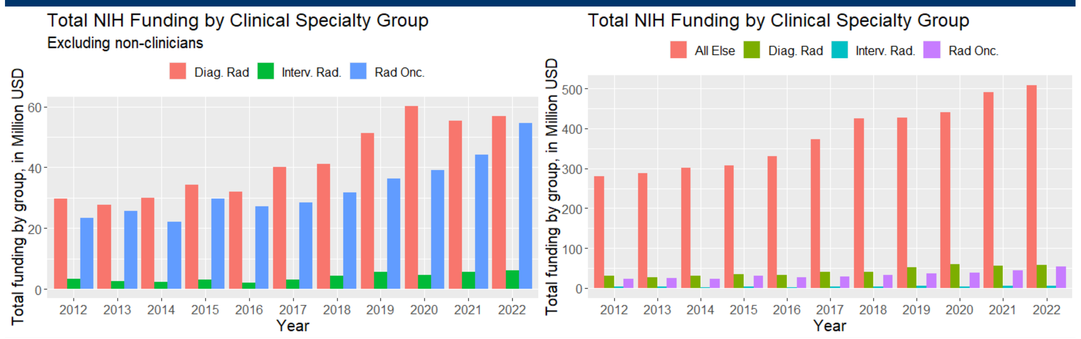
NIH funding data on radiology projects were obtained from the NIH Research Portfolio Online Reporting Tools Expenditure and Results (RePORTER) database for grants issued between January 1st 2012 and March 31st 2023, including only investigators whose institutional department is listed as “Radiation-Diagnostic/Oncology”. Clinician grants were determined by comparing RePORTER data to data from the Centers for Medicare and Medicaid Services (CMS) Medicare Physician & Other Practitioners database, including only physicians with a primary specialty of diagnostic radiology, interventional radiology, or radiation oncology. An additional check of physicians listed within the National Plan and Provider Enumeration System (NPPES) was performed to assure accuracy, using only taxonomy codes associated with diagnostic radiology, interventional radiology, and radiation oncology. Data analysis was performed using R 4.2.2. Institutional review board approval was not required for this study, as this study utilized only publicly available databases and included no personally identifiable health information.

Results

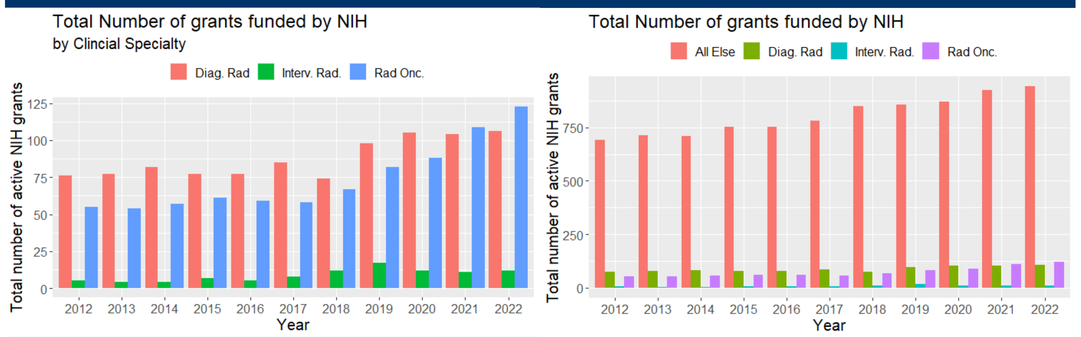
Gender Breakdown by Radiology Specialty

Specialty	Gender	Count	Proportion
Diagnostic Radiology	Male	128	77.58%
	Female	37	22.42%
Interventional Radiology	Male	89	67.42%
	Female	43	32.58%
Radiation Oncology	Male	16	88.89%
	Female	2	11.11%

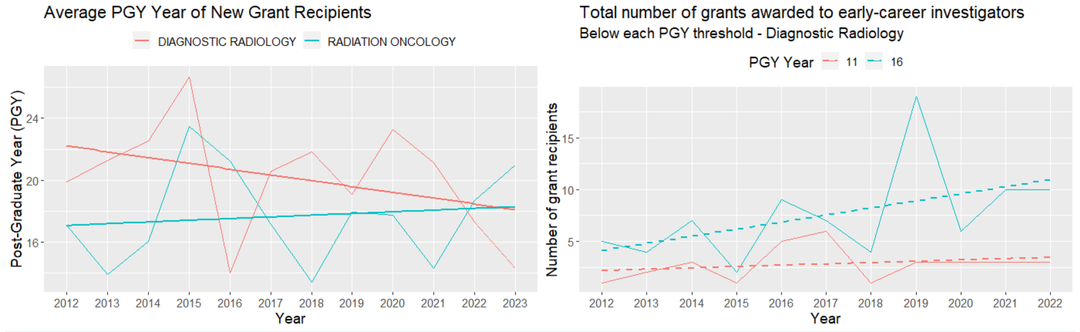
Total NIH funding by Radiology Specialty



Total Number of NIH grants awarded by Radiology Specialty



Early Career Investigators within radiology



Note: PGY = Post-graduate year. PGY-11 = approx. 5 years from fellowship graduation; PGY16 = approx. 10 years from fellowship graduation

Results

A total of 3644 unique radiology projects headed by a total of 1762 unique principal investigators were funded by the NIH within the study period. A total of 315 clinicians (17.88% of awardees), including 165 diagnostic radiologists, 18 interventional radiologists, and 132 radiation oncologists. While there is growth in number of diagnostic radiology and radiation oncology clinician investigators, they remain far outweighed by non-clinician investigators throughout the study period, both in terms of number of grants and total grant funding. Male clinician researchers far outnumbered females for all radiology subspecialties. A slight downward trend in average years from medical school graduation to initial grant award is seen among diagnostic radiology clinicians; this trend appears strongest among those 5-10 years from fellowship graduation (PGY-11 to 16).

Discussion

While there is an increasing number of early-mid career radiologists (particularly within diagnostic radiology) with NIH grant funding in recent years, clinicians remain far surpassed in funding by their non-clinician colleagues. Clinical radiologists may often provide a particularly valuable skillset and perspective in research, particularly with translational research projects. Clinician involvement is likely limited in large part by NIH salary caps from grant funding, limiting financial appeal of a research career for clinicians when clinical-only positions often pay significantly higher than the NIH salary cap. Many institutions lack the dedication or resources to fund clinicians to dedicate time to research, limiting clinician researchers to a select few institutions. Further work is needed to investigate factors that limit clinician involvement in NIH-funded research.

References

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Disclosure Information

The authors report no relevant financial disclosures.