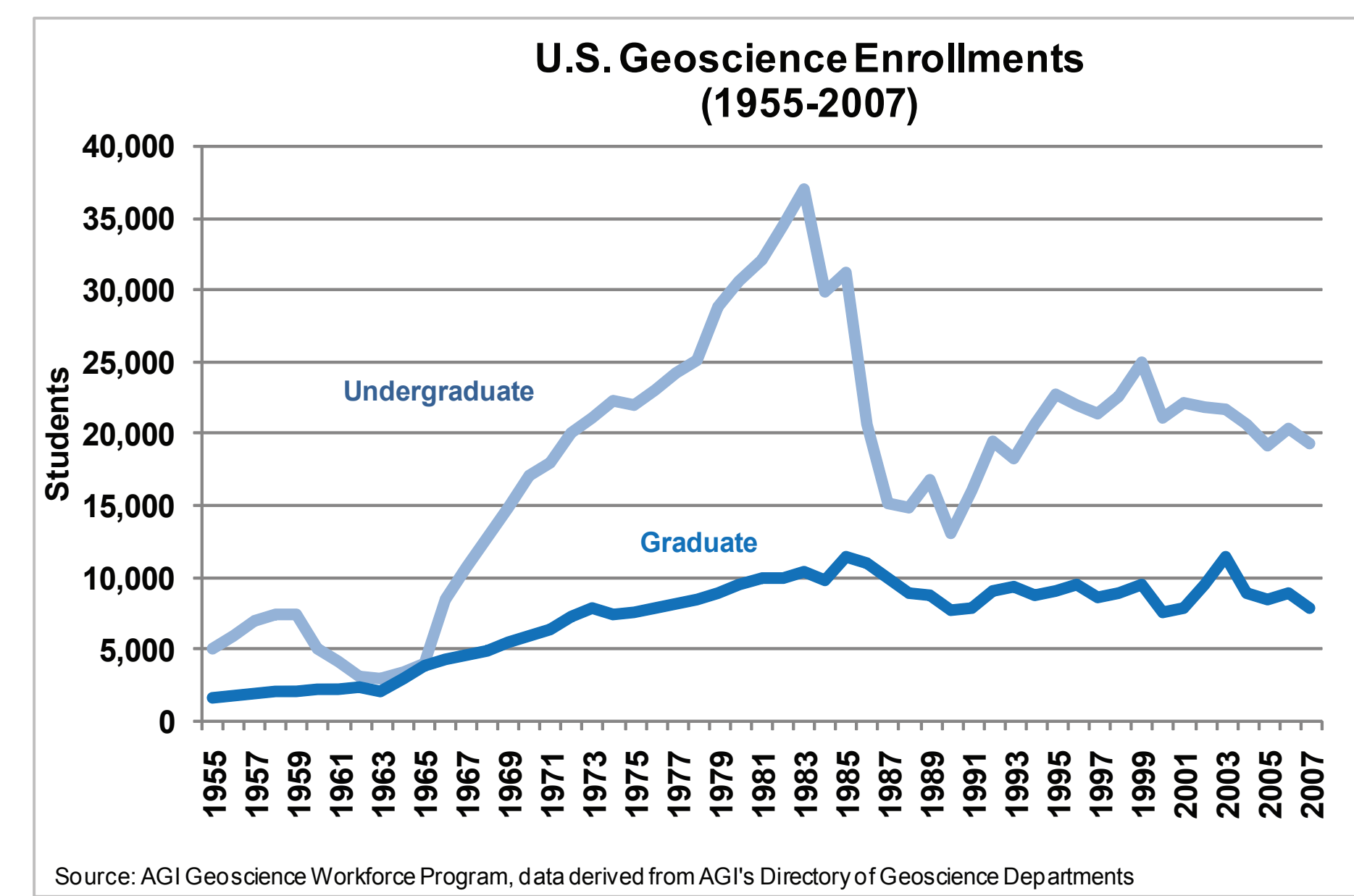


# ED13C-0612 Building a Geoscience Culture for Student Recruitment and Retention The Geoscience Society and Department Nexus

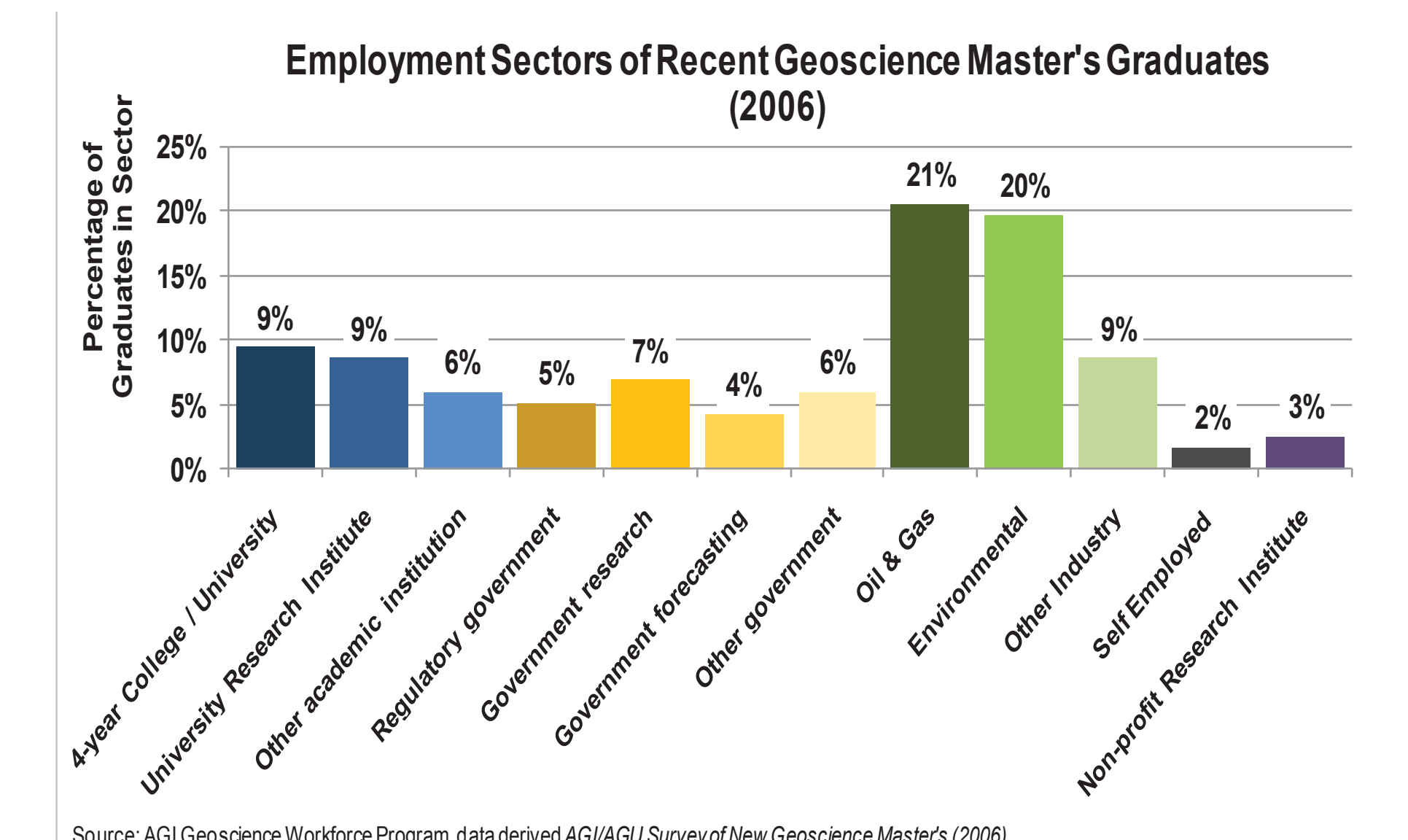
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Student enrollments are steady, and even increasing in some regions.

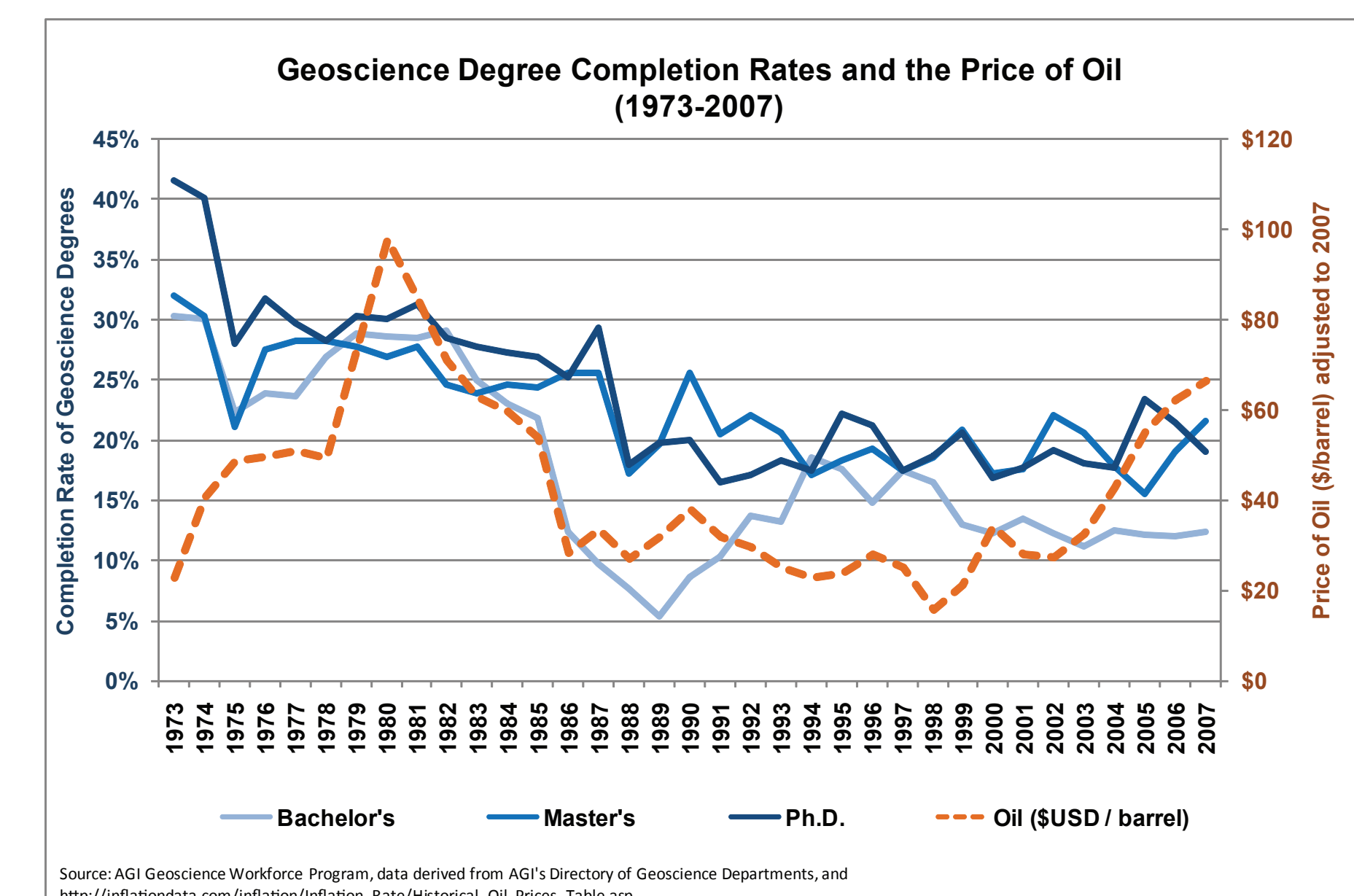
**Attrition Math**  
 340,000 Intro Geo Students  
 6,000 New Geo Majors Per Year  
 2,700 New Geo BS Degrees Per Year  
 13% of BS geology recipients go on to a career in the geosciences

**Fewer than 10% of all Geoscience Society Student Members Continue on directly to Professional Membership**



**ABSTRACT**

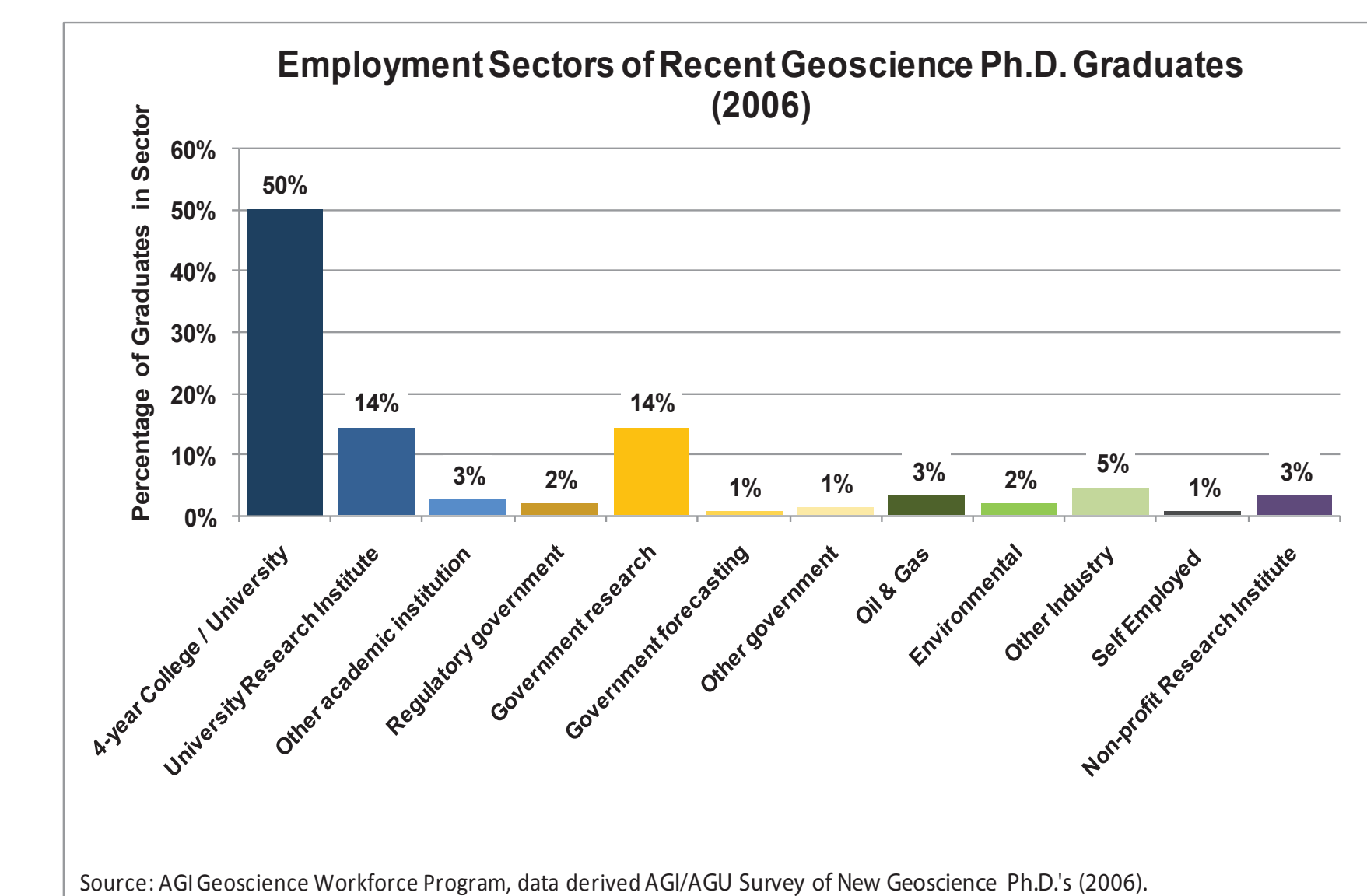
In many other science and engineering fields, the professional society is a key component of the student culture during their education. Students in fields such as physics, civil engineering, and mechanical engineering are usually expected to be members and active participants in their respective professional society, which in turn is tightly integrated with the academic programs through student chapters or activities. This phenomenon does not readily exist in the geosciences, and may be part of the reason for above average student attrition rates and subcompetitive recruitment over the entirety of business cycles. Part of this is a result of 45 societies, including over a dozen that actively recruit student members, but in the same vein, no single society has universal strong cultural presence across the 800 undergraduate programs in the United States. In addition, given the diversity of professional opportunities are not obvious to students because of the traditional subject stovepiping seen in the curriculum and societies. To test and address this issue, the American Geological Institute is piloting a program to build student awareness of the breadth of career opportunities in a social context while also promoting the role of societies as a key networking and development conduit. Early responses to this test have resulted in some non-intuitive patterns and may yield insight into the world view of new and prospective majors.



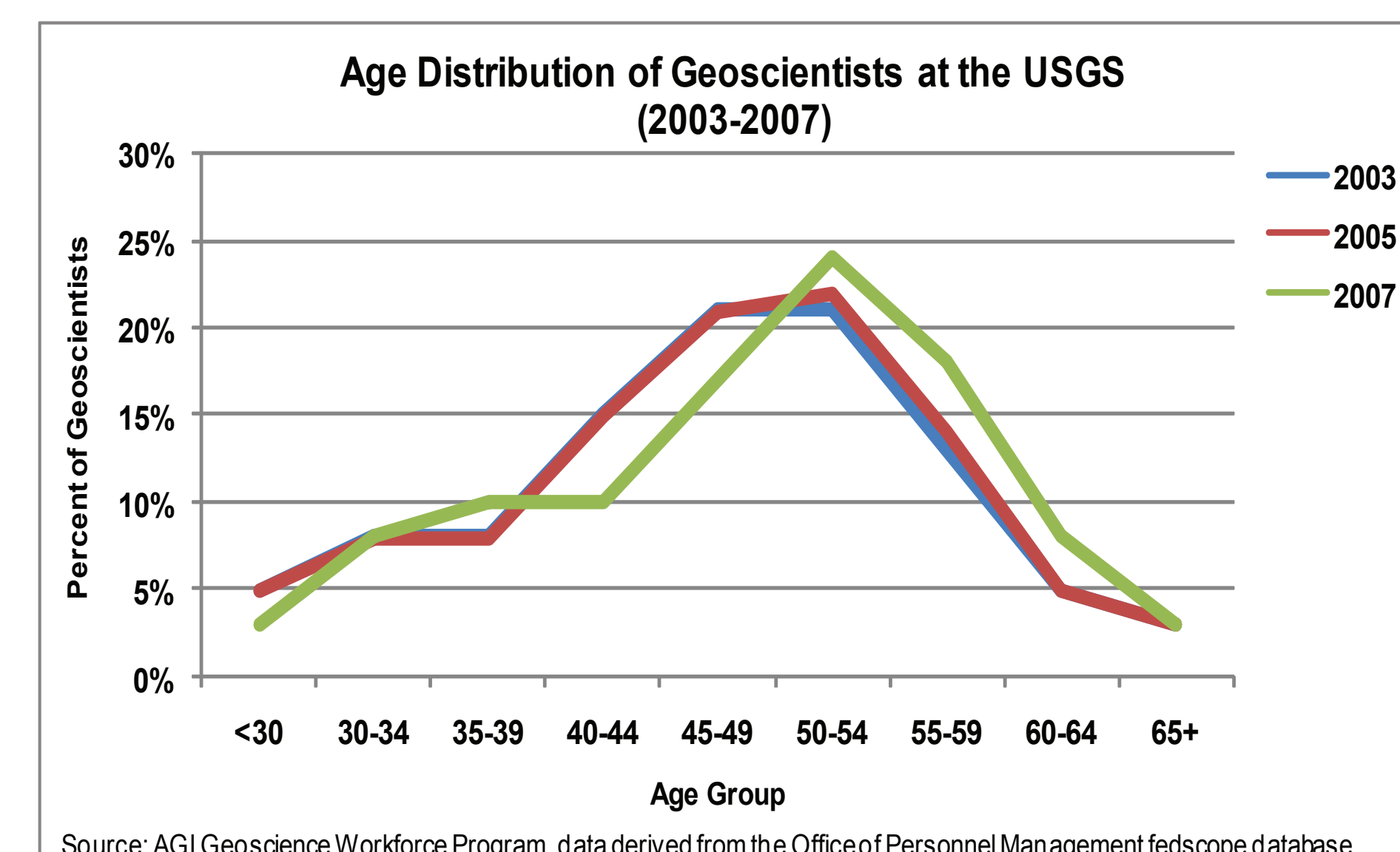
Student attrition remains a real problem in the geosciences, but at least it has recovered from the catastrophe of the early 1990s.

**Attrition from geoscience major to professional is TWICE that other Science and Engineering fields**

**In Physics, 29% of graduates at all levels continue on with professional membership!**



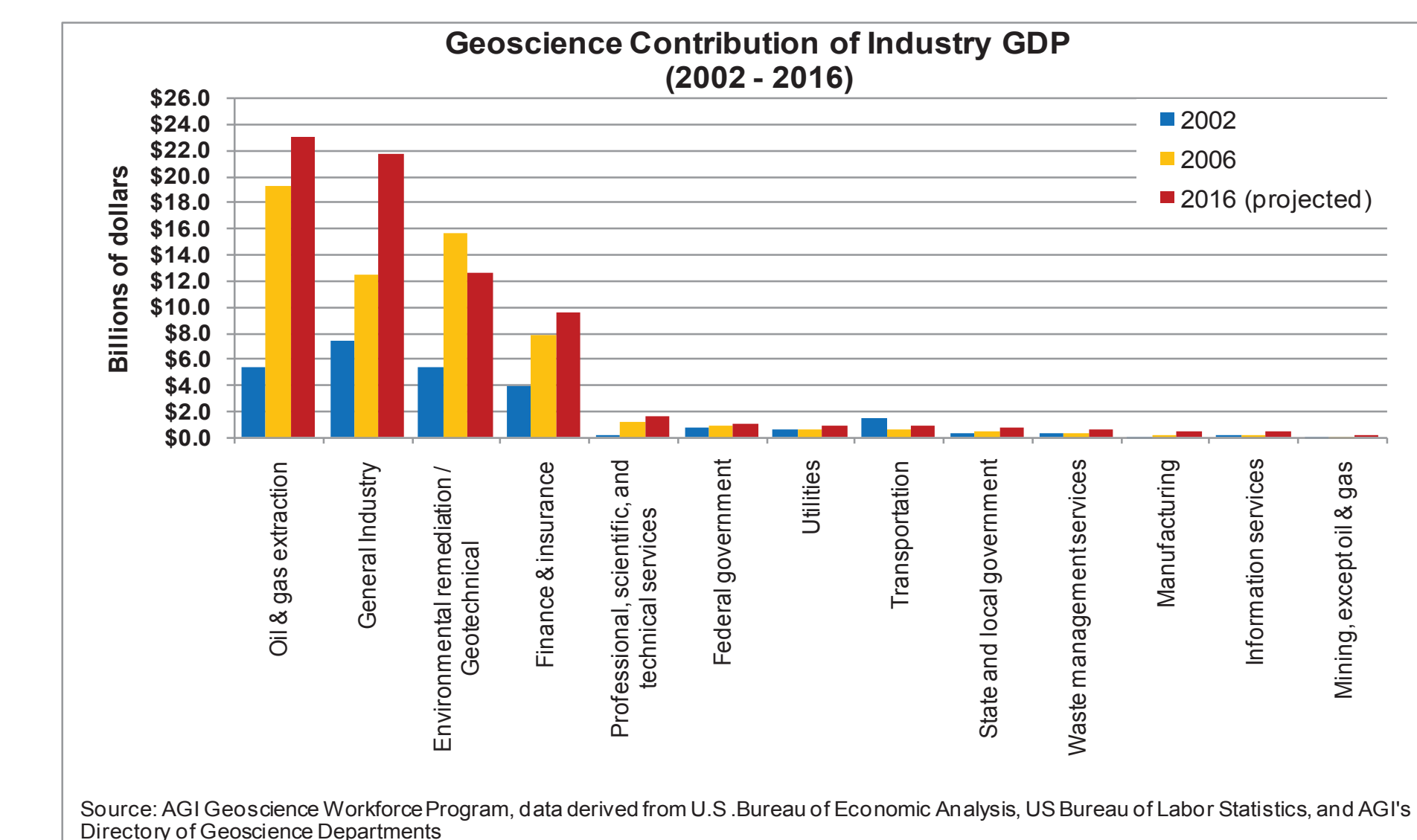
There is a future, but connecting to it requires effort and operating outside of pure academic research, particularly for the 90% of students not getting a Ph.D.



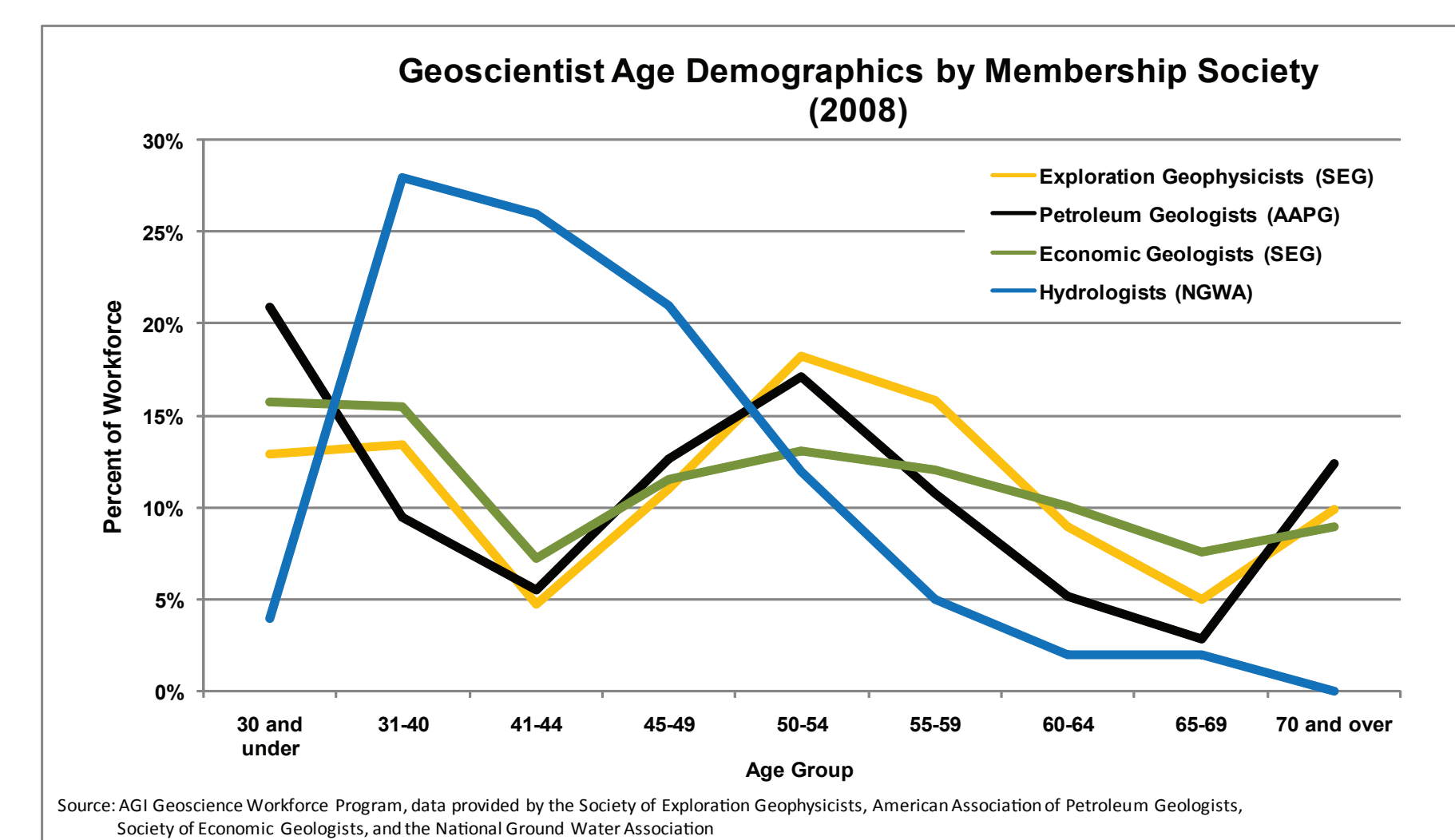
The geoscience workforce is aging rapidly, a boom in retirements is around the corner. Though some of the gap will be met by older workers staying, opportunities and demand for new graduates will be high

**Only 4% of students in over 80 test departments have requested FREE society memberships!**

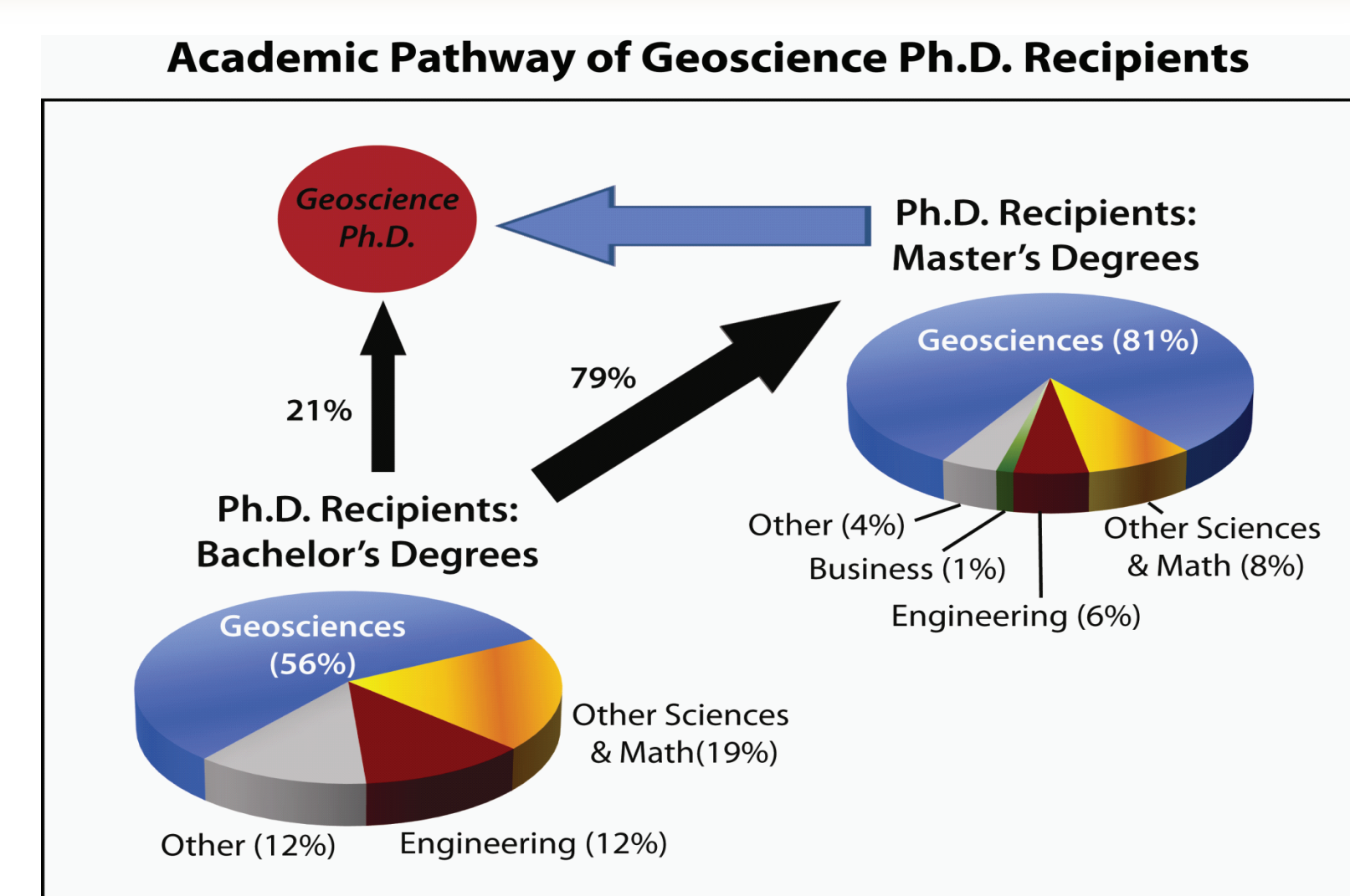
**“Membership in a national professional society carries a lot of weight with our parents because they see their kids’ affiliation as progress toward a big time career goal.”  
 -Kutztown University of PA**



The future is where the money is - and the ways geosciences help build our economy

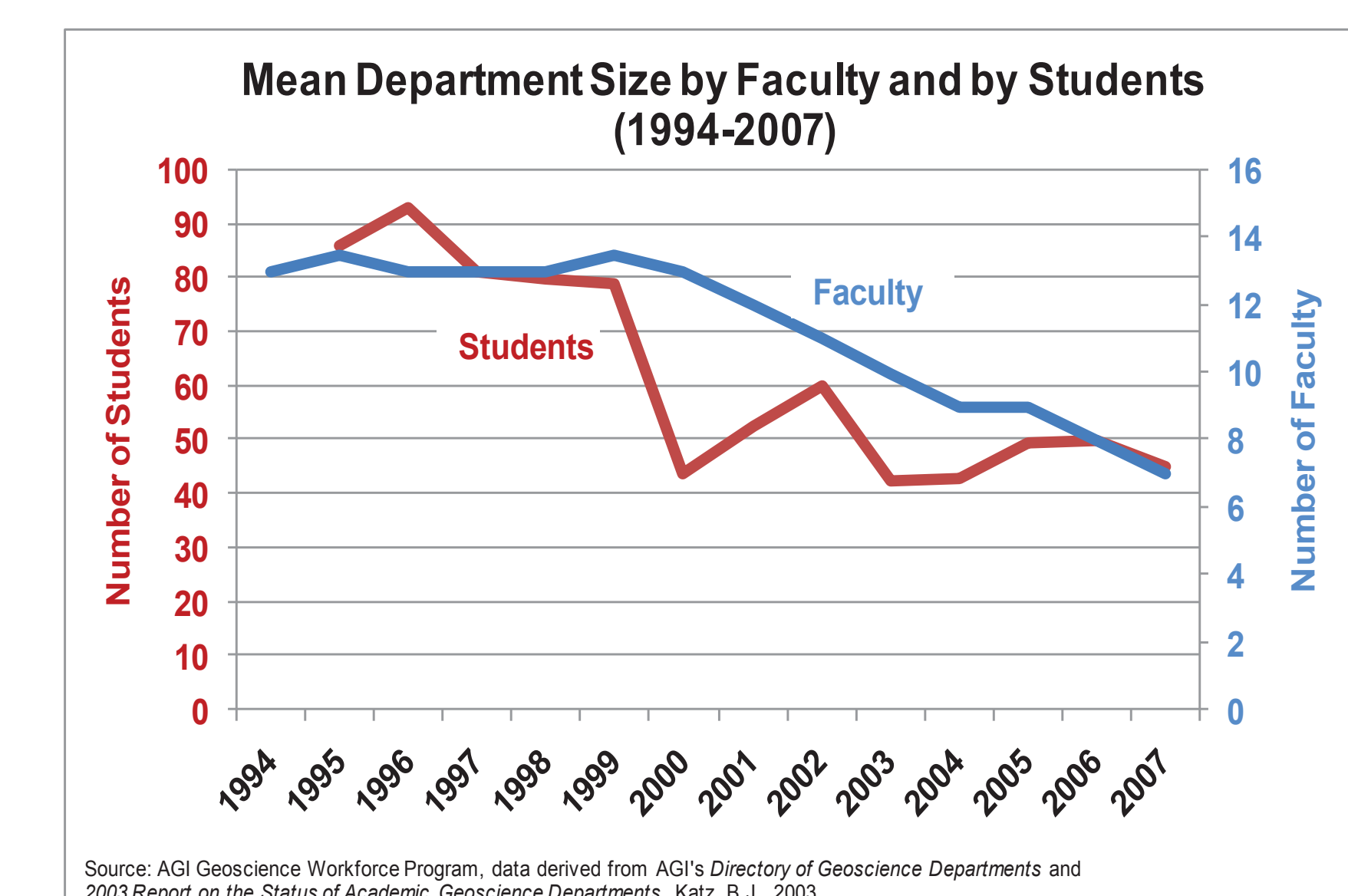


Professional societies are a key pathway to a successful career. The age trend is evident in the societies as well. The shift towards environmental is clearly evident, but where are the youth and students? Will they become active?



One complication with the data is that there is good mobility among geoscience students between fields, with about half of degree-finishers entering the program from other fields. However, core attrition remains the key weakness for geoscience programs and the profession

**Our [enrollment] numbers are increasing... we are working at it harder... we are using compelling information... and growth prospects for a career in geosciences remain strong.  
 -Wittenberg University**



The challenge to play teacher and mentor is an increasing challenge for faculty. Alignment with societies could alleviate much of that pressure

**CONCLUSION**

Currently the geosciences face an impending shortage of talent. Retirements are bound to rise rapidly, but enrollments remain steady and the student attrition rate remains steady. One of the core dilemmas is the lack of late-30's and early-40's geoscientists in the workforce, a statistic reflected both in society memberships, employee age curves. This is the result of historically low enrollments and catastrophically bad attrition of geoscience students in the late 1980's and early 1990s.

Of interest in measuring the health of this 'interval' is professional participation rates. For physics, the science most similar to the geosciences, there is approximately a 29% rate of student members continuing on immediately to professional membership in a society - a key metric of professional activity and commitment to the field. However, most geoscience societies see such continuity rates of between 4-6%, with the most effective societies only seeing translation of about 10% of their graduating student members to professional status. This trend reflects the overall vector of geoscience graduates in employment.

Yet one social factor to consider is the role of the society for students, and in the culture of the academic department. For fields that are closely aligned with engineering, where society membership is nearly a requisite for practice, we see much higher participation rates in societies, such as NGWA.

AGI's studies of student engagement in societies are demonstrating extremely low awareness of societies among students and a distinct intimidation at the process of joining, with rates below 10% for students accepting free society membership offers.

Yet the benefits to students in society participation are clear, and departments are recognizing that the major benefit of student society membership is improving retention, parental buy-in, and maturing of the student perspective of their future in the profession.

Future studies will examine the role of departmental culture/structure for student society participation, as well as longitudinal studies for the impact of student membership on professional trajectories.