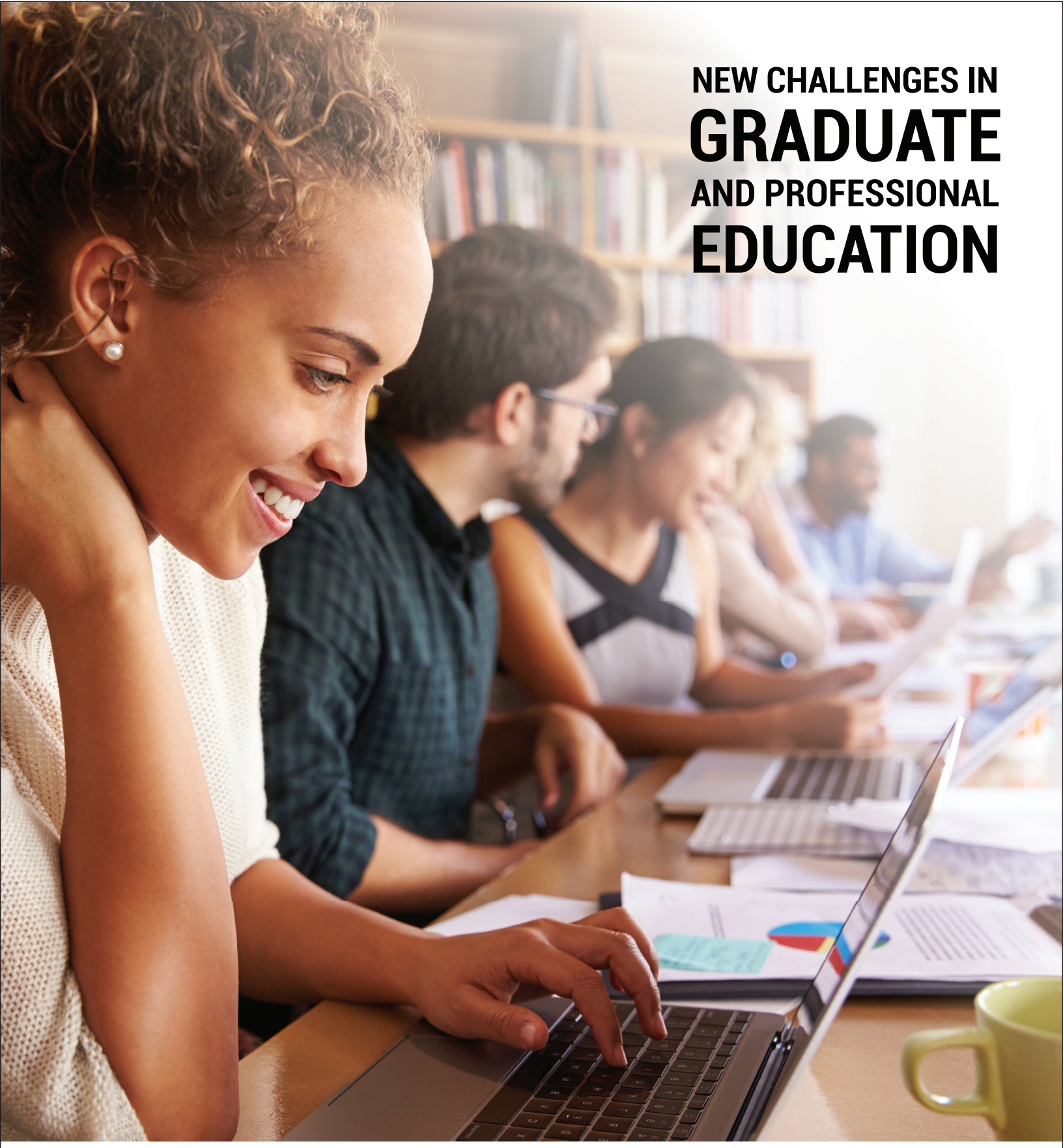

NEW CHALLENGES IN GRADUATE AND PROFESSIONAL EDUCATION

INSIDE HIGHER ED

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ETS on New Challenges in Graduate and Professional Education

Education around the world faces significant challenges, and graduate and professional education have a role in solving them. Achievement gaps among racial and ethnic groups persist, starting in preschool, lasting through secondary and postsecondary education, and ultimately leading to inequity in global workplace opportunities. Schools around the world struggle to attract, place and keep highly qualified educators, including teachers and professors who are similar in demographics to the increasingly diverse student populations they serve. In an ever more competitive global society, employers point to growing shortages of technically skilled people and to gaps in the communication and social-emotional skills of applicants; such deficits are evidence of a huge loss of human potential. There is an urgent need to identify and select candidates who are technologically skilled, communicatively proficient, culturally aware and agile, and in possession of a range of other competencies.

As a mission-based, nonprofit research organization with a distinguished history of advancing the science of educational measurement, ETS is dedicated to providing products, services, research and thought leadership that help solve these challenges by improving teaching and learning, expanding opportunities for individual learners, improving educational policy and advancing the science of assessment. Our research focuses on the challenges in education that are most pressing for all stakeholders — learners, parents, educators, administrators, employers and policymakers — and that ETS has the resources and capabilities to address.

We share the concerns about the vital challenges facing the higher education community, and that is what drives our focus on delivering insights and capabilities that can be integrated into solutions. These solutions can help increase the diversity — in terms of both demographics and ideas — and the quality of admissions, as well as improve the quality of learning outcomes so that all learners worldwide have an opportunity to demonstrate what they know and can do.

We also recognize that what we do at ETS is one small part of the vast education ecosystem, which is why we value collaboration with our partners in the graduate and professional school communities, as we aim to provide assessments that are meaningful and useful within that system and in a way that advances more holistic approaches for admissions and eliminates unintended consequences of misuse. ETS was founded on the belief that when properly designed and understood, assessments can have a positive impact on education and society. Our daily work is steeped in this belief as we take very seriously our role as the gateway between students and institutions and their joint ambitions to succeed.

On behalf of ETS Research, we join our *GRE*® colleagues at ETS in supporting the collaboration with *Inside Higher Ed* to bring you this collection of articles about new challenges in graduate and professional education. We welcome you to contact us with your comments at **gretests@ets.org**.

Joanna Gorin
Vice President, Research
Educational Testing Service

- For more information about ETS Research initiatives, visit **ets.org/research**.
- Follow higher education topics on ETS Open Notes at **news.ets.org**.
- For more information about the GRE Program, visit **ets.org/gre**.

Introduction

Graduate and professional education are crucial to American society and American higher education. Future professionals in business, law and the health professions are trained. And institutions are grappling with how to embrace new technologies while preserving key standards and providing affordable, relevant programs.

And providing master's and doctoral education not only is a key mission of many universities, but will help produce the future teachers, professors and administrators of schools and colleges – not to mention the experts in many fields who will spur innovation. In these fields, graduate educators face enrollment pressures, curricular reform and the need to make sure their graduates are well suited for and can find jobs.

The articles in this compilation explore some of the trends and responses to those trends. *Inside Higher Ed* will continue to cover these issues. We welcome your thoughts on this compilation and your ideas for future coverage.

--The Editors
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News

A selection of articles by *Inside Higher Ed* reporters

Enrollment and Market Forces

By Nick Roll // September 28, 2017

Enrollment at graduate schools is still increasing, but at a slower pace than before. Researchers point to a market correction and declining growth in international students.

Enrollment in graduate school is up, continuing a trend in first-time graduate students researchers have seen for five years. But growth rates are starting to dip, according to numbers from a new report the Council of Graduate Schools co-published with the Graduate Record Examinations Board.

The report shows the "strength of graduate education and the attractiveness of U.S. graduate programs to both domestic students and [students from] abroad," said Suzanne Ortega, the council's president. "There were almost 2.25 million applications to graduate school."

Indeed, the number of applications received last year set a record, with a growth of 1.2 percent in the number of applications compared to the previous year. However, between 2006 and 2016 -- the years the study captured -- the number of graduate applications grew at an average annual rate of 5.7 percent.

"This is our fifth consecutive year of growth in graduate enrollment, but the growth rate has flattened, really, two years in a row," Ortega said. "This year the primary driver in the slowing rate of growth really is decreases in the rate of growth for international students."

Colleges across the country have seen drops in international student enrollment, especially in graduate programs and among students from China, India and Saudi Arabia. Some colleges cited the Trump administration's policies, although others credited market forces as a cause.

(India, China and Saudi Arabia are not covered by the Trump administration's travel ban, although some colleges said political factors in the U.S. beyond the ban are affecting enrollment.) At the same time, other colleges reported no decline in international students.

According to the data from the Council of Graduate Schools, enrollment among first-time international graduate students decreased 0.9 percent between fall 2016 and the previous year, the first decrease since 2003. The five-year average annual increase of those students' enroll-

ment still remains high, however, at 7.8 percent.

The slowdown also could be explained at least partially by how the data break down by degree, Ortega said. Fields such as business and the biological and agricultural sciences have seen significant growth in enrollment, but engineering and computer science programs have experienced declines.

"Those are fields where international students have been really a significant portion of the enrollment," Ortega said of engineering and computer science.

On the other hand, graduate programs have seen an increase in enrollment among students from minority groups, including African-American, Latino, Native American and Alaska Native students. Students from underrepresented minority groups, according to the data, now make up 23.4 percent of first-year graduate students who are U.S. citizens or permanent residents.

"There's this counterbalancing," Ortega said, adding that she'd like to see that number keep climbing. "Given the large percentage of graduate students who are in master's programs and this sort of variation by field, our best interpretation is that graduate enrollment reflects market forces and trends."

Another trend the study found, and that Ortega said likely was due to changes in market demands, was the growing number of certificates earned by graduate students in addition to a degree.

The number of graduate certificates awarded increased 11.8 percent between the 2014-15 and 2015-16 academic years, according to the survey. That's about a two-percentage-point jump from the five-year average.

"This is, we suspect, a definite way in which the graduate education enterprise is contributing to the demands of the work force," said Hironao Okahana, assistant vice president for research and policy analysis at the council.

Ortega said the rising number of certificates awarded was consistent with what they had heard about the rising importance of microcredentials. She said it was unclear why there has been a rise in certificates.

"The only honest answer we can give right now is we don't know," said Ortega. "But educated guesses

Suzanne Ortega, president of the Council of Graduate Schools

[are] this whole notion of transciptable credentials that demonstrate competencies that can be immediately deployed in the work force, or are necessary for people to keep up with rapid changes in their current field, seem to be the most logical explanations."

While individual fields of study have had bigger changes in enrollment year to year, over all the number of students seeking graduate degrees is moving at a stable pace, even if overall growth is slowing.

"The patterns, to some extent, are self-correcting," Ortega said. "For both statistical reasons, and for resource constraints, the really sizable increases in enrollment we've seen, let's say, over the past four or five years, aren't sustainable." ■

https://www.insidehighered.com/news/2017/09/28/graduate-school-enrollment-grows-again-slower-rate

GRE® Test Enables Law Schools Greater Access to a Wider Range of Applicants

By David Klieger and Simone Pollard

Every worthy change begins with a single effort.

A law school's search for a way to admit the "best and most diverse class it can" has sparked a movement among other institutions committed to doing the same.

When University of Arizona's law school reached out to ETS two years ago, the school wanted help in finding a way to expand access to law school for qualified applicants from a wider range of backgrounds. At the time, there was only one test that Arizona and other law schools in the United States accepted for admissions purposes: the LSAT® exam. But upon conclusion of a study that showed that the *GRE*® General Test is a valid and reliable predictor of students' first-term law school grades, Arizona announced it would accept GRE scores with parity. It was an announcement that drew national attention, since Dean Marc Miller indicated that the change in Arizona's admissions policy was "an effort to fundamentally change legal education and the legal profession." Since then, five other law schools have made similar announcements, and 21 law schools are working with ETS on a national validity study that should be ready for public sharing later this fall.

How has a testing program that has been around for many years sparked new interest? The GRE General Test is appealing to law schools because more people take it than any other graduate or professional school admissions test — more than half of a million test takers annually. That's a larger pool from which law schools can glean applicants. And that pool contains people who might be interested in pursuing a law degree, people who want to apply to both graduate school and law school but don't want to pay for two tests, or people who may already possess GRE scores that they used for admissions to a graduate or business program before deciding to pursue a law degree. And as Harvard Law School's dean observed when it announced it would accept GRE scores as well, law schools' use of the GRE test can open a pipeline for applicants with broader interests and backgrounds, including those interested in burgeoning STEM fields.

Increasing access to law schools, in part, means increasing relevant test options for students. Of course, the decision to accept an additional measurement tool is a serious matter. Law schools need to identify clearly what they want to measure before they select a measurement tool, and they should collect evidence that they have chosen the right admissions test before they make a decision that could have a dramatic impact on their admissions process. Such was the case in 2014, when business schools reviewed evidence that the GRE test is valid and reliable for use in business school admissions. Now, about 1,300 business schools around the world accept GRE scores.

To meet the needs of the 205 law schools accredited by the American Bar Association, we look forward to completing the national study with a diverse and representative group of law schools so that we can show that the GRE test is valid and reliable to use in law schools of various sizes, locations and levels of selectivity.

As a nonprofit measurement research organization, ETS seeks to help advance quality and equity in education by providing fair, reliable and valid assessments, research and related services. Our efforts to validate the GRE test for use in law school admissions helps us fulfill our organization's core mission and, together with law schools, we hope that the end result is greater access to law school for qualified people from a wider range of backgrounds.

And that, indeed, would be a worthy change.

Klieger is a Research Scientist in the Academic to Career Research Center at ETS. Pollard is Senior Director of Business Development in ETS's Higher Education Division.

Rejecting Academe

By Colleen Flaherty // September 29, 2017

As science and engineering Ph.D. students progress through their programs, many lose interest in academic careers, report finds. Study's authors say findings suggest changes are needed in Ph.D. training.

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Most Ph.D.s in the natural sciences and engineering leave academe because of the difficult job market, not because they want to, right? Wrong, according to a new study in *PLOS ONE*.

Authors Michael Roach, the J. Thomas and Nancy W. Clark Assistant Professor of Entrepreneurship at Cornell University, and Henry Sauermann, an associate professor of strategic management at Georgia Institute of Technology, found that labor market conditions do prevent some doctoral graduates interested in an academic career from pursuing one -- but a large share lose interest for other reasons.

That matters, the authors say, because "efforts to understand students' career paths should consider the diversity in career goals" and the broad range of factors than shape them. In particular, "comparisons of the number of graduates with the number of available faculty positions likely overstate the number of Ph.D.s who aspire to a faculty career, thereby exaggerating imbalances in academic labor markets."

It's good news, according to the study, since the significant share of students who remain interested in academe "alleviates concerns about a potential 'drying up'" of the faculty pipeline, and means "better alignment between students' career preferences and the careers they ultimately enter."

But the findings also indicate that more information, training and flexibility are needed within Ph.D. programs (and maybe even before students enroll in them), according to the study. That way, students can best prepare for the jobs they'll choose.

Roach said Thursday that non-academic careers "have long been

the more common pathway and not the alternative." And most faculty members "have spent their entire careers in academia and are not familiar enough with other career pathways to help guide their students." Moreover, there isn't "enough appreciation for the important ways that science and engineering Ph.D.s contribute to society outside of academia, through innovation and economic growth."

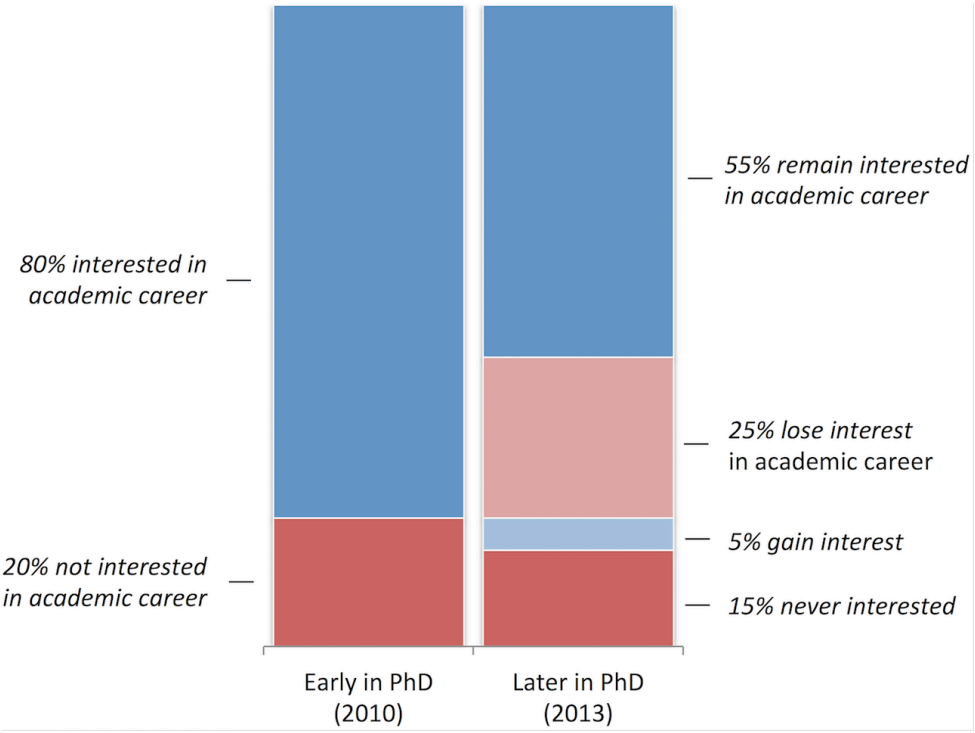
Economists and policy makers have long recognized the "essential role of universities in training industrial scientists," he said, "and applying scientific knowledge and research skills to the development of new medical devices or autonomous vehicles or alternative energy should not be seen as a failure."

The study, "The Declining Interest in an Academic Career," is based on a longitudinal survey of a cohort of graduate students from 39 U.S. research universities over the course of their training. The central idea was to document changes in those students' career preferences and what might be fueling them.

The first major finding is that although the vast majority of students start their Ph.D. training interested in an academic career, that share falls to 55 percent of students over time -- and 25 percent of students lose all interest in academe.

Fifteen percent, meanwhile, were never interested in an academic career. Just 5 percent became more interested in a faculty career during their training.

Roach and Sauermann say that the declining interest isn't, therefore, a general phenomenon but rather "reflects a divergence between those students who remain highly interested in an academic career and other students who are no longer interested in one."



And does the job market drive the drop in interest? No. Rather, it's misalignment between students' evolving preferences for specific job attributes, according to the paper, and students' changing perceptions of their own research abilities. Perhaps surprisingly, the pressure to produce publications -- and the challenges for those who can't -- don't seem to play a role.

Digging Deeper

Roach and Sauermann followed 854 students over their training in the life sciences (36 percent of the sample), chemistry (12 percent), physics (18 percent), engineering (24 percent) and computer science (10 percent). The 39 universities in the sample were considered tier one and accounted for 40 percent of all graduating Ph.D.s in the natural sciences and engineering. First- and second-year Ph.D. students were invited via email to participate in a survey about their Ph.D. program experiences and career goals, with the first responses reported in 2010 at a response rate of 30 percent. The researchers followed up with respondents three years later, in 2013, and got a response rate of about 40 percent.

To measure career interests, respondents were asked both times, "Putting job availability aside, how attractive or unattractive do you personally find each of the following careers?" The survey asked about a range of research and nonresearch careers inside and outside academe, but the new study focuses on

	Obs.	*2010*	*Change from 2010 to 2013*			
		Academic career interest early in PhD	Remain interested	Lose interest	Gain interest	Never interested
Gender						
Men	500	83%	59%	24%	5%	12%
Women	345	75%	50%	25%	6%	19%
Nationality						
U.S. citizens	626	79%	51%	27%	6%	16%
Non-U.S. citizens	219	84%	68%	16%	5%	11%

https://doi.org/10.1371/journal.pone.0184130.t002

students' interest in university faculty jobs with a focus on research.

By 2013, nearly one-third of doctoral students surveyed who started their programs as faculty hopefuls lost that spark, and the job also became increasingly less attractive to them on a five-point scale. Men were more likely to start out enthusiastic about an academic career than were women (83 percent vs. 75 percent), and this difference persisted over time, with 59 percent of men remaining interested in an academic career compared to 50 percent of women after three years. Similar shares of men and women reported a decline in their interest in an academic career over time.

In another significant demographic finding, some 27 percent of U.S. citizens lost interest in an academic career compared to only 16 percent of foreign Ph.D. students. Some 51 percent of U.S. citizens remained interested in an academic career three years on, compared to 68 percent of foreign students.

Both the 2010 and 2013 surveys asked students, "What do you think is the probability that a Ph.D. in your field can find the following positions after graduation (and any potential postdocs)," with positions including "university faculty with an emphasis on research or development" and "established firm job with an emphasis on research or development."

> "And does the job market drive the drop in interest? No. Rather, it's misalignment between students' evolving preferences for specific job attributes."

Early in their programs, students expected that about half of graduates in their fields would obtain a faculty position at some point in their careers. Over time that expectation decreased significantly for all students, but irrespective of their interest in an academic career. And while students in the 2013 survey expected that one might spend more time as a postdoctoral fellow than they had in 2010, those responses were also not significantly linked to career aspirations or preferences. So, too, with students' responses to the question "To what extent do you think research funding is available to faculty members at a research university?"

Instead, non-job-market factors correlated with students' interest in tenure-track jobs.

Both waves of the survey asked students, "When thinking about the future, how interesting would you find the following kinds of work?" on a five-point scale, for example. Work activities included basic research ("research that contributes fundamental insights or theories"), applied research ("research that creates knowledge to solve practical problems") and commercialization ("commercializing research results into products or services").

To measure preferences for job attributes, students were asked "When thinking about an ideal job, how important is each of the following factors to you?" Listed factors included "financial income (e.g., salary, bonus, etc.)" and "freedom to choose research projects."

Early in the Ph.D. program, the vast majority of students have a strong preference for basic and applied re-

	Remain interested				*Lose interest*			
	Early in PhD (2010)	**Later in PhD (2013)**	**t-test**	**p-value**	**Early in PhD (2010)**	**Later in PhD (2013)**	**t-test**	**p-value**
Labor market expectations								
Expected probability of faculty position	49%	34%	12.46	0.00	49%	29%	10.42	0.00
Expected probability of industrial R&D position	63%	58%	4.43	0.00	64%	60%	2.55	0.01
Years of postdoc required for faculty position	2.76	3.11	-4.59	0.00	2.97	3.28	-2.76	0.01
Availability of research funding	38%	15%	9.01	0.00	36%	15%	5.29	0.00
Work preferences								
Interest in basic research	92%	92%	0.42	0.67	87%	53%	8.68	0.00
Interest in applied research	93%	93%	0.14	0.89	94%	84%	3.76	0.00
Interest in commercialization	42%	38%	1.64	0.10	44%	55%	-2.88	0.00
Importance of salary	79%	80%	-0.78	0.43	78%	80%	-0.54	0.59
Importance of freedom	92%	88%	2.30	0.02	86%	61%	6.64	0.00
Ability								
Self-perceived ability	6.39	6.98	-7.72	0.00	6.00	5.99	-0.06	0.95
Number of publications	0.96	2.72	-17.91	0.00	0.80	2.29	-10.81	0.00

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search and choosing research projects. Students who remained interested in an academic career later on changed little over time with respect to these preferences.

But among students who lost interest, the share with strong preferences for basic research, applied research and freedom decreased significantly, while the share with a strong preference for commercialization increased. Income was not a significant factor.

The authors note that they can't rule out reverse causality, in that changes in career interests could lead to changes in preferences for work activities and job attributes. But they say their observations are consistent with the idea that preferences in job attributes "shape students' career interests and suggest that the decreased interest in a faculty career partly reflects changes in students' preferences."

As for ability, the surveys asked students to rate their research ability relative to their peers in their area of specialization on a sliding scale. They also asked respondents how many published or accepted articles in peer-reviewed journals listed them as authors (that measure increased from a mean of 0.87 in 2010 to 2.5 in 2013). Students who remained interested in a faculty career started with higher levels of self-reported ability and publications than those who lost interest. Subjective ability increased significantly among those who remained interested in academe but remained unchanged among those who lost interest. Publication counts increased for both groups, but not significantly more for the sustained interest group.

In sum, 40 percent of advanced students aren't interested in pursuing an academic career, according to the study. Many of those students reported a lack of information about nonacademic career options, suggesting that more information about career diversity is needed earlier in Ph.D. programs. Experiential approaches, such as internships, may be more effective than just workshops and information sessions, the authors say. They also praise programs such as the National Institutes of Health's BEST Program, which promotes programs that broaden Ph.D. training. And advisers still tend to strongly encourage the traditional academic career path.

The authors also note their findings suggest that students would benefit from more information about diverse careers in the sciences before starting their Ph.D. programs, to avoid a mismatch between what they want to do and what kinds of training they need.

"This may allow individuals to take advantage of a growing range of alternative educational options, such as professional science master's programs, and ultimately result in faster career progress and more satisfying long-term career outcomes."

Over all, Roach said, the study clashes with the "common assumption" that most Ph.D. students want a faculty career. When students start working toward their doctorates, he said, "many see academia as the typical career path, but as they learn more about what the faculty career is really like and learn more about their own interests, they

realize that academia is not for them."

And among the Ph.D. students in the study who remain attracted to an academic career, he said, more than half also express an interest in industry careers. "So the notion that academia is the only preferred career path and that careers in entrepreneurship and industrial [research and development] are undesirable is a false dichotomy."

> "They realize that being an academic is not just about being able to do the research that you love to do every day."

Nathan L. Vanderford, a professor of toxicology and cancer biology at the University of Kentucky, who has studied the gap between Ph.D. training and job outcomes, said that the study captured what he and colleagues observe every day, anecdotally: that the job market doesn't inform students' career decisions as much as a growing understanding of what an academic career entails.

Increasingly, he said, given the highly competitive funding environment, being a professor means chasing grants and otherwise dealing with the academic bureaucracy.

"They realize that being an academic is not just about being able to do the research that you love to do every day," he said of trainees.

Vanderford wholeheartedly supported the paper's multiple calls for more information for potential Ph.D. students and training for Ph.D. candidates about the job market, both inside and outside academe. He said he's been teaching a class on exactly that topic for the past four years, so that trainees "can make more informed decisions as they're making progress preparing for their careers." ■

https://www.insidehighered.com/news/2017/09/29/study-challenges-common-belief-most-science-and-engineering-phds-leave-academe

The Problem in Graduate Admissions Is Culture, Not Testing

By Jonathan Malesic

Graduate admissions is an inexact science. Faculty committees, sitting around conference tables for hours on end, have plenty of data to decide about applicants, including their transcripts, personal statements, letters of recommendation and *GRE*® scores. Problem is, it's not always clear just what the data mean. That makes it easy for biases to slip in undetected. And now there are growing concerns that the admissions process, including the role standardized testing plays in it, is standing in the way of greater gender, racial and socioeconomic equity in Ph.D. programs and the professoriate.

Concerns about diversity in graduate programs are well-founded. But standardized tests like the GRE test are not what's holding the academy back from attaining greater diversity. The problem arises instead in those long meetings in conference rooms. Faculty have limited time to make important decisions, all while navigating departmental politics and seeking to raise their program's prestige. So as Julie Posselt, an education professor at the University of Southern California shows in her recent book *Inside Graduate Admissions*, faculty often end up trying to simplify a tricky process by choosing applicants who remind them of themselves. In short, the problem is rooted in human psychology and faculty culture; it demands a human-centered solution.

The American Astronomical Society (AAS) in 2016 recommended that graduate programs in astronomy stop requiring GRE scores for applicants. The AAS argues, in part, that when admissions committees establish cutoff GRE scores for applicants, they end up reducing the demographic diversity of their candidates for admission. Because of well-known disparities in scores between test takers of different races and genders, the AAS and some others believe that setting an arbitrary minimum score will disproportionately eliminate female, African American and Hispanic candidates from the pool.

The AAS is right to push for greater diversity in the field. And it's true that an astronomer — or sociologist or historian — is more than his or her GRE score. But ignoring the test will not solve the academy's inequities. That's because the GRE test is not the problem. In fact, when GRE scores are viewed in their proper context — including the known gender and racial score differences — they enable direct comparisons between candidates that no other criterion does. Evidence from undergraduate admissions suggests that making standardized tests optional does not produce more diverse student populations.

To understand the culture of graduate admissions, Posselt interviewed faculty and sat in on admissions committee meetings at 10 top-ranked graduate programs across the arts and sciences. What she found was faculty using a wide, inconsistent range of standards to arrive at their decisions. She saw some faculty misuse the GRE test by establishing high cutoff scores in the first stage of review in an effort to trim a large stack of applications down to a manageable size. She also found that faculty apply arbitrary criteria inconsistently across the applicant pool. In one extreme case, a professor of classics speculated that growing up in a "pastoral" region of the United States might be conducive to one applicant's ability to master ancient languages.

Faculty in elite departments struggle to distinguish among all the high-GRE score, high-GPA applications they see, Posselt found. Emotion, therefore, ends up heavily influencing decisions. In the conference room, one professor's enthusiasm for an applicant can sway everyone else's judgment. This commonly happens when an applicant comes from a faculty member's alma mater, according to Posselt's findings. Faculty also have a strong incentive to keep the peace in their departments, which can mean deferring to each other to avoid conflict.

The shifting definition of merit that results, and that Posselt observed, is not inherently bad. That is precisely how unconventional applicants she saw committees consider — like a student with low test scores who grew up on a remote Himalayan mountainside — get admitted and eventually thrive. Still, faculty need to be careful that their subjective judgments don't reproduce longstanding inequities in their fields.

Posselt argues that in the final stages of the admissions process, many faculty lean on the shaky criterion of "fit." Other gatekeepers to elite professions do the same. Recruiters for top finance, legal and consulting firms look for a certain kind of "fit" among prospective entry-level employees. Lauren Rivera, a professor of management and organizations at Northwestern University's Kellogg School of Management, shows in her book *Pedigree: How Elite Students Get Elite Jobs* that "fit" means being someone the recruiter wouldn't mind being crammed into a rental car or stuck in an airport with.

In practice, this translates into recruiters looking for people like themselves: graduates of elite universities who are "well-rounded" in exactly the same way, right down to their hobbies. Diversity in hiring, therefore, often remain elusive.

Graduate admissions can produce similar results. That's not surprising, because, like private-sector recruitment, it is a human process. Humans are rational, emotional and social all at once. They're also often overworked, and so they can use help in making decisions that align with the higher-order goals of their institutions, such as expanding diversity.

Faculty understandably want autonomy in graduate admissions since they are choosing their apprentices and, in many programs, their employees. But human biases inevitably influence faculty members' choices in admissions. Universities therefore need to acknowledge those biases and work around them in order to diversify academia. This will mean changing faculty culture in order to align the admissions process with the university's diversity goals.

There are plenty of ways deans and provosts can help faculty accomplish this. They can offer incentives, like increased faculty research budgets, to programs that graduate a higher number of female, Black or Hispanic Ph.Ds. They can also encourage more active student recruitment, reaching out to promising undergraduate students from underrepresented groups. Institutions that want to increase the population of Black and Hispanic Ph.D. students might build cooperative programs like the Fisk-Vanderbilt Bridge, which prepares students at a historically Black university for graduate programs at a neighboring research institution. Columbia University has a bridge program open to students from underrepresented

groups who want to pursue a Ph.D. in natural sciences. The American Physical Society sponsors a bridge program, too.

Admissions committees might also benefit from changing the sequence and information context of their admissions decisions. (Management scholars call this choice architecture.) Some tech firms have attempted to diversify their workforces by masking applicants' biographical information in the first round of review. Universities might consider something analogous. To keep faculty from immediately eliminating all candidates below a certain GRE score threshold, a department might withhold GRE scores from admissions committees until faculty have first reviewed other elements of the applications and identified the strongest minority candidates.

Because admissions committees typically look at GRE scores early in the process and consider diversity late, as Posselt found, such a change would completely reverse a familiar sequence. It would take some getting used to. But it would also address one of the American Astronomical Society's (and ETS's) chief concerns: the overreliance on GRE scores, without their full context, to vet applicants right away.

Decisions are hard. But information — including everything that goes into a graduate school application — is not the reason they're hard. They're hard because information, on its own, doesn't tell you how to use it. Culture does. By focusing on the culture of graduate admissions, universities can help faculty make decisions that improve the academy's diversity.

Jonathan Malesic is a former full-time faculty member at King's College and freelance writer who contributes occasionally to *The Chronicle of Higher Education* and *Inside Higher Ed*. He is currently writing a book on the spiritual costs of the American work ethic.

50 Shades of Gray

By Colleen Flaherty // March 28, 2017

Study suggests scientific work force is aging -- and will get even older, as younger scientists stay on the sidelines in hopes of jobs and face longer odds of landing grants.

Getty Images

Blame the boomers -- sort of. While the scientific work force is indeed getting older as baby boomers continue to work past traditional retirement age, the work force will continue to age even after boomers are gone, according to a new study in the *Proceedings of the National Academy of Sciences*.

The study, by David Blau and Bruce Weinberg, both professors of economics at Ohio State University, found that the average age of employed scientists increased from 45 in 1993 to nearly 49 in 2010. Scientists aged faster than the U.S. work force in general, and across fields -- even newer ones, such as computer and information science. The study includes those with natural and social science, health and engineering degrees.

The trend will only continue, with the average scientist's age increasing by an additional 2.3 years within the near future, without intervention, according to a model included in the study.

Blau and Weinberg looked at data from the National Science Foundation's Survey of Doctorate Recipients, tracking about 73,000 scientists aged 76 or younger. Roughly 40 percent were academic scientists, from tenured professors to staff re-

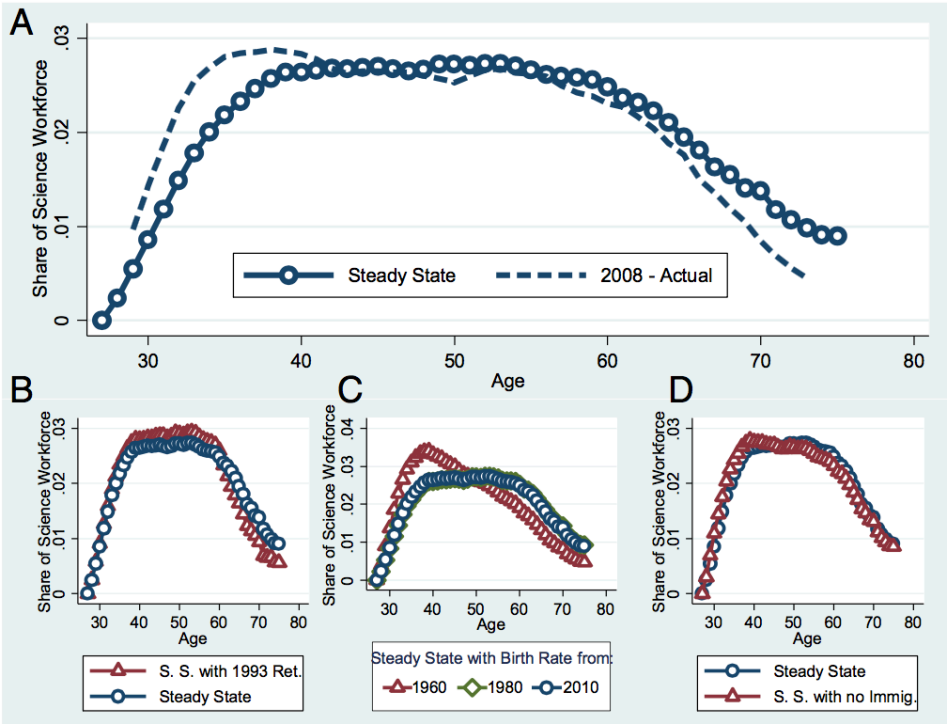


Fig. 1. The age distribution of the US scientific workforce and the US workforce as a whole. *A* shows the age distribution of scientists [calculated from the Survey of Doctorate Recipients (SDR)] and the US workforce [calculated from the Current Population Survey (CPS)] for 1993 and 2010. *B* shows the share of scientists in the US workforce by age in 1993 and 2010. *C* plots trends in the mean age of scientists and the US workforce as well as the share of scientists and the US workforce age 55 and over.

searchers. The study also relied on some U.S. Census data.

The authors attribute much of what they observed about the graying work force to the baby-boom generation, but also to the revocation of the mandatory retirement age for university professors in 1994. "In 1993, the shape of the retirement hazard was similar to, but lower than the typical age pattern of retirement, with a substantial increase in the exit rate between ages 60 and 62, a jump at age 65, and a very large spike at age 70," the study says. "The most recent data show a much slower and more gradual increase in the exit hazard rate, and no major spikes. In particular, the large spike at age 70 in 1993 completely disappeared by 2008."

In 1993, 18 percent of scientists were 55 or older. By 2010, that statistic had jumped to 33 percent. By comparison, the U.S. general work force also aged, but less dramatically, from about 15 percent 55 or older to 23 percent over the same period.

Gender and other demographic shifts had no real impact on the age question, the authors say.

Weinberg said in an interview that he's interested in the intersection of age and productivity, with the general perception being that one's scientific contributions decline past a certain age. "That's at best an oversimplification and maybe wrong, though," he said -- so an aging population doesn't necessarily mean less innovative science.

The argument recalls that made in a 2016 paper in *Science*: that a scientist's impact is randomly distributed within their papers and is not linked to age.

Still, Weinberg and Blau's paper raises questions about what the aging work force means for junior scientists -- many of whom are already waiting out faculty or other position as postdocs. He said his study can't speak to that question directly. But a basic analysis suggests that scientists working longer means not only a more difficult entry-level academic job market, but also a more competitive funding environment for those trying to keep faculty jobs or be promoted, he added. And that's even before proposed cuts to the federal science budget.

"This operates on two levels," Weinberg said.

The funding question is of concern to a number of academic groups, including the National Academics of Sciences, Engineering and Medicine, which recently launched the Next Generation Researchers Initiative. The slide on the following page, presented at a January committee meeting by Michael Lauer, deputy director for extramural research for the National Institutes of Health, shows that rates for successful grants are going up for those over 60, but down for both early- and midcareer scientists.

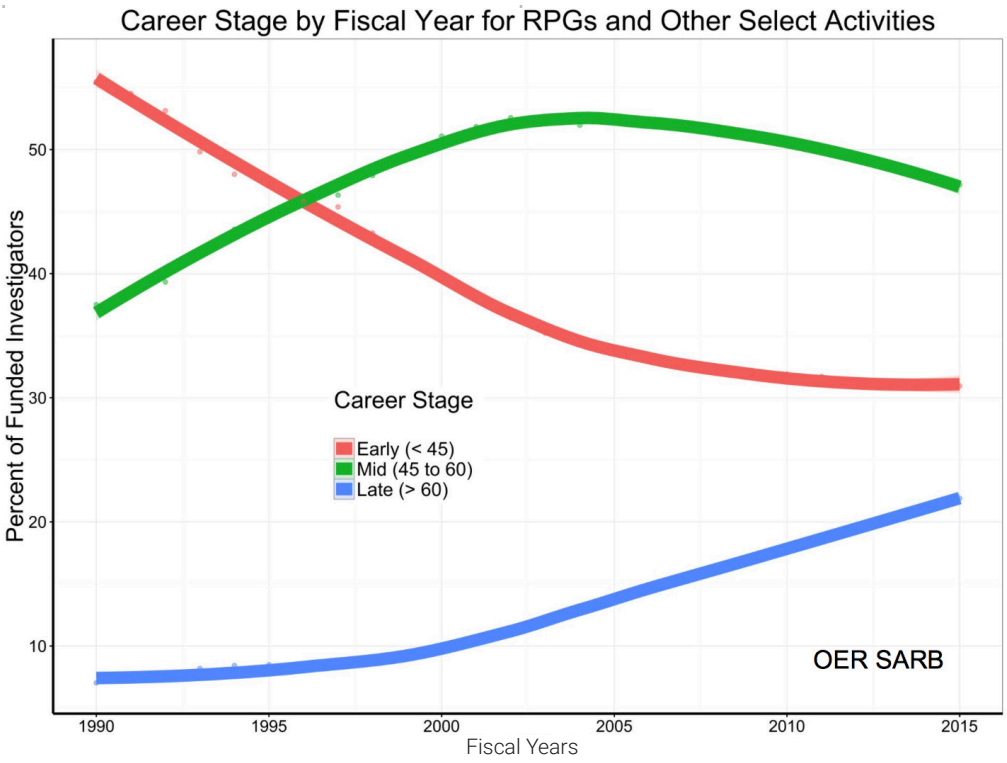
Gary McDowell, a biophysical scientist and resident at Manylabs

open science workspace, advocates for junior scientists as executive director of the nonprofit Future of Research (he's also on the committee for the new initiative). He said he left academe at 31 after a series of research positions, in part because the notion that "things wouldn't be safe for the next 30 years" was "pretty intimidating."

Over all, McDowell said Weinberg's data add "to an overwhelming message right now that academia is incredibly tough to persist in." The question going forward, he added, is "whether the scientific establishment will respond to these data in implementing recommendations that have been suggested over decades of reports, or continue as it has been, with an unsustainable, ever-increasing trainee population being pushed towards stable academic jobs that are neither being created nor vacated."

Still, McDowell said he wouldn't want to bring back mandatory retirement for professors. Weinberg also said it wouldn't be a panacea to the employment and funding problems, or necessarily good for science, since many professors, again, are innovative into older age. And while unproductive professors with tenure may not be fired, he said, academic science can be highly inhospitable to those who hang on past their prime; labs, for example, can be taken away.

"I'm not 100 percent sure what the problem is, but, in terms of a solution, even if we could go back to mandatory retirement, that seems off." ■



https://www.insidehighered.com/news/2017/03/28/study-suggests-scientific-work-force-aging-younger-scientists-struggle-find-good

For-Profit Graduate Schools Popular With Black Women

By Ashley A. Smith // July 25, 2017

Consumer advocates are concerned by the relatively large proportion of black women graduate students who attend for-profits.

Graduate student enrollment is declining at for-profit institutions, but the sector continues to resonate with one particular demographic -- black women.

"Of black bachelor's degree recipients, women will more significantly go on to get master's degrees," said Sandy Baum, a senior fellow in the education policy program at the Urban Institute. "African-American women are more likely to go to the for-profit sector."

Over all, African-American men and women are overrepresented at for-profit master's degree programs. While accounting for 9 percent of the nation's mix of college students, in 2007 they made up roughly a quarter of the for-profit sector's graduate enrollment, according to Baum, who cited a report she co-authored.

And the numbers of black women who choose for-profit graduate education have increased slightly. In 2007, 24 percent of black women graduate students chose to pursue their degrees at for-profit institutions, Baum said, according to federal data. In 2014, 31 percent of black women graduate students were enrolled in for-profit colleges compared to 13 percent of all female graduate students and 9 percent of white women graduate students, according to an analysis of federal data by Elizabeth Baylor, the former director of postsecondary education policy at the Center for American Progress.

Total graduate student enrollment at for-profits decreased by more than 7 percent from 2015 to 2016, to 263,498 students, according to the National Student Clearinghouse Research Center.

For critics of the sector, the higher proportion of African-American women enrolling in for-profit master's programs is an issue.

"This trend is concerning because for-profit graduate education is a relatively new sector and its results are unknown," Baylor said in an email. "Generally people pursue advanced degrees because they are associated with higher lifetime earnings and

better job security. However, policy makers and the public don't know if that is, in fact, true for people who attend for-profit colleges."

Graduate institutions don't have to report completion rates to the federal government, she said, or break out student loan repayment rates by level of education or loan program.

"While it may be true that attending for-profit colleges might not be good because of student debt and poor outcomes, the outcomes depend on what majors are being pursued," said Anthony Carnevale, a research professor and director of the Georgetown University Center on Education and the Workforce.

According to an analysis by Car-

nevale, the most popular major among black women who enroll in for-profit graduate degree programs was business administration and management, at 27 percent.

Meanwhile, the median earnings for black women with graduate degrees from any institution are $60,000 for business majors and $50,000 for education majors, according to the analysis.

Business Administration and Management, General	26.6%
Education, General	6.5%
Health/Health Care Administration/Management	4.3%
Registered Nursing/Registered Nurse	4.0%
Human Resources Management/Personnel Administration, General	3.8%
Business Administration, Management and Operations, Other	3.1%
Mental Health Counseling/Counselor	2.9%
Public Administration	2.7%
Educational Leadership and Administration, General	2.2%
Curriculum and Instruction	2.1%
Psychology, Other	2.0%

Source: Georgetown Center on Educat on and the Workforce analys s of Integrated Postsecondary Educat on Data System (IPEDS), 2014-2015.

Baum said the decision to pursue a for-profit graduate degree could be driven by convenience, since these are degree programs that also exist at public institutions.

"The reality is that master's degree programs by their nature enroll higher proportions of women, blacks, students from lower-income backgrounds and people who earn bachelor's degrees at older ages," said Steve Gunderson, president and chief executive officer of Career Education Colleges and Universities, the primary trade group for the for-profit sector.

"The reality is that many of the master's degree programs do not pay as well as those professional degree programs do as you get into those careers."

Gunderson used graduate degrees in education as an example, noting that K-12 teachers typically earn a master's degree, which improves their skills but doesn't put them in a higher salary range.

"One thing our sector is proud of is that we meet students where they are in daily life," Gunderson said. "We're much better at scheduling academic programming in ways that work with their schedule that often includes full-time jobs or children, and that has a big impact on whether they attend a traditional graduate program."

Some traditional graduate programs instead pride themselves on exclusivity rather than access, he said.

The flexibility also benefits employers who want their employees to continue working, said Baylor, but may offer a raise or promotion if the employee pursues a master's degree.

"Sure, you can say they chose this and they have bachelor's degrees, so they're in a good position to make this decision," Baum said. "But given the history of for-profit institutions -- the prices, debt levels associated with them and history of credibility in the labor market -- you have to at least question why this is a good decision for this group and not others." ■

https://www.insidehighered.com/news/2017/07/25/black-women-graduate-students-enroll-higher-numbers-profits

GradUCon and Beyond

By Colleen Flaherty // April 7, 2017

Institutions want to help their graduate students find meaningful work. Here's how the University of Chicago is doing it.

Some 500 graduate students and postdocs, along with faculty members, alumni and leaders from nonprofits, government and business will gather at the University of Chicago's International House today for its annual GradUCon. Like Comic-Con and other fan conventions, Chicago's event is meant for those who love academics -- but not necessarily those who want to be academics.

Why? Like every offering from the campus's UChicagoGRAD career support office, GradUCon purposely eschews the typical inside/outside academe binary: it will feature talks on everything from big data in the tech industry and careers in think tanks and museums to working at a liberal arts college and being a first-year faculty member.

In the past, said Brooke Noonan, executive director of UChicagoGRAD, "many Ph.D.s tended to seek out the academic career path as a no-brainer, but of course in the last eight to 10 years, we've really seen a shift in the job market. We want to make sure that the pursuit of getting a Ph.D. remains worthwhile, and to make sure that there's a fulfilling professional life at the other end of this path."

Past GradUCon at the University of Chicago

UChicagoGRAD debuted two years ago with that goal in mind and just a few staff members. The idea was to have a single office apart from the university's 11 independent graduate divisions and professional schools, to focus on the "flexible" career-readiness skills that students wouldn't necessarily be getting from their discipline-specific advisers. Those include written communication for a variety of contexts, video and in-person interviewing, grant writing, talking concisely but passionately about one's research, and other forms of public speaking. Adaptability is also key.

In addition to GradUCon, UChicagoGRAD offers a major job fair every year, a sort of matchmaking service between graduate students and paid internships, outreach to employers, workshops, advising, and other events.

"It turns out the skills needed to prepare for a successful careers in

the academy are not so different from the those pertaining to careers in other sectors," namely industry, nonprofits and government, Noonan said.

'A Swiss Army Knife of Skills'

Much of the work is about helping students realize they already have what they need for a variety of career paths, she added. "One of my favorite phrases, from a student we work with, is, 'I'm like a Swiss army knife of skills -- I just need to know which of the tools to bring out at the right time.'" In another example, an employer from a national lab involved with UChicagoGRAD said a Ph.D. he'd recently interviewed claimed she didn't have any management experience -- but she'd been running a lab.

Stephen Gray, who received his Ph.D. in psychology from Chicago last year, said interacting with career counselors and mock interviewers through UChicagoGRAD helped him land his current job as a consumer insights analyst at Facebook. Staff members helped him learn about the positions available to him as a cognitive experimental psychologist, create a résumé that highlighted skills that didn't immediately strike him as marketable -- such as computer programming, statistics and experimental design -- and negotiate an eventual offer.

"I found their assistance invaluable in learning how to speak about my strengths and put them into the context of solving a particular company's problems, and I definitely would not have my current position without their guidance," Gray said via email.

Regarding internships, the office started small, thinking it would be able to offer about a dozen paid positions to students with the help of some seed money. UChicagoGRAD had suggestions and connections -- including federal jobs through David Axelrod, a former adviser to President Obama and now director of the campus Institute of Politics -- but students were encouraged to seek out their own opportunities, as well. The only requirement, in part to appease faculty members concerned about students losing valuable summer research time, was that the internship had to somehow advance an applicant's research.

Some 70 applications streamed in, and, to the office's delight, placements were arranged for nearly all students, from the Musée d'Art Moderne in Paris to the Black Youth Project in Chicago. This summer approximately 100 students will be interning to advance their studies and professional prospects. Some organizations pay interns, while other students are funded through the university, grants or donations. Of course, having 100 summer internships is hardly surprising for an undergraduate institution or a STEM master's program. But for Ph.D. students, the number is notable.

UChicagoGRAD maintains a robust directory of fellowships, and students are encouraged to first visit the office for help seeking out and writing an application for one -- what Noonan called a "gateway drug" to other services.

Making It Work

Centralization was an immediate boon in that many students felt comfortable self-referring to seek out career advice that wasn't strictly academic. But staff members knew it might be a challenge in terms of recruiting additional students from so many separate divisions and professional schools.

So Noonan said the office worked hard to engage academic deans, in the hope that they would then promote its "credibility" to faculty members -- who would then refer students. In exchange, the deans demanded data as to the office's efforts and effectiveness, as even at a well-off institution such as Chicago, redundant programs aren't acceptable in today's budget climate. But the hard work has paid off.

The office is responsible for more than 9,000 master's and Ph.D. students on campus, plus postdocs, and last year it logged 7,400 "touch points," with an average of 2.5 engagements or visits per student or postdoc.

The office has seen buy-in from faculty members, too -- especially newer faculty members who understand firsthand the realities of today's job market, Noonan said. But even longer-serving faculty members -- who across academe stereotypically seek to "recreate" themselves (and their career paths) in the next generation of scholars -- have been supportive, and even grateful.

"What we've heard from senior faculty is that they just don't know how to go about helping graduate students find jobs at a consulting firm," for example, she said. "Sometimes if they disengage [from graduate students seeking non-faculty jobs], it's not for shame or disappointment, it's a lack of expertise in that field."

UChicagoGRAD falls under the purview of Sian Beilock, executive vice provost and Stella M. Rowley Professor of psychology. She, too, said she cared about the success of her graduate students who sought careers outside academe but could previously tell them little more than "Good luck."

The new office "sets up students to succeed no matter where they go," Beilock said. "They learn written and oral communication and other skills, and how to advocate for themselves successfully as academics, or in industry, nonprofits or government."

Gray, the alum, agreed, saying he knew within a few years of academic life that he wanted something different. But his academic advisers "didn't know how to help me, having spent their whole lives in the ivory tower."

In addition to faculty members and students, UChicagoGRAD also works to educate employers, "letting them know that we have an incredible talent pipeline," Noonan said. "We're going after sectors that may or may not historically have looked at Ph.D.s, one organization at a time, to demonstrate the power of research in problem solving and asking the right questions."

Beilock said she's been interested in hearing what employers have to say at some of the office's events, including that interviews in industry often start the way they do in academe: talk about your research. "Can you explain in an exciting and fluent manner what you're doing?" she recalled.

Staying Creative and 'Nimble'

One of Beilock's favorite office programs to date is something called "Expose Yourself!" Through "lab crawls" and pop-up lectures about how one's research relates to a given work at the Art Institute of Chicago, students are encouraged to talk about their research to those outside their fields -- including the general public.

Always open to new ideas, especially those from students, UChicagoGRAD is offering similar opportunities this spring at local cultural centers, retirement facilities and community colleges, said Kaitlyn Tucker, a Ph.D. candidate in Slavic languages and literatures and a student liaison to the project. "The hope is that giving students the opportunity to present their research to a variety of audiences will help them prepare for job talks, as well as improve their communication skills more broadly."

Asked if the office has had to work hard to convince some students to consider jobs outside academe, Beilock said alumni -- who are a big part of UChicagoGRAD -- are the most credible agents. "One of the best way to talk to students about that is to show them examples of successful peers who have been able to use their research skills in a variety of ways."

Emily Lynn Osborn, an associate professor of history at Chicago, said she appreciates how the office "opens doors" to students who don't plan on pursuing tenure-track jobs, or don't find one, or who simply want to challenge themselves "and explore how their skills and expertise as a historian might translate into different contexts and different kinds of work."

Whatever students plan on doing, Osborn said, the office helps her help them in that it offers workshops on topics such as the "nitty-gritty" of writing curricula vitae, and one-on-one professional counseling. Students who take advantage of those services come back to the department with a "firm foundation," she said, and "we can then really focus on matters that are content specific, that pertain specifically to field and discipline."

UChicagoGRAD has grown quickly but intentionally, to a team including career advisers, fellowship advisers, two executive directors, a director of diversity and development, part-time staff members who help with writing and editing requests, and more. It employs some graduate students, as peer consulting is a popular option.

"We've grown organically," said Noonan. "Our nimbleness -- or agility -- has been our secret weapon." ■

https://www.insidehighered.com/news/2017/04/07/how-university-chicago-helping-graduate-students-find-meaningful-careers

E.M.B.A.s Under Pressure

By Rick Seltzer // August 24, 2017

Executives, with financial support from their companies, once paid top dollar for special versions of the M.B.A. hosted by business schools at far-flung urban locations. Support is dwindling, and online competition growing, challenging what had been a source of revenue for some schools.

In 2013, the Olin Business School at Washington University in St. Louis stretched its executive M.B.A. program to the West for the second time in three years.

The business school at the private nonprofit university announced it would start offering its executive M.B.A. program, or E.M.B.A., in Denver in September of that year. The 20-month program would meet monthly in chunks of several days and be split into two halves – the first in Denver and the second on the campus of Washington University in St. Louis. It would also have an international residency in Shanghai. That mirrored what the business school was doing in Kansas City, Mo., where it had been offering an E.M.B.A. since 2010. It was a time when several top business schools were bringing in significant revenue through E.M.B.A. programs and some were opening new locations in cities away from their home campuses.

Fast-forward to today, and the business school is in the process of winding down both of its off-campus E.M.B.A. sites in the United States. In a letter sent to students earlier this year, Dean Mark Taylor wrote that administrators were "refocusing Olin's resources" and would no longer be offering the first year of its E.M.B.A. curriculum in Kansas City and Denver.

Ralph Nagel, a trustee at Washington University

"This was a difficult decision but one necessary as we look towards strengthening the business school in an ever-challenging higher education market," wrote Taylor, who started as the business school's dean in December.

Taylor sees the change as a way to refocus Olin's offerings on St. Louis and on international components in Shanghai and Mumbai, India. But it's also reflective of shifts in the market for E.M.B.A.s, degrees geared for professionals with several years of business experience who want to study in intensive chunks while keeping their jobs. The Olin Business School is not the only one to decide to close a program away from campus.

Traditionally, employers have often paid much of the cost of an E.M.B.A. But companies are becoming more reluctant to pay. Satellite campuses are also facing more competition from online learning, making it harder for university leaders to rationalize the expense of leasing space in faraway cities.

More broadly, some point to broad indicators showing a decline in U.S.

student interest in M.B.A. degrees of all types.

In the case of the Olin Business School, it was time to rethink physical delivery in the U.S., Taylor said in a recent interview. In addition to its home campus in St. Louis, the business school also sends E.M.B.A. students to Washington for an immersion program with the Brookings Institution that focuses on policy issues, government regulations, appropriation, budgeting and legislative action. It also has residencies in China, through a joint venture with the Fudan University School of Management, and Mumbai, at the Indian Institute of Technology.

"It's really about the broader trends, I think – thinking about the strategic direction of the school, thinking about international reach," said Taylor, a former dean of the business school at the University of Warwick in the United Kingdom before he joined the Olin Business School last year.

"Having three delivery points in the Midwest didn't seem consistent with our new sort of international strategic policy," Taylor said.

The Olin Business School still wants to be a part of the region, Taylor said. It's retaining a recruitment adviser to focus on bringing in students from Kansas City and Denver.

The business school currently reports about 10 E.M.B.A. students each in Denver and Kansas City. The last classes are expected to be held in the locations in January 2018. That timeline will allow current cohorts to complete most of their planned classes at the branch sites, but the Denver location closure will require some students to travel to St. Louis earlier than planned. Officials said "financial arrangements" had been made for those students but did not go into detail.

The two locations are much smaller than Olin's other locations. It typically has about 70 to 80 E.M.B.A. students per year in St. Louis. A Shanghai cohort recently started with about 65 students, and a Mumbai summer cohort totals 22 students. They were also small in comparison to the business school's other M.B.A. programs -- it reports 260 full-time M.B.A. candidates and 306 studying for a professional M.B.A.

Kansas City and Denver operations weren't offering the right mix of financial returns and experience for students – even though they were paying for themselves, Taylor indicated.

"They were washing their face," Taylor said. "There were financial issues we had to look at, obviously. But the financial implications weren't paramount. The strategic implications were the most important."

Online delivery for E.M.B.A. programs is also likely to grow, Taylor said. He added that students could still decide to attend in St. Louis during their first year.

The first half of the Olin Business School Programs in Denver and Kansas City had been scheduled with class days on Thursdays, Fridays and Saturdays about once a month in their respective cities. But residencies requiring travel were interspersed, and students had to travel to St. Louis for their second year.

"Once people think about the mode of delivery, coming to St. Louis occasionally from Kansas City and Denver on a part-time basis isn't that big a deal," Taylor said. "Some of the work can be done online. And also, we're going to want you to do some overseas placements anyway. It doesn't really matter where your base is."

The Olin Business School may have faced another challenge in the markets: price. When the school was opening its Denver program, *Poets & Quants* for Executives, a news website that covers executive M.B.A. programs, noted that it was more expensive than others already in the market.

"Washington [University] is coming into the Denver market with the highest price tag, 28.9 percent above the current price leader in the market and 44.8 percent more than Colorado State's offering," *Poets & Quants* wrote. "Washington's hefty $108,500 price, moreover, does not include airfare for an international residency in Shanghai, China."

At the time, the University of Colorado's 18-month program in Denver cost $65,000, a price that included travel and lodging for a nine-day international business trip and three-day retreat, *Poets & Quants* continued. Colorado State's 21-month program cost $59,940, which included airfare and lodging for a 10-day global immersion trip. And Daniels College's E.M.B.A., an 18-month program, cost $77,160, which included airfare and lodging for an international travel seminar and weekend retreat in San Diego.

The business school quotes the cost for its upcoming E.M.B.A. programs in St. Louis at $128,000. That includes hotels for four residencies but not air-

fare to Washington, D.C., and China, nor does it include lodging for class weekends.

Taylor named one other trend that was important in the Olin Business School's decision to end its E.M.B.A. programs in Denver and Kansas City – corporate sponsorship of students has declined dramatically in the last decade.

"We have something like 15 percent of our students on full sponsorship through their employers," he said. "It would have been two, three times that figure 10 or 15 years ago."

That phenomenon has also been noticed by Jeffrey R. Brown, dean at the College of Business at the University of Illinois at Urbana-Champaign. Brown announced earlier this year that the college was suspending enrollment in an E.M.B.A. program it operated in Chicago.

> "We have something like 15 percent of our students on full sponsorship through their employers. It would have been two, three times that figure 10 or 15 years ago."

Companies will still pay for executive education, Brown said. But fewer and fewer are willing to do so.

That was not, however, the only reason the College of Business at Illinois suspended its program. The E.M.B.A. in Chicago was always on the small side, Brown said – it had about 30 to 35 students per cohort for a total of about 70 students overall at any one time. A competitive market and improvements in online education combined to mean the program wasn't meeting financial objectives, Brown said.

On the other hand, Illinois launched an online M.B.A. program in January 2016. It recently started its fourth cohort and already has about 800 students enrolled.

"Now that there is an online alternative, geography is becoming less relevant," Brown said. "Today, I think a broader theme in all of this, as we look at removing geography as a barrier to education, is to what extent do universities really want to be spending on brick-and-mortar stuff anywhere?"

Even leasing space for an executive M.B.A. program can be expensive. Those programs tend to be set up in major metropolitan areas. And institutions also have to pay for faculty members to travel to the off-campus locations, or they have to hire locally.

"As more and more schools are trying to use technology and operate at scale, you will see fewer players with larger programs that are financially sustainable," Brown said. "Smaller regional players are going to find that they lose money when they end up getting into these markets, and then they end up exiting."

Chicago was a competitive market for the University of Illinois program. The market already had major established players in the M.B.A. space, like Northwestern University's Kellogg School of Management and the University of Chicago's Booth School of Business.

Theoretically, closing an off-campus business program should be easier than closing other types of programs. But it might not always work out that way, according to Brown.

"Even if people intellectually understand the business decision, there's a huge emotional element to this," Brown said. "The advantage that business schools have over some other disciplines is if we're doing our jobs well, our students really do understand the strategy and finance and so forth behind it."

Not every school will have to close off-campus E.M.B.A. sites, Brown said. About a dozen institutions have a good satellite-campus E.M.B.A. business model in place and have managed to operate effectively and at scale.

One well-known institution running an E.M.B.A. program far away from campus is the University of Pennsylvania's Wharton School. It operates an intensive 24-month E.M.B.A. program in San Francisco.

The program has been growing, according to Bernadette Birt, executive director. It has relocated for more space since she arrived in her role in 2010, with cohort sizes jumping from roughly 90 to 106.

"We're pleased with the market," she said. "Folks [are] trying to make signif-

icant moves within organizations and into new industries and into entrepreneurship ventures. The M.B.A. really sets them up to be more successful."

Of course, San Francisco's economy and talent market is very different from the rest of the country. More broadly, Birt acknowledged, the executive M.B.A. space is under pressure from changes in corporate sponsorships and employees who are managing their careers more independently, without feeling tied to individual employers.

The trends she, Brown and Taylor identified roughly align with those reported from the 2016 Application Trends Survey by the Graduate Management Admission Council, the owner of the Graduate Management Admission Test. Executive M.B.A. application volumes have been flat for several years, but a majority of E.M.B.A. programs reported growing volumes in 2016 for the first time since 2008, the survey found.

However, much of the increase appeared to be fueled by growing demand from applicants to programs in Europe and international candidates coming to the U.S. Only 43 percent of E.M.B.A. programs in the United States reported growing application volumes, while half said application volumes fell and 7 percent reported volumes were flat.

Since they are an effort to reach local working professionals, E.M.B.A. programs aren't likely to benefit from an upsurge in international interest.

U.S. residents are not taking the GMAT as frequently as they did several years ago. In 2016, 109,376 U.S. residents took the test, compared to 144,650 in 2012.

E.M.B.A. programs don't often require a student to take the GMAT. But some deans still view GMAT statistics as indicative of overall interest in master's-level business education.

Other forms of master's-level business education have been far from static of late. On Tuesday the University of Iowa's Tippie College of Business announced plans to phase out its full-time M.B.A. so that its final cohort will graduate in May 2019. In doing so, it joins other major institutions, like Wake Forest University and Virginia Tech, which in recent years have ended traditional full-time M.B.A. programs amid enrollment pressures and a desire to be more flexible for students.

Iowa said ending its full-time M.B.A. will allow it to focus on growing a part-time M.B.A. program and specialized programs. More than 90 percent of the business school's M.B.A. enrollment already comes from professional and executive programs.

Institutions respond to changing financial circumstances and market demand, said joyce gillie gossom, executive director of the National Association of Branch Campus Administrators. (She prefers not to use capital letters in her name.) Those responses include the opening and closing of off-campus locations like E.M.B.A. sites.

"The demand is there, the demand is met by that institution, and the demand is gone," she said. "And it doesn't make sense for you to maintain the presence where there is no demand."

Other factors can be at play, too. All too often, branches expand and contract based on circumstances controlled by administrators on a home campus instead of on their value, gossom said. A dean could decide they dislike having faculty members teaching away from campus. Revenue could drop, making the off-site location less attractive financially.

Online programs and platforms have been another source of pressure in recent years, gossom said. But she warned that many students who attend branch locations are older and less comfortable taking online courses.

"They want someone they can see and talk with and interact with and stay after class with and ask questions," she said. "They want to be able to create study groups with their fellow students and talk through class assignments."

U.S.-based full- and part-time E.M.B.A. enrollment declined over a five-year period ending in 2015-16, according to statistics from the Association to Advance Collegiate Schools of Business. E.M.B.A. enrollment totaled 3,988 in 2011-12 and had slipped to 3,605 in 2015-16.

But the statistics reflect a small sample of 55 institutions that chose to report details on E.M.B.A. programs over that five-year period. AACSB warned against generalizing the findings across the field as a whole. ■

https://www.insidehighered.com/news/2017/08/24/deans-see-challenges-campus-emba-programs-united-states

What Comes After Whittier Shutdown?

By Rick Seltzer // April 25, 2017

Plans to close law school spark questions about future closures and worries about impact on student access.

Whittier Law School's enrollment trends over the last five years reflect the pressures squeezing legal education across the country.

Total enrollment at the law school in Orange County, Calif., fell by more than 40 percent since 2011, from 700 students to fewer than 400 this year. Enrollment dropped as students' interest in studying law plunged across the country -- and as heightened scrutiny forced many law schools to pay more attention to their students' job-placement and bar-passage rates.

Administrators at Whittier were trying to cut the size of the law school in order to find a new balancing point, said Sharon Herzberger, the president of the law school's owner, Whittier College. They wanted to admit enough students to keep the law school financially sustainable, but also to increase selectivity so they were admitting students with a greater chance of succeeding. And they were working to do so even as the number of applications to law schools shrank.

"The enrollment has declined sometimes because of what's going on in the world and the choices of people to come to the school," Herzberger said. "And sometimes because of our desire to keep the enrollment down and make sure we're bringing in students that we feel have the capability of doing well."

That attempted balancing act ended last week, when Whittier College's Board of Trustees announced that the law school will not enroll any new students. Current law students will be able to complete their degrees, although the exact details of that process are not yet set. Whittier Law School will close.

The decision vaulted Whittier into the national spotlight. The law school will be the first with full American Bar Association accreditation to close in recent memory. Its accreditation dates to 1985, and it was founded in 1966, so it does not fit the profile of a new, unestablished institution that might be expected to shutter under normal circumstances.

Consequently, some experts believe other schools are likely to follow Whittier Law in closing. Critics of legal education argue that the country still has too many law schools that do not

prepare their students for legal careers and instead leave them with high levels of debt they will be unable to repay. Others retort that the number of law schools truly in danger of closing is relatively small, with estimates ranging from 10 to 25 across the country.

Others worried that the closure of Whittier Law School takes away an important option from groups of minority and women students who are already underrepresented in the legal field. Those students often go on to practice law locally, so closing Whittier law school deprives nearby communities of important services, they said.

Whittier College tried to find ways to keep the law school open, according to Herzberger. Administrators offered faculty members voluntary separation agreements last year, the college president said. They discussed merging the law school with other institutions and talked with others that showed interest in operating it.

"Over the last couple of years, the board really looked at lots of different things," Herzberger said. "Nothing really came to fruition, and the board felt that we should not continue to invite students to enter the law school, that it really wasn't the fair thing to do."

Decisions were complicated by the fact that the law school's main campus has been separate from the college's main campus in Whittier since 1997. The two locations lie about 30 miles apart, making it harder to share services between them or govern them as a single institution.

Whittier College ultimately struck a deal to sell the 14 acres of land on which the law school sits for $35 million. The land is the largest parcel in the Costa Mesa area that was relatively undeveloped, Herzberger said. It was purchased by a Chinese investment group, she added, declining to share additional details because of nondisclosure agreements.

Gilbert Holmes

Law school faculty members sought to block the announcement of the closure, filing in court for a temporary restraining order, which a judge denied. They claimed in court filings that the college sold the law school land at a profit of $13 million and sought to "cut and run" with the money. They also argued in the filings that Whittier College leaders did not follow proper procedures for closing the law school because they had not taken faculty opinion at the law school and college into account.

Those characterizations are not accurate, Herzberger said. Whittier's administration asked faculty members whether the law program could be discontinued. Faculty members returned with reports that did not agree with the idea of closure, Herzberger said. But the Board of Trustees still was not convinced the law school should continue in the future.

The law school has not operated at a deficit in recent years, except for when it was buying out faculty contracts, the president said. However, projections showed it would run deficits after this year.

Leaders considered relocating the law school but decided against it. The law school draws many students from near its campus, Herzberger said. Whittier's main campus does not have any room, she added.

The college's decision-making process might have played out differently if the law school hadn't been on a separate campus, Herzberger said.

"It did not help," Herzberger said. "We could not take advantage of each other."

The faculty members who attempted to stop the closure from being announced are not backing down. They are considering further litigation, according to the lawyer representing them, Hanna Chandoo, an associate at the law firm Stris & Maher LLP and a 2015 Whittier Law School graduate.

"Now that the announcement happened and we were able to see the way it happened, it was irresponsible," she said. "It was sudden. There was no plan. It's been devastating for many stakeholders: admitted students, current students, alums, faculty, staff."

The National Landscape

Observers of legal education said

the situation at Whittier Law School fits with the trends that have been sweeping the field. At a basic level, there is sharply less interest today in the education law schools are offering than there was a decade ago, said Christopher Chapman, president and chief executive officer of AccessLex Institute, a former student loan provider that is now a nonprofit organization conducting research on legal education issues.

Law schools also face new accreditation pressure. The American Bar Association has taken action against four law schools in the last year over issues including loose admissions policies and low bar-examination passage rates.

The pressures could push less prestigious law schools into a death spiral. Their applicant pools are declining, and their top students often transfer to better-known institutions. As a result, they can lose the students they admit who are most likely to pass the bar. That can make it harder for them to increase their bar-passage rates over time, which in turn cuts down on their applicant pools and drives their best students to transfer -- continuing the spiral.

Shocks like additional accreditation pressure could lead to more changes in the law school sector, Chapman said. But he stopped short of predicting a wave of closures.

"I think closing is fairly drastic," he said. "It's at one end of the spectrum. We've seen some mergers, some combinations. I think maybe you'll see more collaborations where schools don't close, but there might be sharing of facilities or faculty or something like that."

Other moves in the legal education sector of late include William Mitchell College of Law and Hamline University School of Law, in St. Paul, Minn., deciding to merge in 2015. Indiana Tech Law School in Fort Wayne this fall announced plans to close in June 2017. Administrators at that law school, which opened its doors in 2013 and had provisional ABA accreditation, said it had incurred an operating loss of nearly $20 million in its brief existence and they could see no way to attract enough students to be viable in the future.

> "Instead of giving a new administration time to improve outcomes, they decided to discontinue us, and I think it's very difficult to avoid the conclusion that it was done to be able to use those resources for different purposes."

Speculation also surrounds the future of the for-profit Charlotte School of Law in North Carolina after it lost access to federal financial aid over U.S. Department of Education concerns about accreditation problems and misrepresentations made to students.

Financial issues have played a role in strife at public law schools as well. The University of Cincinnati placed the dean of its College of Law on administrative leave last month after she said her efforts to close a deficit had upset faculty members. The dean, Jennifer Bard, sued the university Friday, with her lawyers alleging a breach of contract and violations of her constitutional rights.

It should be pointed out that a college or university could consider closing its law school for reasons beyond finances or accreditation.

Operating a successful law school can add to a college or university's standing, giving it access to a new set of wealthy donors and helping it build a powerful alumni base. But struggling law schools can hurt a college or university's prestige.

"It's a reputation thing," said William Henderson, a professor of law at Indiana University's Maurer School of Law. "Bad employment outcomes, high debt and low bar-passage rates – that affects the university and how it's perceived in a marketplace."

Yet the national trends are one thing. How they play out locally is another.

Whittier students, faculty members and alumni have resisted the closure of the school. The law school has posted notes from unhappy alumni on its website. Students protested the pending shutdown Friday.

They were devastated to hear Whittier College's president and board announce the closure of the law school with finals fast approaching, said Radha Pathak, an associate professor of

law and the associate dean of student and alumni engagement at Whittier Law School.

Pathak does not believe the decision to close the law school is being driven by large trends sweeping legal education, she said in an interview. She thinks it is a way for the college to redirect its financial resources.

"We are a school that has almost always generated a surplus," she said. "Next year, however, we were going to be incurring a deficit. And so instead of giving a new administration time to improve outcomes, they decided to discontinue us, and I think it's very difficult to avoid the conclusion that it was done to be able to use those resources for different purposes."

Pathak recognizes the national skepticism about the value of law schools. But she contends that Whittier Law School is serving students who would otherwise not have access to a legal education.

Minority students make up almost 60 percent of Whittier Law School's enrollment. Its student body is also 60 percent women.

"We are providing a high-quality legal education to our students, and some of our students wouldn't have the opportunity to attend another ABA-accredited law school," Pathak said. "And those students are doing amazing things when they move on."

Still, it should be noted that Whittier's bar-passage rate has significantly lagged that of other California law schools. Just 22 percent of its students taking the California bar examination for the first time in July 2016 passed. That was almost 40 percentage points below the passage rate across all of the state's ABA-accredited institutions.

Pathak acknowledged that many of Whittier Law School's students need multiple chances to pass the bar. But she said that does not detract from their accomplishments or legal education.

Critics argue such a low passage rate means the law school is not, in fact, helping most of its students.

> "Bad employment outcomes, high debt and low bar-passage rates -- that affects the university and how it's perceived in a marketplace."

Kyle McEntee is the executive director of the nonprofit group Law School Transparency. He acknowledged that a school like Whittier can offer access to students.

"But does the school serve them?" McEntee said. "There's good they do, and there's bad they do, and you hope the good outweighs the bad. But I don't see the argument holding weight with Whittier, and it seems the Board of Trustees agrees."

McEntee predicts more law schools will close. But he said it's difficult to say for sure because local factors can have a major effect on college and university leaders' decisions.

Another Southern California institution stands as a contrast to the decision to close Whittier Law School. The University of La Verne College of Law is not producing a surplus. It's been losing money for about five years. But university leaders say they are on their way to changing that after they overhauled tuition practices in 2014.

The La Verne College of Law broke with the norm of offering deep tuition discounts to attract top students. Instead, it decided to charge students a flat price and lock in their tuition for three years.

Leaders put that model in place because of swirling questions about the cost-benefit analysis students make when deciding to attend law school. Many thought a lack of transparency in law school prices and outcomes was leading to rising and unpredictable student debt levels. The new idea at La Verne is that a student can count on a set price over three years and project their debt upon graduation.

The law school is moving toward becoming revenue positive, said La Verne's president, Devorah Lieberman. She acknowledged that the closure of the Whittier Law School could affect La Verne.

"I just think it means that the rest of us who have law schools in the region need to continue to focus on serving those students," she said.

It's hard to say exactly how, though. Law school closures have been so rare that the effects of this one will be unpredictable, according to the La Verne College of Law's dean, Gilbert Holmes.

"That might enable us to be a little more selective in our admissions," he said. "But the primary thing we need to think about is the communities that may find themselves not served as well, because they have potentially fewer lawyers to serve them."

Across the country, the law schools that are mostly likely in danger of closing tend to produce graduates who go on to work as solo practitioners or in small firms, said Michael Olivas, the chair of law at the University of Houston Law Center, who served as president of the Association of American Law Schools in 2011.

That means low- and middle-income residents in the area will have fewer lawyers available than they otherwise would.

What is up for debate is whether or not that's a good thing. As with many of the issues swirling around law schools, the answers to the debate depend on how you weigh different factors.

Closing a law school hurts some students, faculty members and area residents. It could theoretically help some students who would not have been served well by the institution. Closing a law school can help a college or university if that law school had been a drag on its operations.

"If it means schools that have no chance of meeting their obligations are dying or being put to death, then I would say the system is working," Olivas said. "Notwithstanding the pain and struggle the faculty and staff and students at the institution are encountering."

Even many optimistic law school admissions officers appear receptive to the idea of closings.

A fall 2016 survey from Kaplan Test Prep of officers at 111 of the 205 ABA-accredited law schools in the country found that 92 percent said they were feeling more optimistic about the state of legal education than they had been a year ago.

Even so, 65 percent agreed with the statement that "it would be a good idea if at least a few law schools closed." ■

https://www.insidehighered.com/news/2017/08/24/deans-see-challenges-campus-emba-programs-united-states

Shaking Up Law School Admissions

By Scott Jaschik // August 8, 2017

Georgetown and Northwestern announce they will accept GRE, not just LSAT. But ABA may move in ways that limit the option and that some fear would impede diversity efforts.

Harvard Law School announced in March that it would start to accept the Graduate Record Examination for admissions, not just the traditionally required Law School Admission Test. At the time, only one other law school -- the University of Arizona's -- had such a policy. Many wondered if the move by Harvard, given its stature in legal education, would prompt others to follow.

That question may have been answered Monday, when the law schools of both Georgetown and Northwestern Universities announced that they too would now accept the GRE, a test from the Educational Testing Service. Both Georgetown and Northwestern are highly regarded law schools and have no shortage of applicants.

But even as the announcements give momentum to the test-choice movement, they come at a time when the American Bar Association may clamp down on such experimentation. Currently the ABA requires law schools to either use the LSAT or another test the law school has determined to have "validity" in predicting student success. Arizona, Georgetown, Harvard and Northwestern all say that they have done such studies, and so comply with ABA rules.

The ABA is, however, considering a rules change that would permit law schools to use alternatives to the LSAT only if the ABA has determined the validity of the alternative test -- something the ABA has yet to do with any test besides the LSAT. And many law deans -- including some who have not moved beyond the LSAT -- are angry that the ABA (with backing from the Law School Admission Council, which runs the LSAT) may limit their options going forward.

The Tests

While the LSAT was designed for use in law school admissions, it may have left itself open to challenge because its sections -- on reading comprehension, analytical reasoning, logical reasoning and writing -- are not at all specific to the law or legal education. Similarly, the GRE is used in a range of fields, many of which require extensive communication, reasoning and

other skills that are important to law schools. (The GRE also tests mathematics, which is not covered by the LSAT, and which some proponents of the GRE argue is important for all professionals.)

Some law school admissions leaders see the GRE as a way to attract applicants who might be considering other forms of graduate education, and may be intrigued by law school, but who don't want prepare for another test.

Many have seen the GRE historically as more "friendly" to test takers on logistics. The LSAT has recently added times that one can take the exam, but it remains easier for people to find a time and place to take the GRE.

Jeff Thomas is executive director of pre-law programs at Kaplan, which has services both for those preparing for the GRE and the LSAT. He said that he believes the GRE has "forced the hand" of the LSAT, making it a bit more flexible. "And students benefit from having more freedom," he said.

The announcements from Northwestern and Georgetown show that the push for more options on testing has momentum. "The ball is rolling down the hill," he said.

At the same time, he cautioned against assuming a massive change in test-taking patterns in the near term. Some prospective law students are looking at a bunch of highly ranked law schools. If a few more add the GRE option, some may pick only those law schools, he said.

But many prospective students apply with geography in mind, he said. They live in Chicago or Washington, or have decided they want to build their careers there, and will apply to several law schools in a single metro area. These applicants are unlikely to stop taking the LSAT until there is a critical mass of law schools in a region that don't require it, he said.

The popular legal blog *Above the Law* also sees significance in the moves announced Monday.

"Is it time for the LSAC, the entity that's held a monopoly on law school admissions testing for years, to start freaking out yet? The answer, of course, is yes," Joe Patrice wrote in a Monday post. "The LSAT monopoly over law school admissions was, like most monopolies, fraught with inefficiencies. There aren't enough testing centers? Who cares, we're a monopoly! There aren't enough administrations throughout the year? Who cares, we're a monopoly!"

Kellye Y. Testy, the new president and CEO of the LSAC and former dean of the law school at the University of Washington, said the news from Georgetown and Northwestern was "of concern to us."

"We believe in innovation and experimentation and certainly anything that would open access and improve legal education and the profession," she said. "But we are concerned with how quickly schools are jumping to the GRE without any reliable studies of what it means." She said that the validity studies that the law schools have cited are "small," and "we would like them to take a little more time to study what this means."

She said the LSAC was open to changing the LSAT in response to concerns of law school leaders. Asked about the GRE mathematics section, she said that "if it's mathematics that people feel that they need, it's something we could test."

Testy also said that the current system assures quality control, and that applicants find out from the test if they can succeed in law school. All of the law schools that conducted validity studies to start offering a GRE option said that was specifically the question they examined, and that they found GRE scores are as good or better than the LSAT at predicting student success.

The ABA's Possible Rules Changes

The ABA's various governing bodies may consider the rules change this fall. ABA's governance process is not known for its speed, so it could be years before anything is in place -- enough time for more law schools to start admitting students with the GRE. The current ABA proposal does not have a grandfather clause but could be amended to add one.

Many law deans have written to the ABA to oppose the rules change. Some say that law schools need to reconsider their use of standardized tests in general, and that reliance on tests limits efforts to diversify law schools.

"The requirement of a standardized admissions test negatively

impacts efforts to diversify the profession," says a letter submitted by the deans of law at George Washington University; Northwestern; the University of Arizona; the University of California, Irvine; the University of Southern California; and the University of Texas.

"The many law schools attentive to rankings by *U.S. News* routinely wait-list or deny admission to students who the school believes can succeed in the educational program and pass the bar exam.

In fact, many of these students' admission test scores are -- in predictive terms -- indistinguishable from applicants who are admitted. And many of these students are diverse along any measurement of diversity.

But the heavy weight put on these test scores by *U.S. News* inhibits the ability to admit these students for fear of harming the law school's rankings."

> "Is it time for the LSAC, the entity that's held a monopoly on law school admissions testing for years, to start freaking out yet? The answer, of course, is yes."

The letter also says that the rule would limit experimentation on testing started by some law schools. "The proposed standard is exceedingly opaque, and rather than encouraging innovation, stifles it."

Other letters submitted by deans noted that many admissions processes at law schools vary from institution to institution and reflect different missions. Why, these letters ask, must standardized testing be standardized with the LSAT?

One group urging the ABA to make the rules change is the LSAC.

Testy, the group's new president, denied that the council was trying to squelch competition. "We're all for choice and for using reliable and good instruments to measure" applicants, she said.

But she said that there was a concern that applicants "are understanding what they should be doing," and can get a true sense of whether they will succeed in law school. "We want to make sure we're fair to applicants."

Asked if she was saying that Harvard Law School can't be trusted to admit a class of students using either the LSAT or the GRE, Testy said, "Sure they can. And a student who has the kind of background and educational opportunity that a Harvard law student has will succeed." But she added that "all the schools aren't Harvard." ■

https://www.insidehighered.com/news/2017/08/08/georgetown-and-northwestern-law-schools-announce-they-will-accept-gre-not-just-lsat

Become a Doctor, No Lectures Required

By Carl Straumsheim // September 26, 2016

U of Vermont's College of Medicine announces it will get rid of lecture courses and completely reshape the faculty role -- a first for a traditional medical school.

Four years after two senior academics at Stanford University challenged medical schools to stop lecturing and start flipping their classrooms, major reforms at underway at a handful of colleges to change the way they teach medicine.

The University of Vermont last week became the most recent institution to join the trend, announcing a pedagogical reform in its College of Medicine that observers say is the most sweeping yet. The college will over the next several years remove all lecture courses, replacing them with videos students watch on their own time. And instead of sitting through lectures, students will meet in "active learning" classrooms, led by faculty members, working with their classmates in small groups.

"We teach evidence-based medicine all the time," William Jeffries, senior associate dean for medical education at UVM, said in an interview.

An instructor at the U. of Vermont Robert Larner, M.D. College of Medicine teaches in an 'active classroom.'

"If you have the evidence to show one treatment is better than the other, you would naturally use that treatment. So if we know that there are methods superior to lecturing, why are we lecturing at all?"

The approach builds on experiments at Stanford, which has worked with Khan Academy to test a flipped classroom model in certain medicine courses. Other institutions have taken that model a step further. The Touro College of Osteopathic Medicine in New York, for example, has since the 2012-13 academic offered an entirely flipped curriculum.

UVM's announcement, however, marks the first time a member of the Association of American Medical Colleges has declared it will

abolish lectures across all its programs, Lisa Howley, the organization's senior director of educational affairs, said in an interview.

"What we know about learning in general is different than it was decades ago," Howley said. "Our medical students are of a generation that has grown up differently when it comes to technology and the impact that has on their ability to receive and retain information."

But moving away from how medical schools have trained new physicians for centuries is no easy task. Major curricular changes could jeopardize the schools' regional and professional accreditation statuses, repel prospective students, offend alumni donors and alienate some faculty members, to mention just a few.

The most pressing concern, Jeffries said, is also the simplest: money. "Most schools do not have the resources to 'turn the battleship around," he said.

UVM will put a $66 million gift, announced Friday, toward building renovating classrooms and retraining faculty members. It has also renamed its College of Medicine in honor of the donor, alumnus and retired physician Robert Larner.

The college will spend part of the gift on expanding its Teaching Academy, founded last year. Faculty members in the College of Medicine join the academy for three- to five-year periods, during which they are mentored by more experienced instructors, attend conferences and workshops, and complete self-paced courses, among other activities.

The overarching goal of the academy, Jeffries said, is to help faculty members discover teaching methods that can be as rewarding -- if not more so -- than lecturing.

"That internal oomph or dopamine release that you get when you lecture and are the center of attention is a barrier to converting faculty over," Jeffries said. "What we need to do is ensure they have the time and support to develop alternative ways of teaching."

The most powerful tool the med school has to win faculty members over is that they are "scientists at heart" and "understand the evidence" suggesting students in flipped classrooms perform better than students in lecture courses, Jeffries said. At Touro, for example, the pass rate on an important licensing exam has climbed to above 95 percent -- higher than the national average -- since the college flipped its curriculum.

About 80 faculty members joined the Vermont academy when it first opened, but the College of Medicine has a long way to go before the faculty is prepared to teach in the new classrooms. The med school has more than 700 faculty members in total.

The transition to an all-flipped model at UVM has already begun, and the university plans to complete it by 2022, Jeffries said. Lecture courses now make up a minority of the college's foundational curriculum -- about 40 percent, down from 50 percent two years ago. The first semester courses have already been redesigned into a series of connected components, and the college plans to pour over data collected from them during a curricular retreat in February, where administrators and faculty members will produce a strategic five-year plan.

There are some major unanswered questions facing UVM, including what an education at the college will look like in 2022, how much time students will spend in the classroom and how faculty members will respond to their roles changing from lecturing to facilitating. Jeffries said he expects some of those details will be settled during the February retreat, while other pieces will fall into place as the medical school transitions away from lectures.

"A lot of this is a great unknown to us," Jeffries said. "We are starting an evolutionary process in making this initial commitment ... to formulate a new model." ■

https://www.insidehighered.com/news/2016/09/26/u-vermont-medical-school-get-rid-all-lecture-courses

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