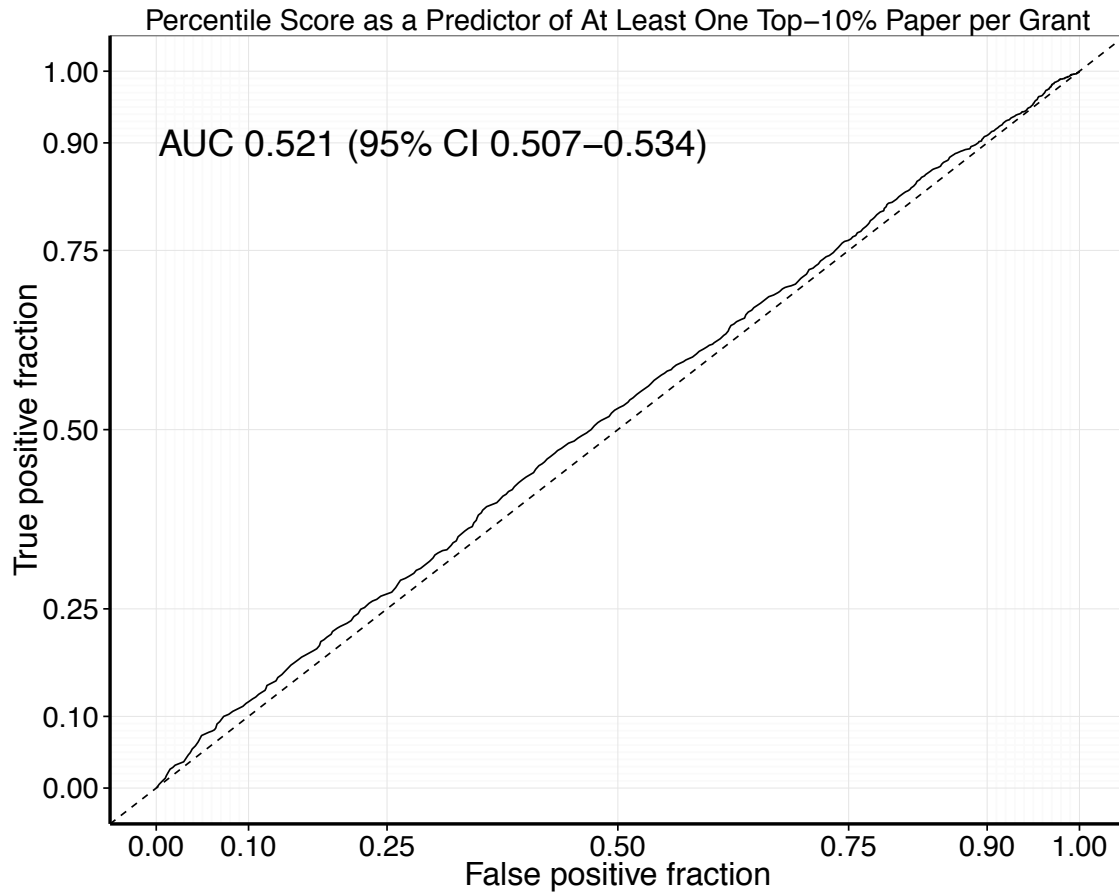Supplementary Material for:

Predicting Productivity Returns on Investment: Thirty Years of Peer Review, Grant Funding, and Publication of Highly Cited Papers at the National Heart, Lung, and Blood Institute
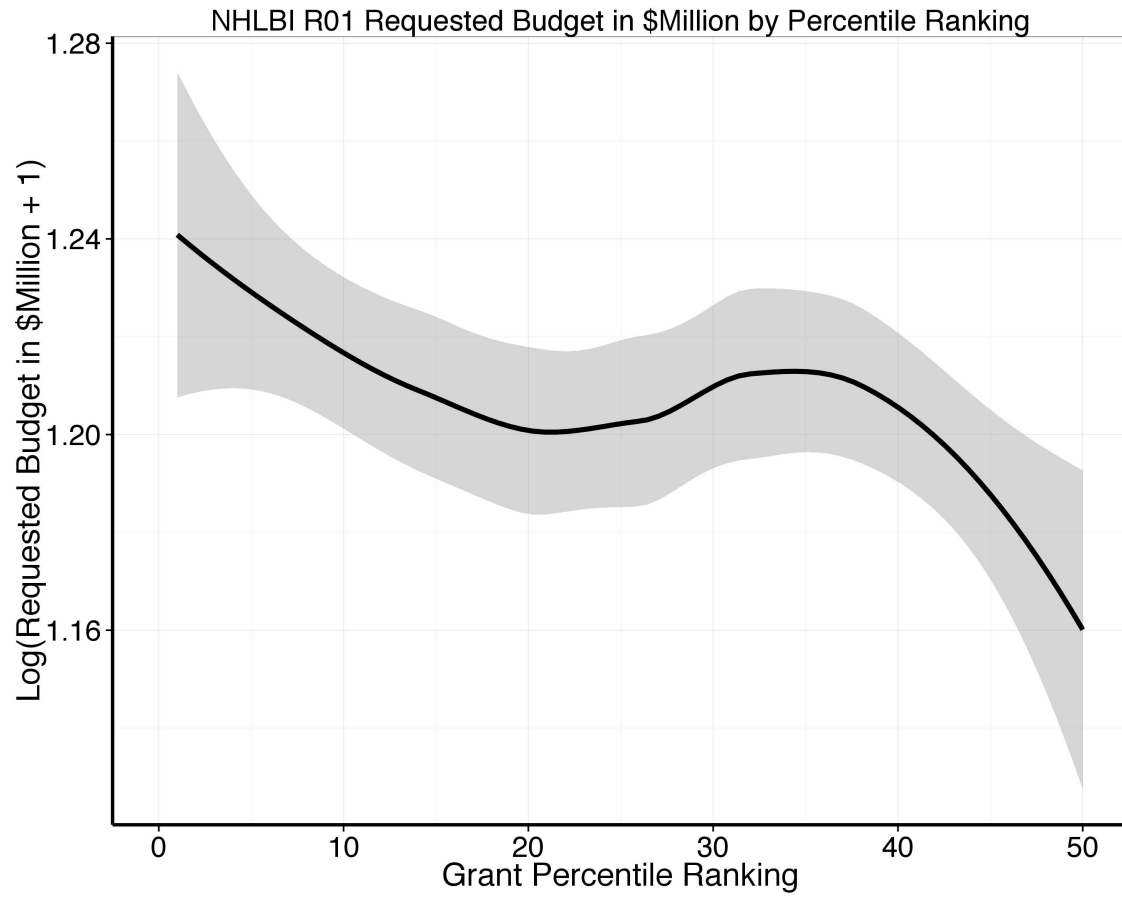
Michael S Lauer, Narasimhan S. Danthi, Jonathan Kaltman, and Colin Wu

All from the Division of Cardiovascular Sciences, NHLBI

Online Figure I: Receiver operating characteristic curve of the ability of grant percentile ranking to predict a grant's publication of at least one top-10% paper. A false positive would occur if a grant with a percentile ranking below a certain cut-off failed to produce at least one top-10% paper, whereas a true positive would occur should such a paper be published.

Percentile Score as a Predictor of At Least One Top–10% Paper per Grant

AUC 0.521 (95% CI 0.507–0.534)

True positive fraction

False positive fraction

Online Figure II: Loess smoother and 95% confidence ranges for the association between requested total budgets and grant percentile ranking among 3101 de novo R01 applications submitted to NHLBI in 2011 and 2012.

NHLBI R01 Requested Budget in $Million by Percentile Ranking

Online Figure III: Receiver operating characteristic curve of the ability of grant percentile ranking to predict a grant's publication of at least one top-10% paper per $million spent. A false positive would occur if a grant with a percentile ranking below a certain cut-off failed to produce at least one top-10% paper per $million spent, whereas a true positive would occur should such a paper be published.

Percentile Score as a Predictor of At Least One Top−10% Paper per $Million per Grant

AUC 0.489 (95% CI 0.474−0.503)