Report from Graduate College Executive Committee on the role of the GRE in Graduate Admissions

1. Over the past few years there has been increasing questioning of the value of the GRE general and subject tests, and of their costs, especially their possible impact on efforts to diversify the academy. In response to these developments, Dean Colley requested that the Graduate College Executive Committee produce a report for departments, providing useful information on the issue to help them have an informed discussion of the place of GREs in their admissions process. This discussion is especially important in the context of a general drop in applications.

The UIC Graduate College has never required GREs for admission, and no longer considers them in fellowship decisions; all requirements for GREs are at the discretion of departments, and can be changed by formally informing the relevant EPC committees.

Departments have different needs, so there is no intent to develop a uniform set of application procedures; rather departments are requested to consciously review their admissions policies (which may be decades old), to determine which predictors make the most sense for their programs. However, this document contains some broad guidelines for departments to consider.

Recent Developments

2. Over the past few years there have been key studies in Biomedical and Physics PhD programs, and one across STEM reporting the limited predictive power of the GRE:

Peterson et al 2018 (STEM at 4 flagship universities)  
(Bio Sci, Physical Sci, Chem, Comp/Inf Sci, Eng, Geo, Math)  
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0206570

Moneta-Koehler et al 2017 (Biomedical, Vanderbilt)  
https://doi.org/10.1371/journal.pone.0166742

Hall et al 2017 (Biomedical, UNC)  
https://doi.org/10.1371/journal.pone.0169121

Miller et al 2019 (Physics, 24 universities)  
http://advances.sciencemag.org/content/5/1/eaat7550

For instance, the Peterson et al study reported that GRE success was uncorrelated with time to degree or first year completion in their sample. Such reports have led to questioning of the uses to which GRE data is put in admissions.

Although these reports draw striking conclusions, it should be recognized that there are difficulties with directly generalizing from these reports to other disciplines. There are also known difficulties
with correlational data that complicate interpretation due to issues of non-random assignment/sampling/selection bias (such as who was accepted or applies despite low scores), restricted range (relatively few observations with low scores), and compensatory relationships that may exist among predictors.

Other research reports that GRE scores can have predictive power across disciplines:

Kuncel et al 2001
https://psycnet.apa.org/record/2001-16276-008
(see also the 2018 discussion at
https://books.google.com/books?hl=en&lr=&id=LudFDwAAQBAJ&oi=fnd&pg=PA13&ots=O_RiiKIRlb&sig=yyZbkpInE3mYUirfulGynVLMOWE#v=onepage&q&f=false)

3. A growing number of PhD programs (particularly bioscience/biomedical and astronomy/physics programs) across the country and of a range of reputations have stopped requiring, or even accepting, GRE scores (an informal list is at https://grenotrequired.com). There has been increasing debate about the value of the GRE tests, especially in consideration of their role as a gatekeeper that limits efforts to diversify the academy (https://beyondthegre.org, resource developed/maintained by Peterson).

4. Overall applications to UIC graduate programs have been in decline. While there are many factors behind this change, it seems likely that now that they have options, whether the take the GRE is a factor in the decisions of some prospective students.

Response from ETS

5. The Peterson et al paper was covered in Inside Higher Ed

“The GRE test does not predict graduate or doctoral completion rates. It was never intended to do this. Rather, the test provides a measure of graduate school readiness by assessing skills that are necessary to handle graduate-level work: verbal and quantitative reasoning, critical thinking and analytical writing. Investing more money in research that proves the same point over and over is wasteful when there is so much need in the graduate community for research that: identifies what characteristics are correlated with completion; develops more inclusive admissions processes that will help to identify which applicants have the academic skills as well as the personal attributes to be successful; and creates programs that will support students in their chosen programs.”

The point is that departments should understand that ETS, the designer of the instrument, do not intend it as a predictor of graduate school success, but only as an indicator of ‘readiness’, and to consider the value of this measure amongst others.
6. Similarly, ETS clearly state that GRE scores should not be used as a cut-off, because of the negative impact this has on diversity in admissions: “A cut-off score (i.e., a minimum score) should never be used as the only criterion for denial of admission or awarding of a fellowship.” (A Snapshot of the Individuals Who Took the GRE® General Test — July 2012–June 2017) This is because “large numbers of prospective graduate students in a variety of subgroups are adversely affected by a cut-score policy” (https://www.ets.org/s/gre/pdf/dataviews_balanced_approach_to_score_use.pdf). That is, underrepresented groups under-perform on the GRE tests, with mean scores that can be around a standard deviation lower; using a cut-off as a filter disproportionality removes candidates from underrepresented groups.

The Graduate College Executive Committee strongly recommends that departments follow this guideline, and develop alternative or additional indicators of applicants’ readiness, and/or create programs to provide support for applicants who they wish to accept who are not adequately prepared to succeed. Program modifications should not use a GRE cutoff score as a sole criterion for eliminating applicants from consideration.

7. Moreover, according to ETS, GRE scores should never be used in isolation, but with “other sources of information, such as course grades, letters of recommendation, personal statements, samples of academic work or professional experience”. The Graduate College Executive Committee strongly recommends that departments use multiple criteria for admission. Full ETS guidelines can be found here (https://www.ets.org/s/gre/pdf/gre_guide.pdf), and further ETS resources are here (https://www.ets.org/gre/institutions/admissions/interpretation_resources/data).

Moving Forward

8. In light of the conversation provoked by the studies cited, the dropping of GRE requirements by peer institutions, a decline in graduate applications, and the guaranteed cost to students in time and money when they take the GRE, including the burden placed on international students to travel to testing sites, and the limitations it places on who applies to graduate programs, departments are requested to review their admissions procedures, with special regard to the utility of GREs, to determine what criteria will best lead to a diverse and successful student body, and what criteria are most useful to determine who has appropriate preparation for their program, and to consider what additional support they may need to provide students to ensure success in the program. Departments are encouraged to consult the research on best practices in their own disciplines.

9. At present, it is not clear what alternative sources of evidence might be most informative, and this will in any case vary by discipline. The argument that a certain well-defined predictor (such as the GRE) does not do a good job does not imply that any other variable that one makes up based on intuition will do a better job:
Studies offer mixed evidence that undergraduate GPA and letters of recommendation can serve as reliable predictors:

Faulkes, 2019  
http://science.sciencemag.org/content/363/6425/356.2.abstract

Prior research experience has been shown to have value as a predictor of success, but has been criticized as providing a basis for admissions decisions due to unfairness in who gets these opportunities.

Some PhD programs ask applicants to submit prior work including scholarly writing samples or research papers. Some programs are moving toward requesting structured essays, longer personal statements, or detailed research statements. Other programs use phone interviews (with candidates and even their references). Either interviews or review of substantial written artifacts require a substantial time investment and subjective evaluation. Moreover, these can be subject to biases, implicit or explicit, which require further effort to overcome.

Generally, any single criterion may have similar problems to GRE scores, so the best strategy is to employ a range of discipline-specific criteria to evaluate candidates in a more ‘holistic’ way.

Examples of Graduate Admissions without general GREs

10. UIC Philosophy PhD: as part of a trend in the field, no longer considers GRE scores, but bases decisions on writing samples (‘that demonstrates their capacity for philosophical work, preferably an essay written for a philosophy course’), grades, letters of recommendation, and a statement of purpose (addressing ‘the applicant’s past work in philosophy and plans for graduate study’). (Other philosophy PhD programs not requiring GREs include: Michigan State, University of Michigan, University of Pennsylvania, University of Wisconsin.)

11. UIC Hispanic & Italian Studies PhD: only students who already have a masters can apply to the PhD program. They request two research papers in addition to the personal statement (500 words). They provide this advice (structure) to students for their personal statement:

The statement of purpose is an extremely important document. It must be written and presented professionally: it must convince us that you are prepared to undertake graduate studies. It must tell us why you want to study the field you are applying for and why you want to come to UIC. If you are applying for the PhD, the statement of purpose should include a research project in some detail. The statement of purpose should be clear, specific and to the point. We are not interested in vague or grand statements (I want to study linguistics because of my thirst of knowledge...). Biographical details are rarely relevant.
12. Germanic Studies PhD: requires an academic writing sample on a topic in German or related field in addition to a statement of purpose of approximately 250 words addressing the applicant’s academic purpose and goals.

13. Other UIC Programs not requiring GRE (only required for international students and students seeking funding): Computer Science, Electrical and Computer Engineering, Industrial Engineering and Operations Research, Mechanical Engineering.

Several engineering programs recently removed the GRE from their masters application requirements based on the argument that the GRE is not a good predictor of success in these degree programs. Furthermore, this requirement has a negative impact on the ability to attract international graduate students to the programs. These programs generally consider GPA in relevant prior coursework as the primary evidence for assessment of applicants.

14. Some examples of other Chicago PhD programs no longer requiring GRE: Northwestern (African American Studies, Art History, Comparative Literature, French, German, History, Italian, Life Sciences, Interdepartmental Neuroscience, Interdisciplinary Biological Sciences); University of Chicago (Biosciences Division (which includes 16 graduate programs), Biophysical Sciences, Visual Arts); Loyola (Chemistry)

15. Stanford Anthropology PhD: uses writing sample ‘detailing evidence of both writing ability, the capacity for research, analysis, original thought at the graduate level, and demonstration of the ability to use theory in relation to evidence’, statement of purpose ‘detailing academic and professional preparation for the Anthropology graduate degree program’, applicant's academic record, letters of recommendation.

16. National doctoral fellowship programmes at the US National Institutes of Health, US National Science Foundation and the Howard Hughes Medical Institute have also dropped the GRE requirement (although some may still be allowing GRE scores to be submitted as

Please consult the website of these institutions for further details in the rubrics provided to applicants.

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Report submitted by
Nick Huggett and Jennifer Wiley on behalf of Graduate College Executive Committee