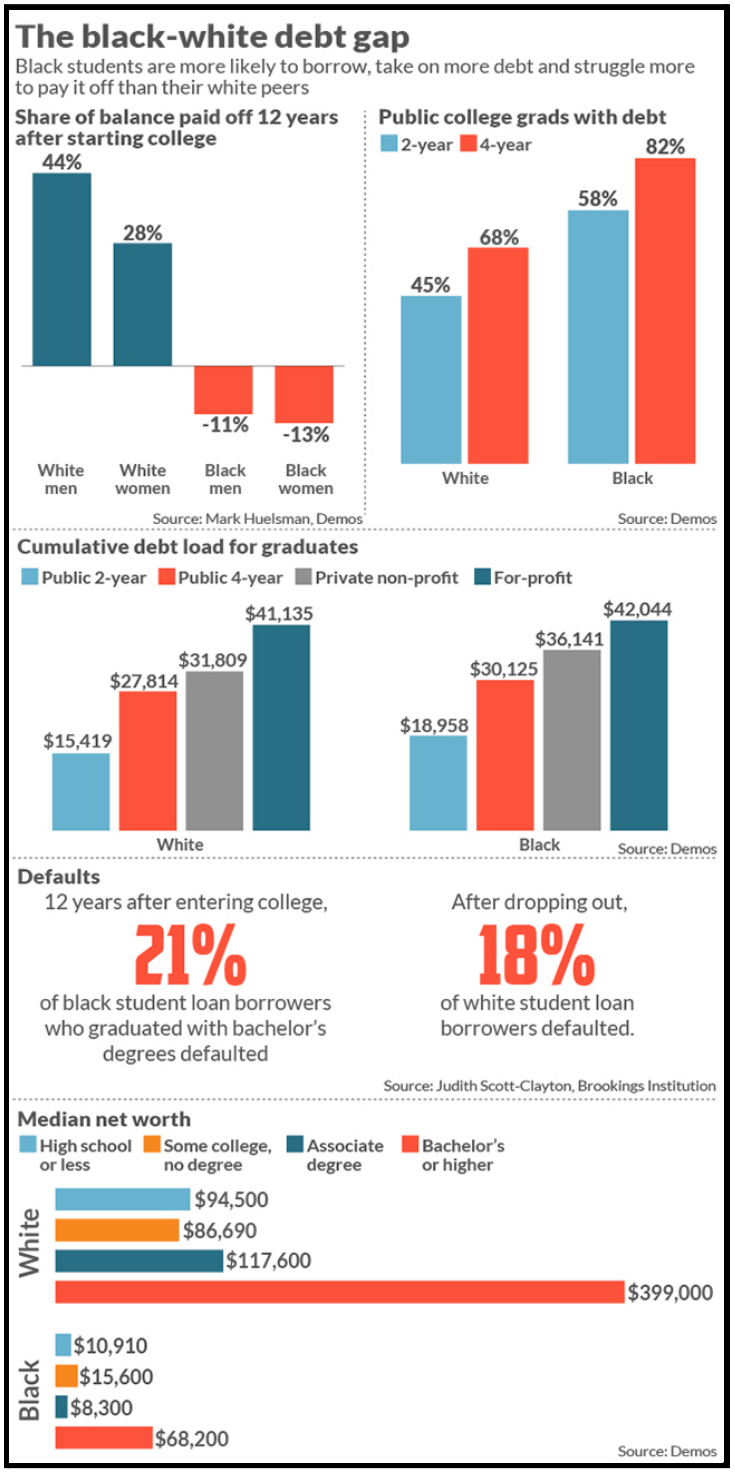
ELIMINATE FAMILY WEALTH AS A FACTOR IN GRADUATE STUDENT ADMISSIONS

Categories of the reform idea (keywords):
Equity (Main), diversity, admissions and retention.

Problem:
Attending graduate school is economically infeasible unless you belong to a relatively rich household. It is in general a privilege for students who have enough family wealth to afford the opportunity cost of attending graduate school. Since familial wealth in the United States is highly inequitable from a racial context, the near term economic disadvantages of a graduate education discourage URM students from even considering graduate school as an option [2]. For example, many undergraduate URM students experience family pressure to quickly get a job afterwards, as there can often be familial financial needs that strongly bias URM students towards immediately going to industry, instead of considering going to graduate school - because of the difference in pay. Therefore MIT doesn't pick from a pool of the most talented candidates, MIT picks from a pool of **talented and relatively wealthy** candidates. While the goal of getting a graduate degree is not just to earn money, but to also develop knowledge and advance science, the current system of graduate student compensation denies that opportunity to knowledge and advancement to those who come from economically unstable backgrounds, which due to centuries of discrimination in the United States is a large majority of URM students.



Proposed reform:
Make graduate students stipends competitive with the incomes that students could otherwise earn in an industry position after a bachelor's degree. By doing this we can alleviate the financial de-incentivization of graduate school

which disproportionately affects students of color and students from under-represented minority communities.

Metrics to track:

- Application rates from URM candidates after the measure has been implemented.
    - I expect application rates to go up as the reform would make graduate school a more viable option for URM students who come from difficult financial backgrounds.
- Overall quality of applications (Application score provided by admissions committee)
    - This metric could go either way as making graduate school more attractive financially could incentivize folks who are either more qualified or less qualified to apply. But monitoring this would be good to inform similar reforms in the future.
- Number of admitted URM candidates after the measure has been implemented.
    - I expect the number of admitted candidates to go up as again, we are incentivizing applying to graduate school.

Cost estimates:

- 25th percentile income for a mechanical engineer: $70k.
- Current stipend 40,000$/year.
- Number of graduate students in Mechanical Engineering ≈ 500
- Total additional cost per year ≈ 500 students * $30,000 ≈ 15M/year (assumption that overheads don't need to scale)

Implementation strategy:

- While rolling out this plan could be done in phases, the department has to decide whether it would be fundamentally unfair to have different students compensated differently based on their need. Need based financial scholarships allows underprivileged students to pay less for an undergraduate degree but in that case, the student isn't being paid, she/he is being spared a cost.
- If rolled out to the entire grad student population, the department needs to decide who takes the financial burden, individual PIs and sponsors or the department itself.
- Once the funds are raised via the appropriate sources, the program must be publicized to colleges around the United states and be published in news articles so that underprivileged students know of the opportunities MIT can provide.
- Checkpoints: The biggest improvements in metrics are expected in years 1-5 after implementation. If the metrics are not greatly improved by then, we could decide that the funds for this program are better used elsewhere.

Values targeted:

Establishing equity and embracing diversity.

References and analogies:

Inequity in students graduating with an undergraduate degree.
https://pnpi.org/first-generation-students/

1. 42% of Black students and 48% of Latino students are first generation students
2. The median family income for first-generation freshmen at two- and four-year institutions was $37,565, compared to $99,635 for continuing-generation freshmen.

Why finances matter more to Black undergraduates making the decision about pursuing graduate degrees.

3. https://www.marketwatch.com/story/all-the-ways-student-debt-is-exacerbating-racial-inequality-its-like-landing-in-quick-sand-one-black-student-says-2019-07-18
4. Current median and percentile wise incomes for mechanical engineers (this includes all MEs), I used the 25th percentile to estimate salaries for students coming out with a bachelor's degree from a top institution https://www.bls.gov/oes/current/oes172141.htm
5. Analogy: A lot of talented college athlete's quickly go pro after 1 year in college as near term financial gain/stability is incredibly more attractive than a 4 year college education. Graduate school currently operates under a similar paradigm for a lot of underprivileged students, a luxury a lot of students can't afford.
6. Grad students in Zurich earn 4200 Swiss Francs per month. Grad students at MIT earn $3283/month. Accounting for cost of living, swiss grad students are paid about 622$/ month (7464$ / yr approximately) more so even without this measure, we are still not competitive, even with current rates and compensation.
   https://www.numbeo.com/cost-of-living/compare_cities.jsp?country1=United+States&city1=Boston%2C+MA&country2=Switzerland&city2=Zurich&amount=3283&displayCurrency=USD