

Pharmacists and National Institutes of Health R03 and R21 funding at United States Schools of Pharmacy

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Introduction/Purpose

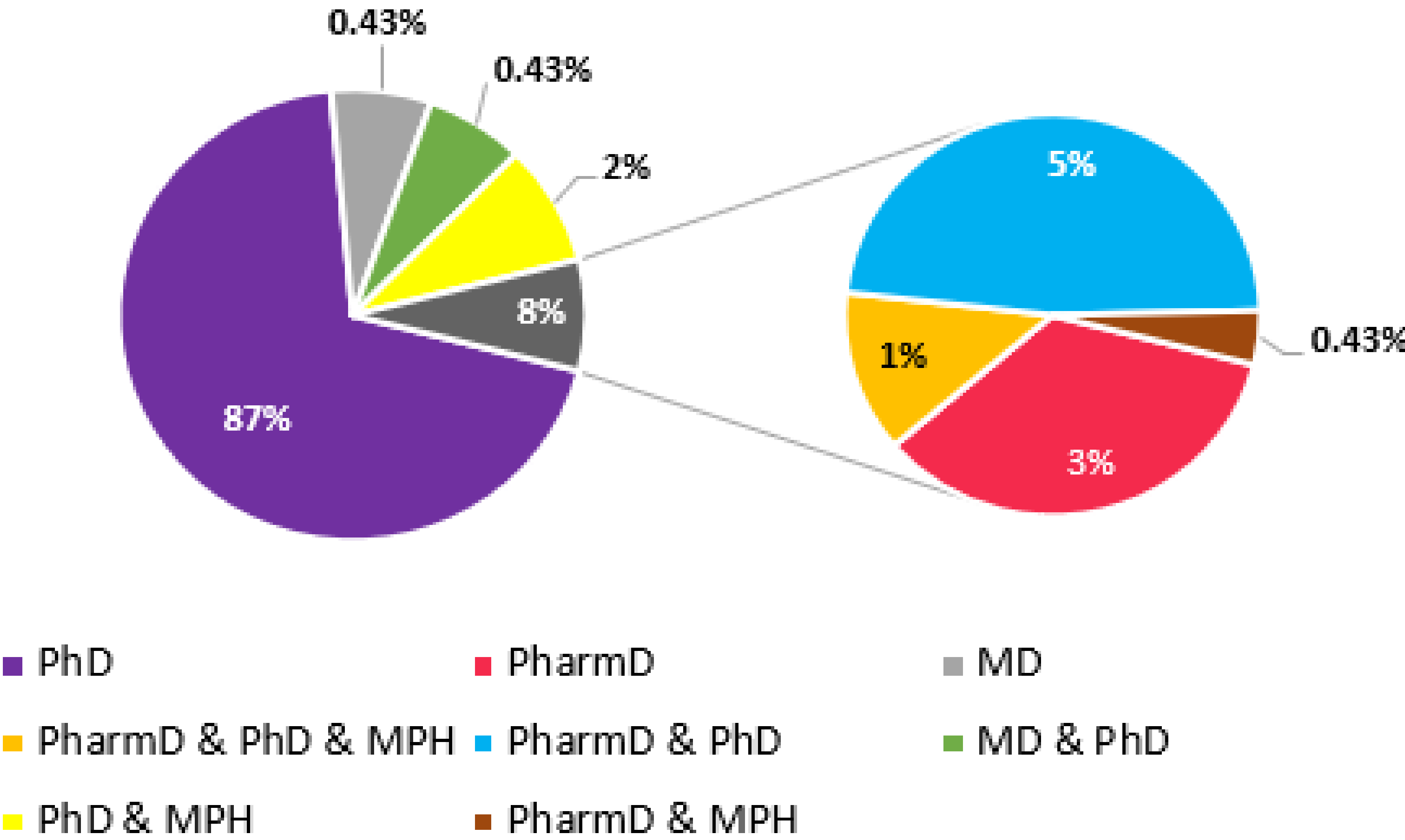
- ❖ The National Institutes of Health (NIH) provides research projects with limited resources (R03) and exploratory/developmental researches (R21) grants for small defined projects.¹
- ❖ Receiving an NIH R03 or R21 grant as the lead principal investigator (PI) is recognized by most United States (US) Schools of Pharmacy (SOP) as a major step towards independence and is viewed favorably during promotion and/or tenure review.
- ❖ The purpose of this study was to determine the frequency of pharmacists receiving NIH R03 or R21 funding as lead PIs within US SOP from 2015-2019.

Methods

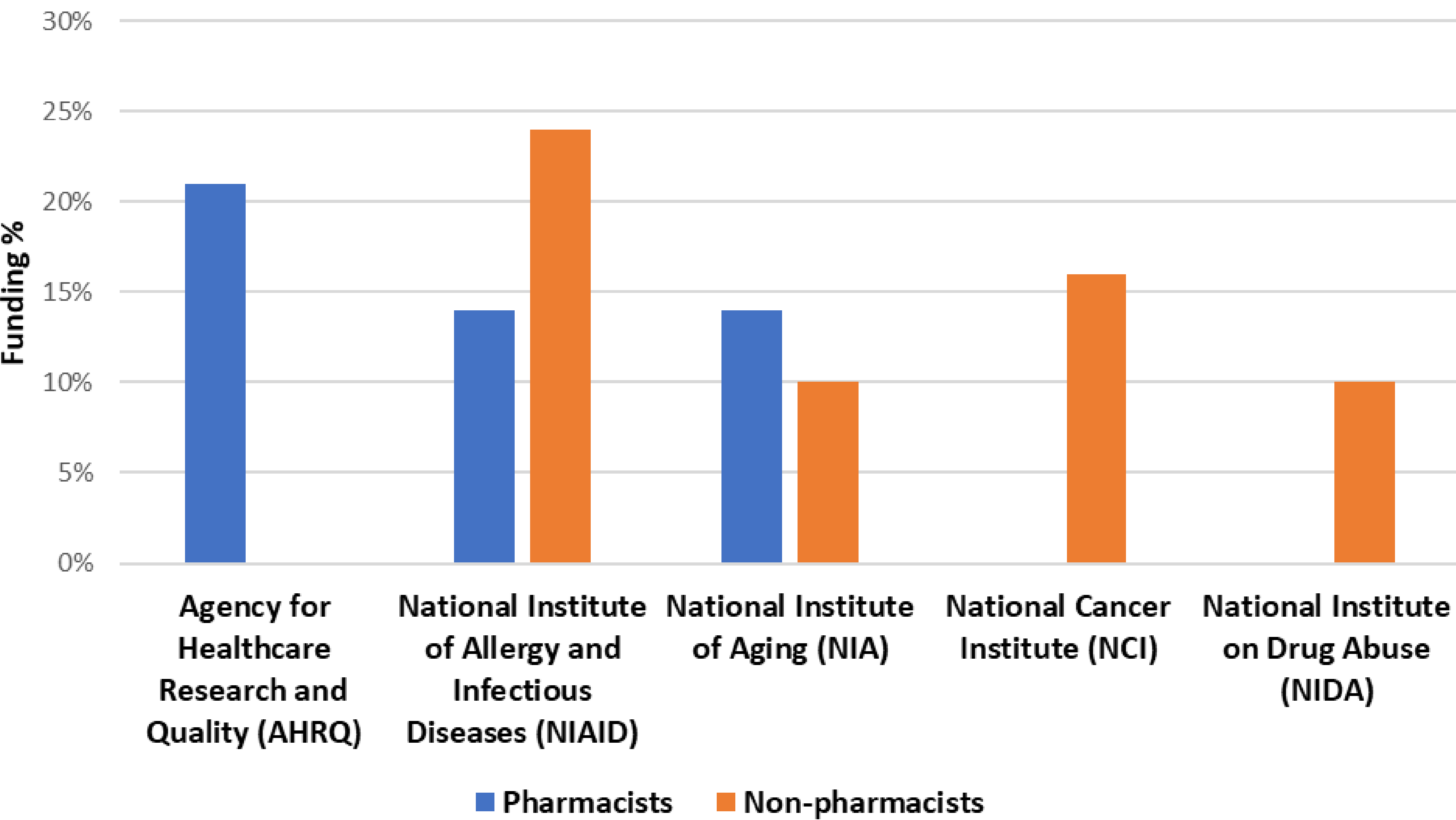
- ❖ The NIH Research Portfolio Online Reporting Tools Expenditures and Results (RePORTER) website was used to retrieve R03 and R21 grants awarded from all NIH institutes and centers to lead PIs affiliated with US SOP for fiscal years (FY) 2015-2019.
- ❖ The results of these searches included the grant title, names of the lead and other PIs, the institutional affiliation of the lead PI with associated geographic characteristics, the fiscal years funding was received, the amount of costs per fiscal year, and the institute or center that awarded the grant.
- ❖ Professional degrees obtained for the PIs included Doctor of Philosophy (PhD), Doctor of Medicine (MD), pharmacy (Bachelor of Science in Pharmacy or PharmD), and Master of Public Health (MPH). MD and pharmacy degrees obtained outside of the US were excluded.
- ❖ Multiple funding years for the same project and funding for equipment and diversity supplements were excluded to identify the total number of unique projects in their first year of funding.

Results

Unique Lead PIs By Degrees



Major NIH Funding Centers for FY 2015-2019



Conclusions

- ❖ Pharmacists are underrepresented as lead PIs for NIH funded R03 and R21 grants to US SOP. From 2015-2019, pharmacists represented 52% of faculty in US SOP but only 10% of new NIH funded R03 and R21 grants.
- ❖ The mean total cost for the first year of new awards was \$182,896 for pharmacists and \$185,868 for non-pharmacist PIs ($p=0.82$) for FY 2015-2019.
- ❖ The vast majority of NIH R03 and R21 grant recipients had at least a PhD degree and approximately three-fifths of funded pharmacists also had a PhD degree. Based on these results, pharmacy-related topics important to public health may be less likely to be funded, which may negatively affect patients' health.
- ❖ The NIH conference on PharmD Pathways to Biomedical Research in 2006 had noted a deficiency of opportunities and commitments to train, develop and support PharmD researchers.² To increase the number of eligible and qualified clinical pharmacist researchers, this conference recommended exposing students to research during their PharmD curriculum and postgraduate training, providing research writing experience, developing strong clinical practice skills and promoting participation in hypothesis-driven research.³
- ❖ US SOP may need to increase clinical and translational PhD training programs for pharmacists to increase pharmacist competitiveness for NIH funding.

References

1. Small and exploratory/developmental research grants SOP. National Institute of Allergy and Infectious Diseases. <https://www.niaid.nih.gov/research/small-and-exploratorydevelopmental-research-grants>. Accessed October 25, 2020.
2. Burton ME, Munger MA, Bednarczyk EM, et al. Update: The clinical pharmacist as principal investigator. *Pharmacotherapy*. 2010;30(12):485e-489e.
3. Parker RB, Ellingrod V, DiPiro JT, et al. Preparing clinical pharmacy scientists for careers in clinical/translational research: can we meet the challenge? *Pharmacotherapy*. 2013;33(12):e337-e346. doi: 10.1002/phar.1348.