

**Environmental Scan:  
Analysis of the Future Factors to Effect  
Graduate Education**

# **Report on the Future of Graduate Schools: Spurring Innovation and Adding Diversity to Graduate Programs**

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## **Executive Summary**

This report outlines the projected future of graduate schools in the United States. Most reports agreed that graduate schools need to make many changes if the United States wants to continue to be the most coveted place to study for both citizens and foreign students. This report will describe what changes graduate schools need to make to their programs and what graduate schools need to do for their students in the years following. The majority of reports on the future of graduate schools emphasized focusing on science, technology, engineering, and mathematics (STEM) fields if graduate schools hope to maintain their leading status in producing the world's top innovators. Community and corporate outreach are also areas graduate schools will have to associate with in the near future. This report will explore the top issues facing graduate schools and what they must do to remedy or change their current situations.

## **Introduction**

Reports state that the successful future of U.S. graduate schools depends on the actions graduate school administrators and faculty take to improve their curriculum and recruitment tactics. The following sections in this report will display what experts say graduate school administrators, faculty, and students need to do to improve and secure the future of U.S. graduate schools.

The report begins with an outlook on what graduate schools will have to do to improve enrollment and stay competitive in a changing educational environment. The next section will focus on supporting students financially, socially, and mentally in order to improve graduate school graduation rates. The last sections will discuss the importance of and how graduate schools can measure their success after they implement the suggested changes and improvements, and who will be responsible for implementing those changes.

## Preparing Graduate Schools for a Competitive Future

According to the Council of Graduate Schools (CGS), when deciding what programs and courses of action to take for the future of graduate studies, it is important for “policymakers, business leaders, and higher education officials to unite together in making the investments necessary to enhance U.S. innovation and national security through stronger support for and attention to graduate education” (Council of Graduate Schools Advisory Committee [CGSAC], 2005, p.1). The CGS believes that if the U.S. economy wants to remain competitive in areas of innovation and research, a focus must be put on graduate schools, which historically have “contributed directly to economic growth and prosperity” (CGSAC, p.1). The CGS and graduate schools across the nation have developed many ideas for how to make U.S. graduate schools competitive.

U.S. graduate schools must also prepare for the fact that they are no longer the monopoly in the graduate school market (Kohl, 2000). Competition from online universities, mega-universities, and foreign universities will become prevalent in the following years. Universities will have to prepare for this by increasing their technological and global resources while creating relationships with businesses and foreign countries. U.S. universities must make many advances and changes in the coming years in order to remain the leader in higher education.

## Focusing on Science, Technology, Engineering, and Mathematics (STEM) Fields

Reports concurred that graduate schools must increase their focus on STEM fields to maintain their status as instigators of innovation and technological development. However, graduate schools have many issues they must focus on when it comes to improving enrollment in and aspects of STEM programs. For example, an increase in STEM education in foreign countries concerns many graduate school education experts.

The risks to maintaining our competitive position in science, technology, engineering, and mathematics (STEM) have been widely noted. For example, as reported by the National Science Foundation (NSF), the number of scientific papers published by Americans has fluctuated around a constant number for the past decade. Meanwhile the number of scientific papers published in other countries has grown by over 30 percent. (CGSAC, p. 5)

Focusing on STEM fields not only affects the competitive abilities of graduate schools and the U.S., but it also has an impact on funding for graduate schools.

Economic growth is related to investments in research and development...studies also show that ‘holding other factors constant, an increase in the number of science and engineering Ph.D.s is associated with increases in patent applications, increases in university patent applications granted, and increases in non-university patents granted. This is strong evidence on the impact of graduate education on innovation and on economic growth, and can be emphasized by all those who advocate for increased funding for graduate schools. (Tate, 2005, p. 1)

For this reason, graduate schools must not only find ways to spur innovation on their own property, but they must also discover ways to work with industry and non-profit organizations to ensure that they have the best possible resources for new and important research. However, STEM progress is only the first step. It will also become vital in the near future for all graduate programs to have an array of interdisciplinary programs.

## Working with Businesses and Organizations

Graduate schools must begin, or continue to maintain, relationships with non-profit organizations and businesses. If graduate schools do this, they can:

- Use up-to-date technologies and equipment that businesses or organizations have.
- Give students resources for contacts when they graduate and allow them to gain experience in real world settings.
- Provide the university and students with another form of funding that would not otherwise be available.

Critics of graduate education say that graduate schools' methods sometimes hinder students' abilities to be useful once they enter the workforce. This means that graduate schools put too much emphasis on lecturing students and not enough time allowing students to actually work. However, by working with businesses or organizations this critique can be silenced. "Today, there is a growing recognition that higher education cannot exist in a vacuum; curricula will be influenced by outside groups—employers, government, and professional agencies" (Kohl, p. 11). This is true because professions need both new employees who know how to do the work, and they need ways to reeducate their old employees.

Graduate schools can also alleviate competition if they work with professional agencies. "Today students are likely to accumulate educational experiences from a number of different sources including corporate universities, professional societies, and for-profit enterprises" (Kohl, p. 4). However, graduate schools can gain the edge if they choose to work with professional agencies instead of trying to fight them.

The new economy "is a knowledge and idea-based economy where the keys to wealth and job creation are the extent to which ideas, innovation, and technology are embedded in all sectors of the economy." It depends upon a higher education infrastructure to develop and maintain high-quality knowledge workers, a majority of whom already have baccalaureate degrees. The importance of lifelong learning in this new economy thus calls into question some fundamental assumptions about the constituencies, policies, and structures of traditional higher education institutions. (Kohl, p. 11)

This paragraph best displays one of the challenges facing higher education. Graduate schools must find ways to create an improved, innovative workforce, and they must find ways to work with corporations and non-profits to create the most skilled employees possible.

## Creating Interdisciplinary Programs

Adding interdisciplinary programs to graduate students' curriculum allows students to have knowledge about a vast number of subjects that will benefit them when they enter the workforce.

Most graduate students (six in ten) desire collaboration across disciplinary lines, while only 27 percent believe their programs prepare them for the possibility. And among 6,000 graduates interviewed ten years after earning the doctorate, ‘The number-one ranked recommendation was to maintain an interdisciplinary focus, to go for breadth.’ (Woodrow Wilson National Fellowship Foundation [WWNFF], 2005, p. 16)

A focus on interdisciplinary studies more adequately prepares graduate students for the workforce and gives students the opportunity to be a part of new studies and innovations that will have to transcend through a large number of disciplines.

Many successful interdisciplinary programs are providing innovative solutions to pressing societal problems. Increasingly, universities are partnering with corporations and government agencies to respond to the challenges that face our nation. Successful interdisciplinary graduate programs often emerge from these partnerships, which are typically housed in a research institute within the university. (CGSAC, p. 18)

## Attracting International Students and Minority Students

After September 11, graduate schools across the nation saw a decrease in the number of foreign students enrolled at American universities. In 2005, reports showed a slight increase in foreign student enrollment due to the government making the visa process easier, however, numbers have still not increased back to what they once were. Attracting more foreign students is important because “foreign-born workers make up over a quarter of the STEM workforce in the United States,”—and since advancement in the STEM fields must be a focus of all U.S. graduate schools for security and innovation purposes—this statistic means it is vital that American graduate schools continue to attract foreign students to help U.S. progress (CGSAC, p. 20).

Since many restrictions still deter foreign students from enrolling in U.S. graduate schools, it is vital for U.S. colleges to push for the government to change visa laws to make U.S. graduate schools more appealing. “Other countries use visa policies for strategic recruitment of international talent. In the United States, by contrast, all international applicants to graduate schools must indicate a commitment to return to their home country as a basic qualifying criterion for approval” (CGSAC, p. 21). This aspect along with many others hurts graduate schools’ abilities to recruit foreign students. The following quote states another concern for graduate schools that:

U.S. scientific and technological leadership has until now been assured by the combination of graduate programs unparalleled in excellence and the steady supply of the world’s most talented students. However, other countries are significantly increasing their investments in graduate education and attracting top students...this new competition promises to flatten the world in ways that we can only begin to imagine and with profound implications for our nation’s economic future. (CGSAC, p. 5)

Reports also show that the number of minority students (i.e. non-white or women) is not as high as education leaders would like to see and this hurts the diversity status of schools. “Study after

study shows that minority students and faculty have a stronger desire to bring their learning into the community than their non-minority peers” (WWNFF, p. 6). In order to attract more minority students, the Woodrow Wilson Foundation calls for a major change in the recruiting ways of universities.

To the extent that the doctorate becomes more cosmopolitan—yes, by reaching out to the schools and community colleges instead of lazily recruiting from a B.A. cohort that has already lost a huge number of extremely capable African-American, Hispanic-American, and Native-American students, but also by reconceiving the disciplines at the doctoral level with a keener eye to the many ways in which knowledge can be enacted—the appeal to students of color will be strengthened. (WWNFF, p. 6)

### Implementing Race-Neutral Admissions Strategies

In 2003, the U.S. Supreme Court agreed with Michigan State University’s argument that universities had the right to include race as a determining factor for admittance into undergraduate and graduate programs. However, in 2006 the constituents of Michigan voted to ban the ability to include race as a determining factor of applicants to all state institutions. Both the movement to view race to determine admittance to an institution and the movement to ban the ability to view race when determining admittance, are controversial. However, this is an issue all state universities will face and they must determine the best ways to deal with this.

While considering race in admissions might still be a viable option for some graduate schools (as long as they follow the guidelines set down by the Supreme Court for admission), many leaders in education believe it is more important to find more race-neutral factors when determining which students will receive acceptance into graduate school. However, it should be pointed out that most race-neutral factors translate to focusing on those students who are “economically disadvantaged” to create diversity in admissions.

Universities have many options to help them make their graduate schools more diverse. Most of those options come in the following section geared towards working with K-12 schools, but a focus on the university’s undergraduates is also important. The basic issue for graduate schools when it comes to attaining a diverse student body is not necessarily their admissions process, but the fact that the undergraduate school usually does not have the programs in place to encourage minorities to enter graduate school.

One study concluded that “diversity is achieved through outreach programs, recruitment, financial aid, and support programs [targeted at underserved or disadvantaged students]” (Cabarro, 2003, p. 1). Recruitment and support programs will be the parts of this conclusion that are most entwined. This means that whatever the program is for, the program’s leaders will have to make a direct and thorough effort to recruit students who are “educationally or economically disadvantaged, or have disadvantaged and underserved backgrounds.” This is what some more successful programs do in an attempt to encourage those from these backgrounds to attend graduate school, and hopefully make the graduate school more diverse.

## Improving the K-12 to Graduate School Pipeline

Graduate schools do not reach all the minority students they should because they fail to give valuable information about graduate schools to the children, families, teachers, and counselors in the communities where the graduate school is located. Teachers and counselors in K-12 education act as guides for the students, and they have some say in the direction students take after graduation.

Teachers and counselors—from any ethnic background—can act as cultural and institutional brokers when they help students succeed in school... Teachers and counselors can also act as institutional gatekeepers when they (a) assess students against standardized benchmarks that determine eligibility for vocational and remedial classes and college-prep programs; (b) discourage them from taking classes for university admission; or (c) enroll them in vocational tracks solely on the basis of their ethnicity, race, or social class. (Cooper, 2005, p. 421)

This is why it is important for graduate schools to get involved in K-12 education. While they cannot take over the counselor's job, graduate schools can create partnerships with K-12 institutions so they can either work with students, or inform the families and students that graduate education—though it may not be the right path for all students—is a viable path for all students. Getting involved in K-12 education can also give graduate schools the opportunity to tell minority families, who might otherwise try to discourage their children from continued education, how graduate education is a realistic road for their children to take.

While graduate school administrators cannot always talk to the parents and students one-on-one, they can work with K-12 schools to find ways to improve communications to students and parents of many different backgrounds to encourage continued education. A focus should also be included in these communication improvement efforts to reach immigrant parents or parents who do not have English as their first language. Doing this can improve these parents understanding of how the U.S. higher education system works, and can give them the understanding of how and why higher education will be possible for their children. If graduate schools can get involved at this level of communication they can improve the possibility of more diverse students actually applying to their graduate schools.

## Informing Students at Younger Ages About Graduate Education

“In middle school, students make course decisions that determine their college eligibility. The graduate school, in other words, will not succeed by focusing alone on undergraduates, but must participate with earlier stages of education to enlarge the eligible cohort” (WWNFF, p. 21). Reaching students at an earlier age also helps to reach minority students. However, according to “The Responsive Ph.D.” report done by the Woodrow Wilson Foundation (2005), many Ph.D. students and professors do not see a place for themselves in K-12 education. This refers more to the fact that those with Ph.D.s do not want to teach in the K-12 field, but it also shows why graduate education is not reaching many potential students.

Requiring Ph.D. students to teach in more than just the college setting is one way to achieve the goal of reaching younger students. This also helps Ph.D. students gain experience in more than

one type of teaching environment. However, there are complications to this. “It is wildly controversial to suggest that there are important roles for doctoral graduates in K-12 education and that very controversy only signals the terrible gap—more absolute in the United States than in any other country—between higher and public education” (WWNFF, p. 18). Getting past this controversy, though, would provide many advantages to graduate schools including the possibility of reaching minority students who are underrepresented in the graduate system and providing graduate students with needed real-world experience.

Encouraging undergraduate programs or classes that require undergraduates to work with K-12 students can also increase the diversity of students who want to attend graduate school. For example, Oregon State University implemented a GK-12 program to encourage students to explore studies in science. Undergraduates had the opportunity to work with graduates, and both worked with elementary school children to teach them about science and conducting experiments. Such a program is possible in most schools either by receiving a GK-12 grant from the National Science Foundation, adding outreach courses to the curriculum, or encouraging members of a club to get involved in K-12 schools (Rao, 2007, p.55). They are also helpful to get graduates involved with elementary schools; help undergraduates determine whether or not to attend graduate school; and encourage children of all races and ethnicities to attain a college education in a science field. Basically, such outreach programs can help alleviate many of the problems researchers and politicians have with graduate schools, while simultaneously giving graduates and undergraduates the push they need in their education.

## Increasing Master’s and Certificate Programs

The need for an increase in master’s and certificate programs will become prominent because many corporations, as well as their employees, have begun to see the need for continued education throughout their lifetime. Both programs are popular because they can usually be obtained more quickly and they have a focus on skills actually required in the workforce. “In fact, ninety percent of graduate degrees awarded in the U.S. are master’s degrees. The case also needs to be made, then...that master’s-level education is a major source of innovation and growth” (Tate, p. 1). In addition to this fact, graduate schools should also take into consideration that “a master’s degree is often viewed as a way to distinguish one’s self from other job applicants and perhaps qualify for a higher salary. Even those just entering realize they will need to earn credentials beyond a bachelor’s degree” (Kohl, p. 17).

Conversely, though certificate programs may not be the source of innovation, they are what most employers and employees need to obtain in order to gain the latest skills to make them better at their jobs (which does imply that graduate schools must be leaders in new business technologies and specializations, and would need to work with corporations in order to accomplish this). However, the increased need for organizations or companies to have more skilled employees could also force changes in the educational system. “Education and training in and for companies will be transformed; this will involve moving flexible training systems focused on consumers’ specific needs, with explicit goals and measurable outcomes. Merely sitting in a classroom or becoming involved in inefficient learning experience will not work” (Kohl, p. 51-52). For postgraduate students, it will be the real-world working experience that matters, not just the theory behind it.

The fact that corporations need consistent and up-to-date training for their employees also poses another area of competition for the U.S. graduate school system. If corporations cannot get what they need from graduate schools they will do one of two things: either create their own training system or use a new kind of university. If graduate schools are unwilling to update for this new area of educational services, they could lose both a new form of funding and clientele, and see increased competition from school systems such as The University of Phoenix or the Open University.

## Encouraging Students to Study Abroad

The increase in global relations makes it almost necessary for graduate students to be fluent in at least one other language before they graduate, as well as, have knowledge of different cultural dilemmas that will occur when they enter the workforce. When studying abroad, students can develop fluency in a new language, gain a better understanding of society and themselves, and learn business tactics and operations as well as societal function in another country (Gordon, 2006, p. 64). All these aspects combined can give students an edge when it is time for them to find a job, as well as gain new ideas to help global relations and spur global innovations. “Our world has become globally interdependent and continues to shrink daily, making it essential for students to develop a sense of internationalism” (Gordon, p. 64).

Graduate school deans will have a role to play in making cultural exchange a common occurrence in graduate school education. According to an article from the CGS, deans should be responsible for the following:

- Increasing international student recruitment and admissions to levels they were before 9/11.
- Increasing the number of graduate students who participate in international experiences.
- Ensuring that the quality of the study abroad experience is one that will help graduate students throughout their graduate and future careers.
- Preparing future faculty and professionals for the changes to come, so they can prepare their students and encourage them in internationalization.
- Working with other deans across the globe on making a list of the best international practices.

These tasks are necessary to creating the sense of internationalization that American graduate schools are currently lacking. When graduate deans act as the instigators of internationalization they can ensure that their students and faculty are able to accept these new cultural changes taking place because the deans are the intermediary between all the different university groups.

## Supporting Students and Ensuring High Graduation Rates

The top priority for universities when it comes to supporting their students needs to be increasing financial aid. However, graduate students need more than just financial support. They will also need on-campus pre-admission interviews to ensure a fit between program and student; more than one advisor (including a mentor); reduced teaching loads for doctoral students; special scholarship programs for students with family needs; and more research experience early in the graduate career (Tate, p. 2). Since the top priority will be to gain the money to fund all these new

programs, however, there will be a focus on what resources graduate schools have available to them.

Many studies show a correlation between graduation rates and the amount of support students receive throughout their graduate career. The more resources for help, support, and opportunities there are, the more likely students are to complete their graduate education. For this reason, input about graduation rates will be included in the following sections about student support.

## Finding Funding for Graduate Schools

One of the most suggested ways for funding graduate school programs is to create relationships with corporations. Many reasons exist for this including the fact that corporations could use universities to train their own employees and they have the resources and finances available to help graduate schools. According to the “Financing Graduate Education: Current Trends, Future Concerns” presentation done by the Council of Graduate Schools (2006), increases in financial aid from traditional sources generally failed to keep pace with the rise in educational expenses. “Ample opportunities exist for postsecondary and postbaccalaureate institutions to work with companies, but they must be prepared to change how and what they deliver to meet emerging business requirements” (Kohl, p. 53). Funding from and relationships with corporations can be helpful if universities decide they want to work more towards preparing students for the workforce, instead of just teaching them about it.

However, graduate schools should place an importance on receiving funding from as many venues as possible for this reason:

Graduate student debts are rising at an alarming rate, causing many to rethink the idea of going to graduate school. A 2002 Council of Graduate Schools’ analysis of the National Postsecondary Student Aid Study published by the NCES in 2000 found although the percentage of students graduating with debt in 2000 (47 percent) was relatively unchanged from 1993, the average debt loads had more than doubled: from \$10,200 to \$24,500 for master’s students and from \$16,800 to \$36,300 for doctoral students. (Cohen, 2005, p. 25)

## Gaining Support from the Government

In order for U.S. graduate schools and the U.S. economy to maintain the national recognition and prestige they are used to, they must be innovators. One of the best ways for the U.S. government to do this is to support graduate education, which is why graduate schools must lobby their government for more funding. Unfortunately, the government does not view graduate school as serving a public good, but as merely a “professor producing industry.” Graduate schools must find ways to prove that graduate education is more than that. However, all the ways provided of getting the government to fund more money also require that graduate school employees present their needs to congress often and effectively, with proof of how graduate schools help the country as a whole.

Graduate schools must prove to the government that they cannot attract the best students if they cannot provide the students with sufficient funding. The graduate school should be able to show that whether they are producing faculty or the best scientific minds, they need the appropriate

funding to do so because unless they can afford the best students the progress of the graduate school and the government is limited.

Simply put, we must pay them [students], using graduate assistantships that enable students to work as apprentice teachers and researchers in areas related to their programs of study. The better funded these positions are in terms of stipends, tuition fellowships, and health insurance, the more likely they are to attract the type of students who can make the difference between success and failure in the lab. (Cohen, p. 25)

In order to gain funding, it is important that graduate schools focus on:

- Advancements and increased enrollments in STEM fields and how they relate to the national economy and security.
- The increased competition U.S. graduate schools have from foreign universities.
- The ways that graduate schools serve the public.
- The need for future employees to have education past a bachelor's degree in order to get a job.

## Obtaining Financial Aid for Minorities

Another concern of the CGS is how financial aid is dispersed between majority and minority students. According to the “Financing Graduate Education: Current Trends, Future Concerns” presentation (2006), “minority students were less likely than others to receive grants and assistantships, especially at the doctoral level, and minority degree recipients were more likely than their peers to have high amounts of student loan debt.” This is a concern because increased debt and decreased funding have an impact on graduation rates of students, which means if students cannot get the funding or cannot afford to get any further in debt they will quit their degree program. This also leads to effects in America's ability to compete with world markets, especially when the following statistics are considered:

Currently, only about fifty percent of students entering Ph.D. programs actually complete their degrees. (By contrast, in the U.K., across all fields, about two-thirds of Ph.D. students complete their degrees.) Moreover, minorities and women complete at lower rates than men. Domestic U.S. students also complete at lower rates than international students. (Tate, p. 2)

In order to keep American competitiveness high, graduate education resources and graduation rates must rise, and funding from all possible resources must be investigated. After this task is completed, fulfilling the other needs of students will be easier to obtain.

## Preparing Students for Careers Outside of Academia and Connecting Graduate Students with Their Community

“There is a three-way mismatch...between the purpose of doctoral education, aspirations of students, and the realities of their careers—within and outside academia. The result: Students are not well prepared to assume the faculty positions that are available, nor do they have a clear concept of their suitability for work outside of research” (WWNFF, p. 18). Graduate schools can

alleviate these problems in many ways, but they must be willing to branch outside of the university environment. By getting involved with the community surrounding the university, the graduate students not only have an opportunity to gain real-life experience helping those who really need it, but they can also prove to government agencies who do not feel graduate education is living up to its hype, that graduate students and schools really do serve a public good. “A highly evolved society needs highly trained people in all fields—elementary education teachers with master’s degrees, social service professionals with advanced training, humanities Ph.D.s who are positioned to interpret our past and help us think critically about our future” (Stewart, 2005, p. 2). Incorporating these ideas into graduate students’ education proves to them that there are opportunities outside of academia where they will be of use, and it also forces them to think about issues facing their community and about ways to fix those issues.

Having students participate in their community can also help with graduation rates. “They [graduate students] note a new appreciation of the power of their discipline, a sense of how much they might accomplish in various venues, and an improvement in the writing of the dissertation because of the experience” (WWNFF, p. 19). When students know what they can do with their education they have more of an incentive to complete their degree, which will raise graduation rates overall.

## Providing Mentors and a Place for Graduate Students

According to data collected from the CGS “Ph.D. Completion Project.” “success in achieving a Ph.D. depends upon a close and effective working relationship with one’s advisor and mentor.” However, not all graduate students have access to a mentor, and the role of a mentor is not easy to define. According to data from the Ph.D. Completion Project, benefits of providing a mentor include:

- Improvements in the structures of support between research advisors and doctoral candidates.
- More collective responsibility within the program for the success of doctoral candidates.
- Increases in clarity and transparency about expectations.
- Better conflict management processes when conflicts arise between students and advisors.

Graduate students also miss a sense of unity when they are no longer undergraduate students. Generally, undergraduate students have access to a lot of social events and occasions in which graduate students do not feel invited. The “Ph.D. Completion Project” also states that campus-wide organizations and graduate student centers can provide professional development and networking opportunities, and can foster interdisciplinary discussion and community building.

## Measuring Improvements Made by Graduate Schools

When it comes time for graduate schools to find more funding, they will need proof that they are changing and improving their programs. Measuring the success of the graduate school will become vital. The Council of Graduate Schools’ Ph.D. Completion Project and the National

Research Council's Assessment of Research Doctoral Programs both seek to provide graduate schools with information on which areas of graduate study need the most focus and how to analyze improvements in those areas.

“The Ph.D. Completion Project will assess the completion rates of doctoral students across a wide array of fields, create and implement interventions designed to increase completion, and evaluate the impact of those interventions” (CGSAC, p. 22). The Assessment of Research Doctoral Programs of the National Research Council seeks to help universities use benchmarking to improve the quality of graduate programs, provide information to potential students and the public on doctoral programs nationwide, and improve our national research capacity (CGSAC, p. 22). Following examples provided by these two programs can help research departments learn where to focus when it comes to measuring graduate education.

## **Implementing Changes by Starting from the Top and Working Down**

Many cultural changes will have to occur if graduate schools are to succeed, but the question often posed when it comes to these new advances for graduate education is all too often “Whose job is it to make sure this happens?”, and since the question was asked the answer is everybody's, but more importantly it must start at the top of the university hierarchy. As has already been discussed, the government does not see graduate education as being a priority, so they will not initiate the changes that must occur. It is therefore the university's job to begin implementing changes.

The NASULGC conclusion that internationalization requires “substantive, transformative change at all levels” and leadership from the top to make it all happen is indisputable. Those presidents who will succeed in transforming their institutions will look beyond the traditional undergraduate study abroad, language and culture programs, and internationally oriented courses. They will truly involve the entire university in the effort. (Carlin, 2007, p. 1)

While this quote is geared more towards the globalization of universities, it also holds true for all the other issues facing graduate schools. And while it is the president's job to do what she or he can to get the graduate faculty and staff to start thinking of ways to fix these issues, it is also the graduate school community's job to recognize where the problems are and what needs to be done to fix them.

After universities have figured out what the problems and solutions are, then they can start getting help from businesses and the government. And while it may seem unfair that so much of the work is left to the universities, it should also be considered that nobody else can really qualify to start fixing these issues because nobody else works in this environment. Therefore, graduate schools must take the initiative in beginning to make their programs better.

## **Conclusion**

Graduate schools have many challenges to overcome in the following years. “But ultimate success in meeting the challenges we face depends upon two things: a strong partnership between graduate schools, corporations, and policymakers and a functioning graduate education policy network that will facilitate coordination across the three sectors to advance a prosperous future for our country” (CGSAC, p. 7).

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