

Senator Charles E. Grassley

Questions for the Record

David Skorton, President, Cornell University

1. I am pleased this country serves as a beacon for foreign students to attend our many prestigious and exceptional universities. However, I am concerned that with a growing number of international students coming to the United States to study it will have a negative, crowding out effect on American students.
 - a. Can you describe the process for which Cornell University decides the admittance ratio or quota for foreign students versus American students?

Cornell University does not have quotas or set ratios for international students in any of our undergraduate, graduate, or professional programs. That being said, international students are welcome at Cornell and have been an integral part of the student body since the first class in 1868.

Admission to Cornell is very competitive. At the undergraduate level, we received 36,338 applications for the 3,229 slots in the class of 2014. Of those, 248 (7.7 percent) are international students. Our admission policy is “need-blind” for all applicants, which means a student’s ability to pay is not a factor in the decision to admit. This ensures that wealthy applicants – regardless of nationality – do not receive preferential treatment over prospective students of more modest means.

International undergraduates follow the same application process as American first-year and transfer students, and must take the SAT or ACT with writing and SAT Subject Tests in addition to any national tests administered by their home countries. We also require international students to submit a Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) score. Cornell will waive this requirement for students who score at least 670 on the Critical Reading section of the SAT or those who have studied at least four years in the U.S. or another nation where English is an official language. All transcripts must

be official and must be translated into English for consideration. We do not allow students to use paid agents or credentialing services to complete their applications for them. The use of such services violates University policy, and may lead to the rejection of application materials, the revocation of an admissions offer, cancellation of admission, or involuntary withdrawal from the University.

Cornell offers financial aid to a limited number of international undergraduate students, based on demonstrated financial need. In addition to institutional aid from university funds, we have scholarships that are targeted to students from particular countries, including (but not limited to) the Cornell Club of Hong Kong Scholarship, the Robert and Wendy Purcell Scholarship for students from the Philippines and Thailand, and the Tata Scholarships for students from India. All financial aid decisions are determined after admission decisions are made. Criteria include academic excellence, geographic diversity, and potential for campus participation and/or leadership.

Similar to the undergraduate admissions process, international applicants to Cornell's graduate and professional programs must meet the same criteria as U.S. applicants. In addition to a bachelor's degree or equivalent from an accredited or officially recognized college or university, international students must take the same graduate admissions exams (GRE, LSAT, MCAT, GMAT) as U.S. students. All transcripts, diplomas, or academic records must be official documents issued by the college or university and provided in the original language, and must include a certified English translation if the original language is not English. International Graduate and professional applicants must also submit TOEFL or ILETS scores. International students make up 35 percent of our total graduate and professional student population. In some disciplines, this percentage is much higher.

b. What can be done to ensure those American students are not crowded out of high skilled degree programs?

Cornell University is committed to excellence in education and research and sets the highest standards for our undergraduate, graduate, and professional students. We cannot lower our admissions requirements if we hope to retain our position as one of the top universities in the world. The biggest challenges in attracting American students to enter high-skilled STEM disciplines are first, creating and sustaining the interest from a young age and then, ensuring that interested students have the skills to succeed in a competitive academic environment.

From my work with the Business Higher Education Forum (BHEF), an organization of Fortune 500 CEOs, college and university presidents, and foundation leaders working to advance innovative solutions to our nation's education challenges in

order to enhance U.S. competitiveness, I know that one of the biggest barriers to success for U.S. students in the STEM disciplines is a lack of quality math and science teachers in our elementary and secondary schools. The BHEF's report on this subject, *An American Imperative: Transforming the Recruitment, Retention, and Renewal Of Our Nation's Mathematics and Science Teaching Workforce*, which provides an extensive analysis of the issue, is located at:

<http://www.bhef.com/solutions/stem/americanimperative.asp>

This is not a problem with a quick fix, and requires a sustained commitment of resources from federal, state, and local governments at a time when these budgets are stretched to the breaking point. As I mentioned in my testimony, reauthorization of the COMPETES Act – with its emphasis on teacher training – last December is a giant first step in this process. The goal set out in COMPETES, to train a critical mass of new math and science teachers, cannot be accomplished, however, without adequate funding.

As the land grant university of New York State, Cornell is committed to outreach, and has developed extensive programming to capture students' interest in STEM subjects and to help math and science teachers in the classroom. Much of this outreach is federally funded through research grants from the NSF and other research agencies, and through the USDA's Smith-Lever program, which provides support for the Cornell Cooperative Extension system. Our outreach programs include 4-H youth development programs focusing on health, plants and animals, science, environmental awareness, and career exploration; classroom visits, field trips, and afterschool programming for P-12 students; and curriculum development, teacher training and continuing education programs, and lending libraries for math and science teachers. An extensive list of these activities can be found at:

<http://www.cornell.edu/outreach/>

2. In your testimony you state, “[c]ontrary to concerns expressed by critics, there are not enough qualified or interested American students to fill the slots in STEM undergraduate and graduate programs.”

- a. Do you believe there is a correlation between lack of interest by American students in the STEM field and current trends of companies favoring foreign workers?

I don't think employers intentionally favor foreign workers over American citizens; rather, they are hiring the workers who have the skills that they need to develop and build their products and services. The education community – from the highest-level research university to community colleges and career training programs – must to some extent tailor appropriate programs to meet employers' needs if we expect our graduates to find jobs. American students are savvy enough to know where the jobs are, but are often unprepared to study college-level math and science. More than 50 percent of STEM majors – students who did well enough in high school to be admitted to programs at elite universities – drop out of these fields during their first two years of college. Even many of the best high school students are unprepared for the intensity of college math and science classes, and become discouraged when they receive higher grades in their non-science courses.

Some research shows that the best way to keep college students enrolled in STEM majors is to focus on the quality of undergraduate instruction, especially in introductory courses. Research-intensive universities like Cornell need to do an even better job getting our first- and second-year students over that barrier and into the more hands-on upper level courses. Providing students with mentors and role models is one of the biggest keys to success for STEM majors.

At Cornell, we have developed an alumni-student mentor program that matches new students with alumni mentors from their geographic regions with the same interests and (if possible) academic majors, to provide new students with advice and perspective on college life, academics, and career preparation. This voluntary program gives students some real-world perspective to help focus on their long-term goals.

- b. What more can be done to encourage American students to pursue studies in the STEM fields?

In recent years, numerous studies and reports that look at the falling number of U.S. STEM graduates have been published by the government and academic, philanthropic, and business communities. Several common themes run through these reports:

- Getting students interested in STEM fields must start at a young age and continue all through school.
- Hands-on experience is important all the way through the pipeline - from the most basic pre-school science experiment, all the way to Ph.D.-level research – to capture attention and illustrate concepts. This is a challenge in schools (even at the college level) that serve low-income communities and do not have the resources to provide computers, laboratories, field trips, or even up-to-date textbooks.
- Teacher quality is one of the most important factors in keeping students interested in math and science, particularly in the upper grades. Too often, high school science is taught by teachers who do not have any primary training in science. Undergraduate introductory science classes are often taught by graduate students in large lecture halls with hundreds of students. The best students are not motivated to become teachers because of negative perceptions of their classmates (particularly at elite universities), low pay, and a challenging work environment. At a time when school funding is being cut and public school teachers are being painted as greedy and lazy, it's not a surprise that the best students are opting for other careers.
- Mentors and role models are important in keeping students on track and focused on graduating. Career exploration days, job shadowing, internships, and summer research experiences provide important points of contact for students who are unsure of a career path.
- Though the private and charitable sectors play important roles, none of this will happen without adequate public support at the local, state, and federal levels.