

Should biomedical graduate schools ignore the GRE?

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Do standardized tests accurately predict future outcomes in graduate school for biomedical programs?

A research team at the UNC School of Medicine found that the Graduate Record Exam (GRE), which is required for admission to graduate and doctorate programs across the country, is not the best indicator for predicting a student's success while pursuing a doctorate in the experimental life sciences. And from that research, the team recommends devaluing - if not eliminating altogether - the GRE from the applications process for biomedical PhD candidates.

The team was led by Jean Cook, PhD, professor of biochemistry and biophysics, and the associate dean for graduate education at UNC School of Medicine. Joshua Hall, PhD, director of the National Institutes of Health-funded Post-baccalaureate Research Education Program (PREP) at UNC, and Anna O'Connell, director of UNC's Biological and Biomedical Sciences Program (BBSP), were co-authors in the research paper, which was published today in *PLOS One*.

"My original interest in wanting to do a study like this really stemmed from my role directing our PREP program, which is where we have underrepresented minority students who are applying to PhD programs," Hall said. "I work closely with them and see them working as researchers and taking graduate coursework here at UNC, then they would apply to certain programs, but not get accepted. It would be frustrating to me to see students who were performing really well in the lab and in graduate

coursework here, but they had low GRE scores and that kept them from getting offers to graduate programs.

"There was a correlation where students with higher GRE scores would get more offers than students who were performing at a pretty high level as a researcher but who had lower GRE scores."

After completing a research study that evaluated a cohort of 280 students who matriculated into UNC through the BBSP, the team determined that quantitative metrics like GRE scores and - to some extent - GPAs have been carrying more weight in the application process than they should.

The study examined different factors that were being considered by admissions committees in UNC's BBSP, which is an umbrella admissions program for 14 PhD programs in the UNC School of Medicine, the UNC Eshelman School of Pharmacy, the UNC School of Dentistry, and the UNC College of Arts and Sciences. The team's findings were specific to students pursuing graduate degrees in the experimental life sciences fields and who were accepted into the program, Cook said.

"I don't know if any of our information is relevant in the humanities, or the arts or even engineering," Cook said. "We only know about the people that we train, and it's possible that a complete different set of metrics will be useful in different disciplines."

The study followed a similar one conducted at the University of California at San Francisco in 2015, which determined that a student's background in research - and not the GRE score - appeared to be the strongest indicator of future success in PhD programs.

"We analyzed a much larger number of applications and we came to

largely similar conclusions," Cook said. "We wanted to know what part of the application that we collect actually matters for the things we care about in graduate school."

First, Cook's team tried to define what made a "strong" student, then the team looked at what distinguished those students from those who weren't as strong.

"This was hard to define," Cook said. "Graduate school in the sciences is not about taking classes and doing well on a few tests. In fact, there are very few classes."

Instead, they relied on graduation rates and first-author publications, which are a standard graduation requirement for most biomedical PhD programs.

"We found that GRE scores simply didn't correlate with student success," Cook said. "Our message then to our admissions committee is: 'If the test score is spectacular, don't be seduced into thinking that it means they're going to be a great scientist while they're part of a lab at UNC.'"

O'Connell added: "And if their score is low, don't be tricked into thinking that they're not ready or they won't be productive."

The UNC conclusions were corroborated by a related study in the same issue of *PLOS One* from Vanderbilt University Medical School that specifically focused on the GRE.

If the GRE were to be eliminated from the application process, then perhaps another metric would take its place. The team plans to conduct follow-up studies on just what that should be.

"Maybe this will force us to start thinking of other metrics that perhaps are better indicators of the things we're actually trying to measure and look for in an applicant - things like grit, optimism, perseverance, and resiliency," Hall said.

Provided by University of North Carolina Health Care

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