

I. Data Brief: Graduate Education Trends and Initiatives

The global competitiveness of the US and capacity for innovation hinges fundamentally on a strong system of graduate education.

– The Path Forward: The Future of Graduate Education in the U.S. (2010)

Data Brief: Key Takeaways

- As of Fall 2013, twenty-five SUNY institutions offer more than 2,500 graduate-level academic programs to more than 40,000 students.
- For SUNY, the academic disciplines areas with the greatest graduate enrollment are Health Professions and Related Clinical Sciences (with 22.7% of the total graduate enrollment) and Education (18.0%).
- SUNY collective post-baccalaureate enrollments in STEM-related areas account for 23.6% of all graduate enrollments for Fall 2012, an increase from 19.7% in Fall 2002.
- SUNY enrollments among underrepresented minorities have increased significantly over the last two years, now accounting for more than 10% of total graduate education enrollments.
- The average time to degree for SUNY doctoral programs in 2011-2012 was 5.65 years. This is lower than national average time to degree which is around 7.5 years, according to the National Science Foundation.
- As of 2013, 6,640 graduate students were employed by SUNY; 68% were funded through campus and system operation budgets and 32% were employed through various external funded grants.
- New York colleges and universities offer more doctoral programs than any other state; New York is one of the only states in the country where the private institutions offer more doctoral programs than public institutions.

A. Graduate Education in the United States

The United States has the largest and the most decentralized infrastructure of providing post-baccalaureate education in the world. According to national data sources, the U.S. graduate education system spans more than 1,200 campuses and serves more than 1.7 million students. More than 650,000 master's degrees, 90,000 first-professional degrees, and 48,000 doctorates are awarded annually.¹

¹ Gonzales, L.M., Allum, J.R., & Sowell, R.S. (2013). Graduate Enrollment and Degrees: 2002 to 2012. Washington, DC: Council of Graduate Schools.

Graduate education in the US, as it is currently formulated, can trace its beginnings to the last two decades of the 19th century. During this time, higher education was undergoing a rapid transformation and there was a new emphasis placed on advanced study and scientific inquiry. While master's degrees had been offered in the U.S. since the creation of the colonial colleges in the 1700s, the beginning of graduate education in this country is generally considered to be 1876, when Johns Hopkins awarded the first Ph.D. In fact, Johns Hopkins was established with the express purpose of advancing graduate education and became known as the “prototype and propagator” of research and graduate education as core missions of the university.²

Following the efforts at Johns Hopkins, several other institutions developed their own graduate schools. Institutions such as Stanford University and the University of Chicago were founded with a focus on graduate education. Much older institutions, such as Harvard University and Columbia University, added graduate schools onto their existing undergraduate infrastructure. The developing land-grant institutions included graduate education and research as an important part of their mission to transform the nation's agricultural and mechanical-based economy. It was not long until institutions began to recognize that graduate education was an important means for competing for top students (at all levels) and faculty (in most fields) in an increasingly competitive higher education marketplace.

By 1900, there were 14 Ph.D. degree granting institutions and they had awarded a total of 300 Ph.D.s in a range of disciplines. In fact, it was in 1900 that the American Association of Universities (AAU) was founded to create common standards among doctoral-granting universities, eventually becoming a self-identified group of elite institutions which were leading the nation's efforts in graduate education and research. Two SUNY campuses now belong to the AAU: the University at Buffalo and Stony Brook University.

Today, students enrolled in graduate education represent only about 3% of the total number of students in the entire education pipeline in the U.S. Yet, those who graduate with an advanced degree affect our lives in very significant ways. Our planes, trains, and automobiles are designed by engineers with graduate degrees. Our children are taught by teachers with graduate degrees. Much of health care is provided by those with graduate degrees, and the medicine we take is developed by scientists with graduate degrees. Nanotechnology is revolutionizing the way we work, communicate, and compute because of individuals with graduate degrees. Even our nation's economic policy is set by those with graduate degrees.

Indeed, the prospects for those who pursue graduate education remain high. The median weekly earnings and unemployment rates for those with a graduate degree are significantly better than those without. And, occupations that typically require a master's degree for entry are projected to grow faster than any other degree level from 2012-2022 (see Appendix C for employment-related data for those with a graduate degree).

However, while the U.S. once was the dominant global actor in graduate education and research, over the past few decades, there has been a meaningful shift in this status as many nations have come to realize the importance of graduate education and research for promoting their economic standing and, as a result, have bolstered their investment in graduate education. Thus, the US continues to have the largest graduate education infrastructure, but the global landscape in which it exists is changing. For example, by 2000, after years of restructuring, Europe was producing more science and engineering doctorates than the U.S. and a 2013 report suggested that the UK has overtaken the U.S. in terms of the quality (as measured by field-weighted citation impact) and the global economic impact of its research (as measured by citations in

² This history is drawn from Gumport (2011). Graduate Education and Research: Interdependence and Strain. In P.G. Altbach, P.J. Gumport, and R.O. Berdahl. (Eds). *American Higher Education in the Twenty-First Century: Social, Political, and Economic Challenges*. Baltimore: The Johns Hopkins University Press.

new patents around the world).³ China, India, and South Korea (the three largest exporters of students to the United States) are also investing significantly in their graduate education and research infrastructure. In fact, this build up of capacity in other countries could threaten the United State's STEM pipeline. International students account for about 15% of graduate education enrollments nationally (compared with about 3% at the undergrad level).⁴ However, those numbers are far greater in STEM fields. By 2007, the percentage of science and engineering doctorates awarded to international students exceeded 40%. About 35% of postdocs are temporary visa holders. Students, postdocs, and other researchers from other nations accounted for 54% of patents issued by universities in 2011.

The 2010 report *The Path Forward: The future of Graduate Education in the United States*, also suggests that domestic vulnerabilities in the 1) university domain; 2) industry domain; and 3) government domain are threatening the long-term stability and competitiveness of the nation's graduate education system. The report indicates that the structure of, nature of, and career opportunities from graduate education remain quite opaque to prospective students, particularly compared to undergraduate education. This results in many students not moving onto graduate education because the path to do so is often not clear and many students who do move on end up not completing their degrees as navigation of the system can be complicated and the career options often unclear. Moreover, resources to support graduate education are increasingly strained as costs for many programs increase, research funding become more competitive, state budgets become even more constrained, and the ability to shift costs to students stalls. In fact, these strains may create a bifurcated system with those with resources being able to attract the best and brightest faculty and students, enabling them to be more competitive for external resources; while other programs struggle to compete and force them to reduce offerings or raise tuition (or both).⁵

Industry concerns center on the rise of the knowledge-based economy (driving increased demand for workers with a graduate education) and a lack of connection between graduate education and industry. Many careers are increasingly requiring a graduate degree for access/upward mobility. Yet, many graduate programs have not yet made the shift from preparing students for an academic career to one in industry. And, many surveys of employers reveal that they do not just want employees with advanced knowledge, but also those with soft skills that allow them to lead, work in teams, and communicate their ideas. Many institutions are only beginning to recognize the importance of including this type of skill development in their graduate education programs.

Finally, the government plays a significant role in the financing of graduate education, particularly through the federal financial aid system and the nation's research funding infrastructure. Current data indicates that master's degree graduates who have debt typically carry a cumulative debt load of more than \$50,000 while doctoral degree graduates who borrow typically carry a debt load exceeding \$75,000. Some students receive partial or total funding for their tuition and fees (and a small stipend) through teaching or research assistantships. However, funding for these positions nationally is threatened due to recent State and institutional budget cuts and the effects of sequestration on federal research allocations. Moreover, findings from some studies in the early 2000s suggest that the increasing undergraduate debt burden may

³ Elsevier (2013). International Comparative Performance of the UK Research Base 2013. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263729/bis-13-1297-international-comparative-performance-of-the-UK-research-base-2013.pdf.

⁴ Gonzales, L.M., Allum, J.R., & Sowell, R.S. (2013). Graduate Enrollment and Degrees: 2002 to 2012. Washington, DC: Council of Graduate Schools.

⁵ Gumport (2011). Graduate Education and Research: Interdependence and Strain. In P.G. Altbach, P.J. Gumport, and R.O. Berdahl. (Eds). *American Higher Education in the Twenty-First Century: Social, Political, and Economic Challenges*. Baltimore: The Johns Hopkins University Press.

also have a negative impact on a student's likelihood of pursuing a graduate degree, at least in the first four years after completing their baccalaureate.⁶

Considering the future of graduate education requires a better understanding of the nation's changing demographic landscape, the evolving needs of employers in the knowledge-based economy, and the increasingly strained resources used to support graduate education. This report is intended to provide a snapshot of graduate education at the State University of New York as a first step in developing a System-wide strategy to:

- 1) Position SUNY campuses as institutions of choice for students to pursue advanced degrees;
- 2) Harness ways that faculty and students in graduate programs can benefit from the resources across the system, including supporting new forms of collaboration;
- 3) Identify ways that the system can better support campuses in providing graduate education;
- 4) Enhance linkages between graduate education and research; and
- 5) Extend the educational pipeline to encourage more SUNY students to pursue graduate studies.

This Data Brief will discuss the growth of graduate education programs across SUNY, explore current and anticipated system support of graduate education, detail enrollment trends (total, STEM, and under-represented students), examine the status of combined graduate degree programs (both intra- and inter-campus), provide an update on the status of graduate student tuition, and review rankings of graduate programs.

B. Overview of Graduate Education at SUNY

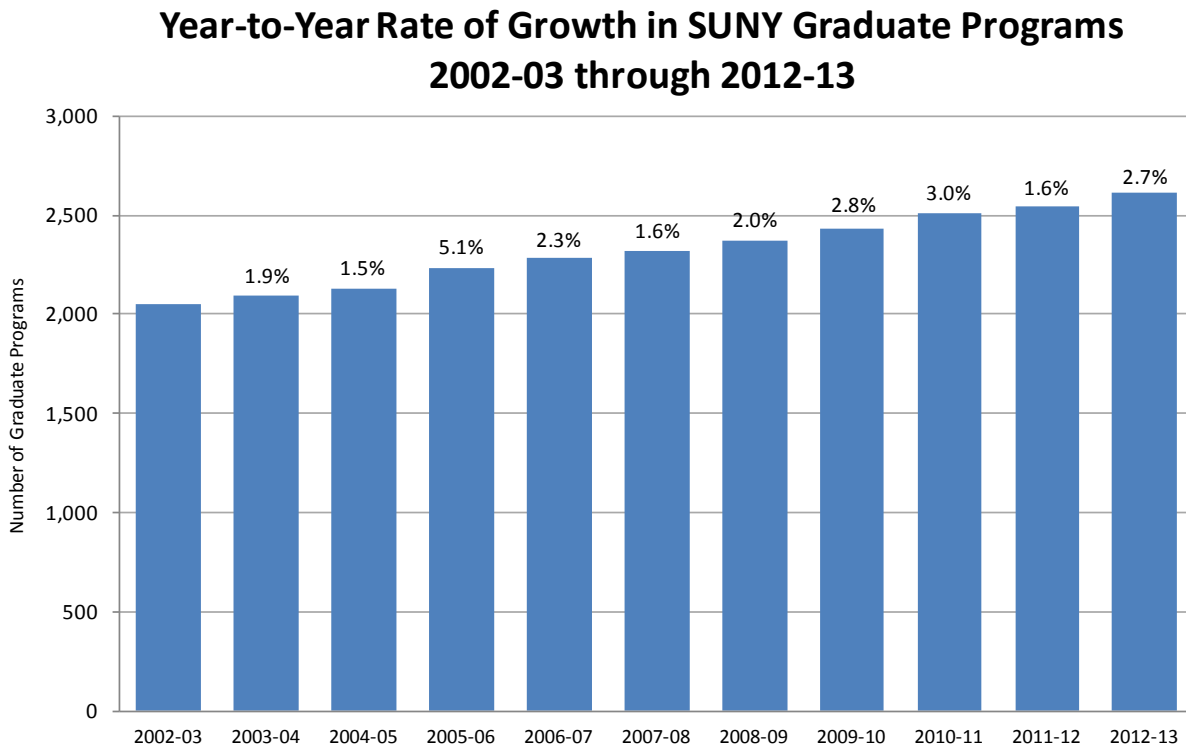
The story of graduate education at SUNY is one that is defined by a rapid expansion in the last forty years, a growing diversity among the students served, and increased interest in collaborative program development. SUNY's foray into graduate education is fairly recent, particularly by national standards. In its first academic year (1949-1950), SUNY campuses offered 385 master's, 6 doctoral, and 51 first professional degree programs (programs that were already in existence at the time campuses were brought under the SUNY umbrella). However, when the system was founded in 1948, its constituent campuses were generally heavily discouraged from pursuing doctoral education or significant research engagements.⁷ Thus, it was not until the Heald Commission, created by Governor Rockefeller in 1959, that SUNY began to actively grow its engagement in graduate education. The commission's report called specifically for the creation of an independent educational entity with its own Board of Trustees and also broadened SUNY's mission to include engagement in scholarly research, particularly at what would become the four doctoral degree granting university centers located at Albany, Binghamton, Buffalo, and Stony Brook. This new era for SUNY was launched under the direction of Chancellor Samuel Gould, a former chancellor in the University of California system (who had worked for Clark Kerr who led the development of California's higher education state systems).

⁶ Choy, S. (2000). *Debt burden four after school* (Statistical Analysis Report No. NCES 2000-188). Washington, D.C. National Center for Education Statistics. Heller, D. (2001). *Debts and decisions: student loans and their relationship to graduate school and career choice*. New Agenda Series. Indianapolis: Lumina Foundation. Dowd, A.C. & Malcom, L.E. (2012). Reducing Undergraduate Debt to Increase Latina and Latino Participation in STEM Professions. A report from the Center for Urban Education at the University of Southern California. Retrieved from <http://goo.gl/ffW269>.

⁷ Clark, J.B., Leslie, W.B., & O'Brien, K.P. (2010). Introduction. SUNY at 60: The Promise of the State University of New York. Albany, NY: SUNY Press.

SUNY has significantly expanded its role in graduate education to include comprehensive colleges, technology colleges, and one community college (i.e., FIT). As of Fall 2013, twenty-five SUNY institutions offer more than 2,500 graduate-level academic programs (see Chart 1 below) to more than 40,000 students. As can be seen in Chart 1, SUNY's graduate education offerings continue to expand each year. In the 2002-03 academic year, there were 2,054 registered graduate programs. By 2012-13, this number had increased to 2,616 registered graduate programs, a 27% increase in ten years. Ninety-seven of those new programs were at the doctoral level. Appendix A lists which SUNY campuses offer graduate programs and which graduate degree types (e.g. M.S., Ph.D., Pharm.D) are offered at each campus. Appendix G lists the new doctoral programs added since 2002.

Chart 1: Year-to-Year Rate of Growth in SUNY Graduate Programs 2002-03 through 2012-13



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Source: SUNY Academic Program Enterprise System (APES)

SUNY's comparatively recent entry to the delivery of doctoral programs also makes New York quite different from most other states in terms of the distribution of doctoral degree programs between the public and private sectors. In 2011-12, New York conferred more doctoral degrees (14,614) than any state other than California (which conferred 16,538). Moreover, in the vast majority of other states, the public sector confers more doctoral degrees than the private sector. As can be seen in Appendix F, in 2011-12, in New York, private institutions conferred more doctoral degrees (80%) (including research and professional practice) than SUNY and CUNY combined (20%).

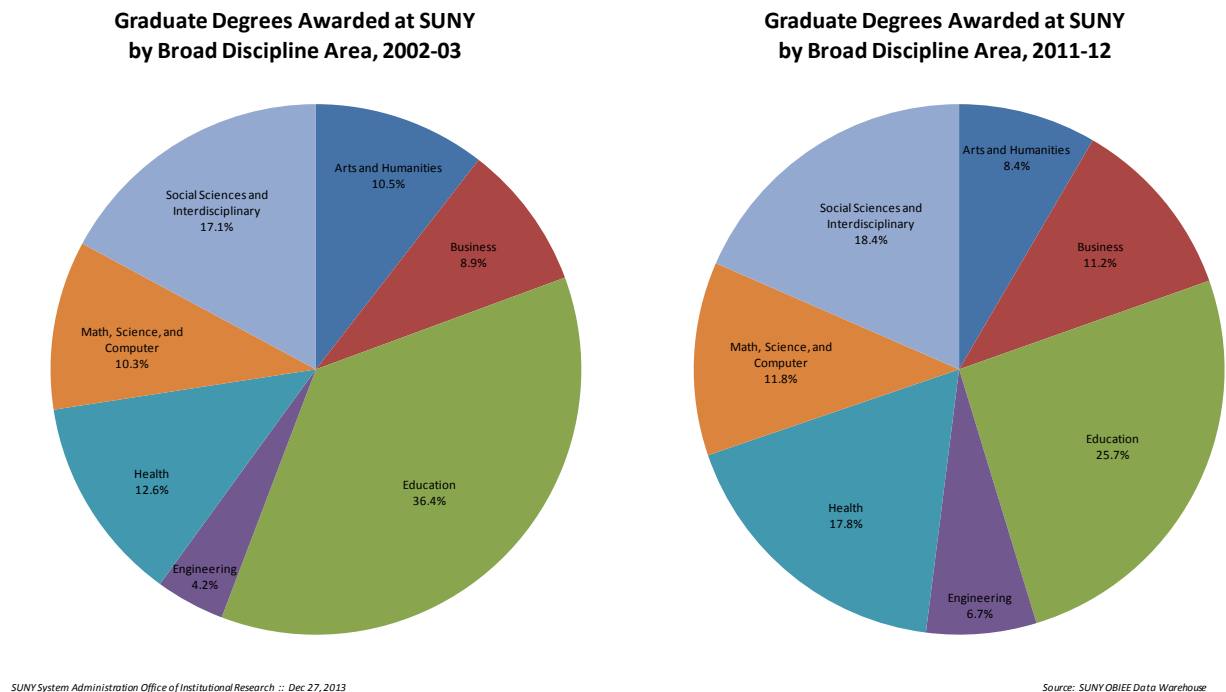
Overall, the individual academic disciplines in SUNY with the greatest graduate enrollment (see Appendix B) are Health Professions and Related Clinical Sciences (with 22.7% of the total graduate enrollment) and Education (18.0%), with the former being driven by the first professional enrollment, nearly all of which is in the Health Professions category. Collective enrollments in STEM related areas account for 23.6% of all graduate enrollments for Fall 2012, an increase from 19.7% in Fall 2002 (see Table 5). We have seen similar

shifts in degree attainment, with the proportion of doctoral and first professional degrees granted in the STEM fields increasing from 21% (2002-03) to 23.6% (2012-13).

At the master's level, the highest areas of enrollment are Education (24.4%), Business Management and related degrees (14.8%), and Health Professions and Related Clinical Sciences (14.7%). At the doctoral level, the highest areas of enrollment are Biological and Biomedical Sciences (15.6%), Engineering (11.3%), and Social Sciences (10.9%). As noted above, at the first professional level, the vast majority of enrollment is in Health Professions and Related Clinical Sciences (87.0%). The remaining 13.0% is all in Legal Professions and Studies. And at the graduate certificate level, 64.9% of enrollment is in Education.

Finally, the distribution of graduate degrees has shifted by broad discipline area over the last decade (see Chart 2 below). While the education field continues to comprise the largest number of graduate degrees, the percentage of degrees conferred in this disciplinary area has decreased from 36.4% to 25.7%, or by 10.7%. The percentage of degrees conferred in the Health, Engineering, and Business fields have increased the most over this time period (by 5.2%, 2.5%, and 2.3%, respectively). However, Math, Science, and Computer, as well as Social Sciences and Interdisciplinary, have seen slight increases also (.5% and 1.3%, respectively). The Arts and Humanities area is the only one other than Education that saw its proportion of degrees conferred shrink (by 2.1%). These shifts are likely due to changes in the labor market and the increased national interest on increasing graduate enrollments in the STEM and health fields.

Chart 2: Comparison of distribution of graduate degrees awarded by broad disciplinary area, 2002-2003 and 2011-2012



C. System Level Programmatic Support of Graduate Education: Current

Within SUNY, the direction and expansion of graduate education has been primarily driven by the campuses, rightly resting in the hands of the faculty. However, the system has developed some programs to aid campuses in learning about best practices, recruiting a high quality and diverse student base, and providing platforms for faculty to share ideas and develop collaborations.

Council of Graduate School Resources: SUNY has become a member of the Council of Graduate Schools, a national organization that provides data and other information about the status of and best practices regarding graduate education in the United States. Many campuses are also members of this organization; but SUNY's membership, in addition to providing system leaders with access to this important information, makes available CGS resources to those campuses which are not.

Networks of Excellence: In 2013, the Research Foundation established four Networks of Excellence dedicated to building relationships among campuses in critical research areas. These Networks are intended to unite the research capacity of the entire system to strengthen SUNY's leadership in the nation's research agenda and to pursue critical research agendas important to addressing some of humankind's most important problems. Given the strong connections between research and graduate education, these networks will very likely also provide additional support for graduate education (particularly support for graduate students) as well as provide opportunities for faculty to explore other collaborations that could strengthen the SUNY graduate education enterprise.

Graduate Diversity Fellowship Program (GDFFP): Since its inception in 1987, the GDFFP has allocated more than \$6 million annually to support nearly 500 students from underrepresented backgrounds to pursue their graduate education studies. In 2012-2013, these grants were distributed to different racial/ethnic backgrounds, including African American (34%), Asian (7%), Latino/Hispanic (34%), Native American (5%), and White (14%).

Tuition Reimbursement: Each year system administration allocates monies to support the graduate student tuition. The largest of these programs is for graduate and teaching assistants. Such funds (\$28.4 million) provide financial support to graduate students while they gain experience in research, teaching, special projects or other assignments related to their field of study. In order to provide a specific path to graduate study among students from disadvantaged backgrounds, a separate fund (\$3.1 million) makes tuition waivers available to graduate students who attained an undergraduate degree through EOP/HEOP or SEEK programs, and to economically disadvantaged students undertaking study toward first professional degrees. Support (\$2.5 million) is also provided for public school teachers who mentor teacher education students from and to supervisors of field work carried out by students in a social work curriculum.

Of particular note, the Graduate Opportunity Program (GOP) and Professional Study Tuition Program for Economically Disadvantaged (EDPS) support were initiated by Arthur O. Eve, the former Deputy Speaker of the Assembly, in an effort to provide opportunities for economically disadvantaged students to undertake graduate level study. Eligibility requirements for support reflect that intent. Students receiving GOP waivers must have completed their undergraduate study through an opportunity program in New York State (i.e. EOP, HEOP, SEEK) and students receiving EDPS waivers must meet the University's income guidelines for economic disadvantage.

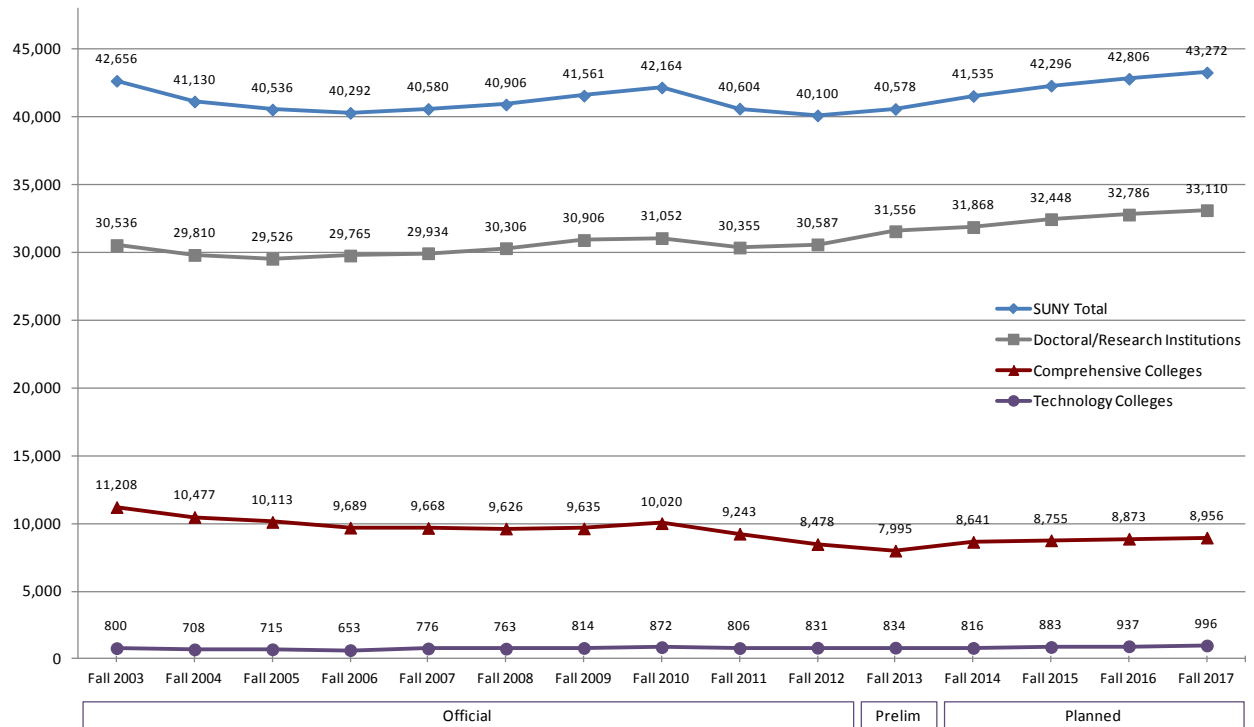
GOP tuition waivers are available at the four university centers, eleven comprehensive colleges, Upstate Medical Center, Downstate Medical Center, SUNY Optometry and SUNYIT and support students enrolled in Master's and Ph.D. programs. EDPS waivers support students in first professional programs (e.g. Law, Medicine, Dentistry, Architecture, and Optometry) and are available at the university centers, the health science centers and Optometry.

GOP funds support approximately 350 students and EDPS funds support more than 300 each year. While eligibility requirements are race/ethnicity neutral, there is a significant level of diversity among participating students. Approximately 65-70 percent of GOP recipients are underrepresented students and a similar percentage of EDPS recipients are minority students.

D. Enrollment Trends

Nationally, graduate enrollment for fall 2012 was 1.74 million students, meaning that SUNY educates approximately 2% of the nation's graduate students. Between 2011 and 2012, the number of first-time enrolled graduate students enrolled nationally increased by 1.8% to 461,000.⁸

Chart 3: Graduate Enrollment Trend at SUNY - Actual and Planned, Fall 2003 - Fall 2017



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Sources: SUNY OBII Data Warehouse, Preliminary Enrollment Survey, and Enrollment Planning Survey

Chart 3 shows the graduate student enrollment trend at SUNY along with the enrollment projections through Fall 2017 as submitted by the individual campuses.

Key Observations

While there have been a couple of notable enrollment decreases over the past ten years, preliminary figures for Fall 2013 suggest an approximate 1.2% increase this past year. Campus enrollment plans, submitted in spring 2013, indicate SUNY should see a continued, moderately-paced, increase in graduate enrollment between now and Fall 2017.

The increase in graduate enrollment between Fall 2012 and Fall 2013 is largely due to growth in the doctoral sector. This sector is expected to also lead the anticipated out-year growth, consistent with what is outlined in the research centers' approved SUNY 2020 plans.

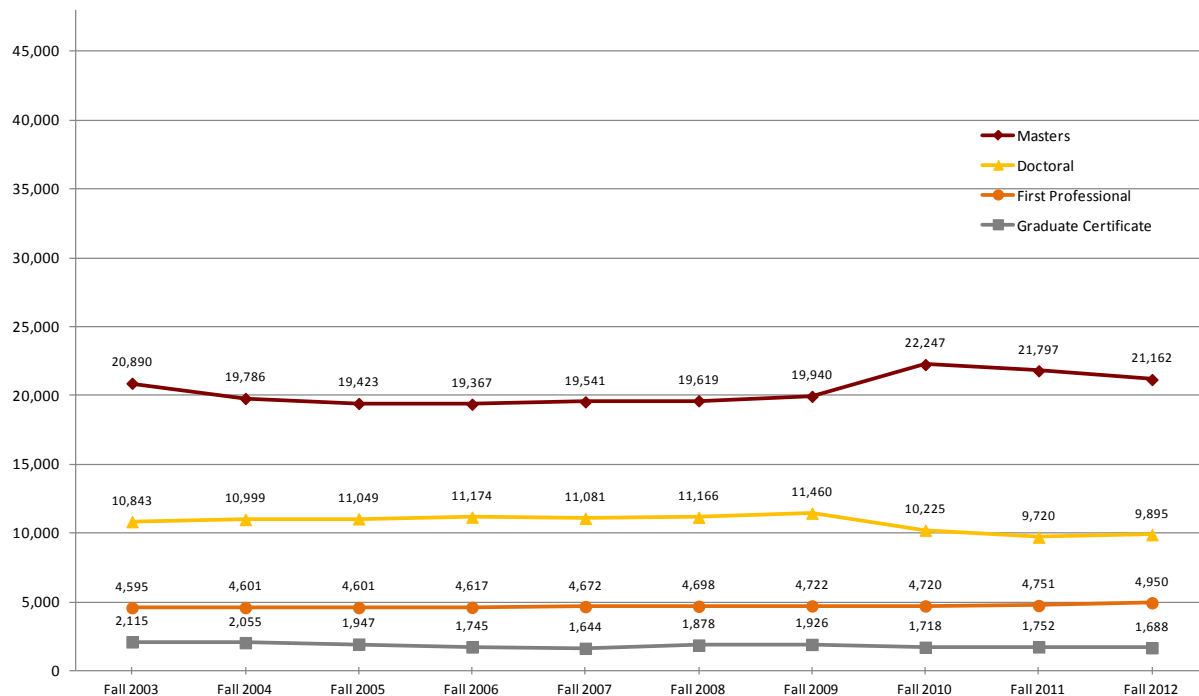
The comprehensive and technology colleges also anticipate their graduate populations to increase. Over the past several years, some of SUNY's comprehensive colleges have struggled to address a decline in the number of students seeking graduate degrees in education fields. As a result, these colleges have been

⁸ This number includes graduate certificate, education specialists, master's and doctoral programs.

expanding their graduate offerings in other areas and expect their graduate enrollment numbers to show recovery.

Not shown specifically on the chart is SUNY's graduate enrollment at the community colleges. Fashion Institute of Technology (FIT) is the only community college offering graduate programs. They enroll approximately 200 students per year in their programs and anticipate expanding their offerings at the graduate level.

Chart 4: Graduate Enrollment Trend by Award Level at SUNY, Fall 2003 - Fall 2017



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Source: SUNY OBII Data Warehouse

Chart 4 shows a breakdown of SUNY's total graduate enrollment by award level – master's, doctoral, first professional, and graduate certificate. Preliminary data for Fall 2013 is not broken out by award level, but we know there is an overall upswing in graduate enrollments in Fall 2013 (see Chart 3).

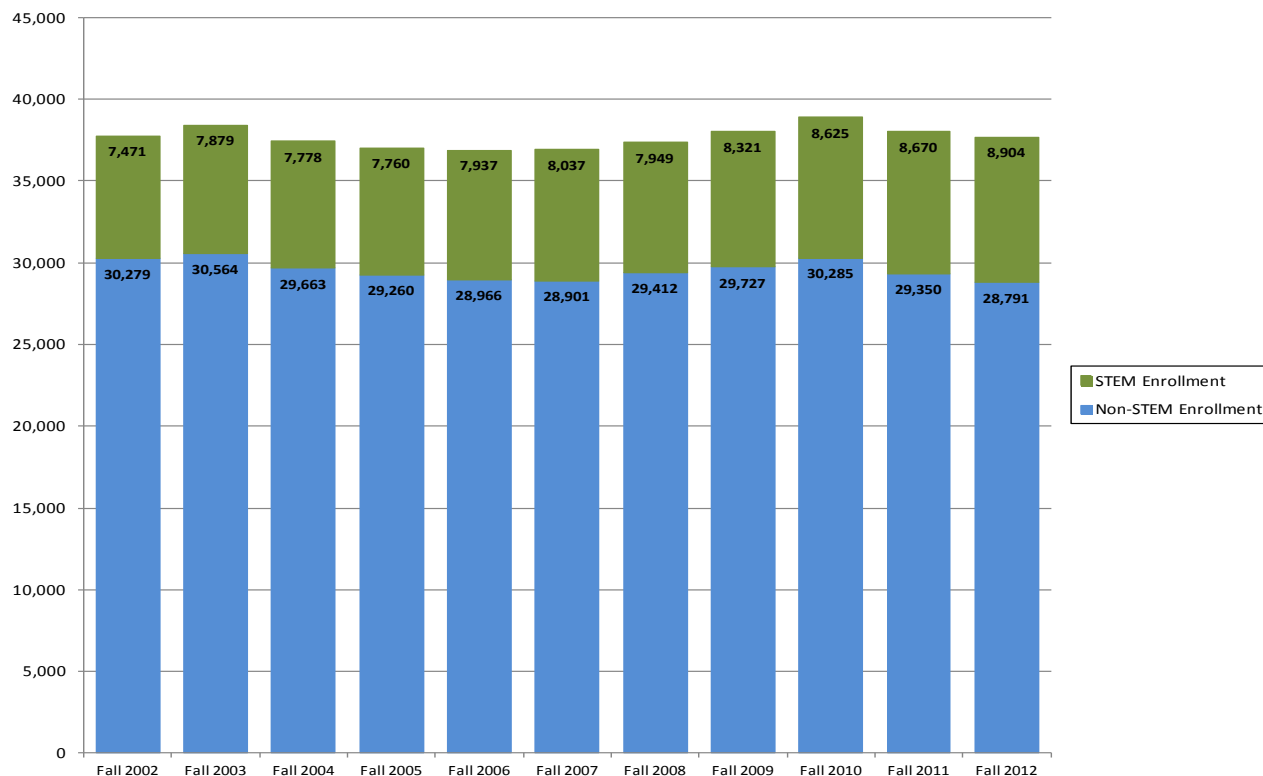
Key Observations

Clearly seen is the fact that the majority of graduate enrollment at SUNY is at the master's level. In the most recent years, the number of students enrolled in a doctoral program is less than half of those enrolled in a master's program. And the number enrolled in a first professional program is approximately half of those in a doctoral program.

There was an interesting shift between Fall 2009 and Fall 2010 – the number of students enrolled in a master's program increased by approximately the same amount as the number in a doctoral program declined, essentially balancing each other out. This affect can be attributed to a shift in how students were/are reported to System Administration and does not necessarily represent a shift in students' intentions. Previously, some students who pursued a master's degree as part of their path to a doctoral degree were reported as doctoral enrollments if they had been also admitted to the doctoral program.

First professional enrollment has been remarkably stable over the past ten years, largely due to fairly stringent space and financial constraints on these extremely specialized programs and, thus, placing built-in limits on the size of these programs.

Chart 5: All Graduate Enrollment and STEM Graduate Enrollment



This table provides information about the number of STEM related graduate enrollments compared with total graduate enrollment, between Fall 2002 and Fall 2012.⁹

Key Observations

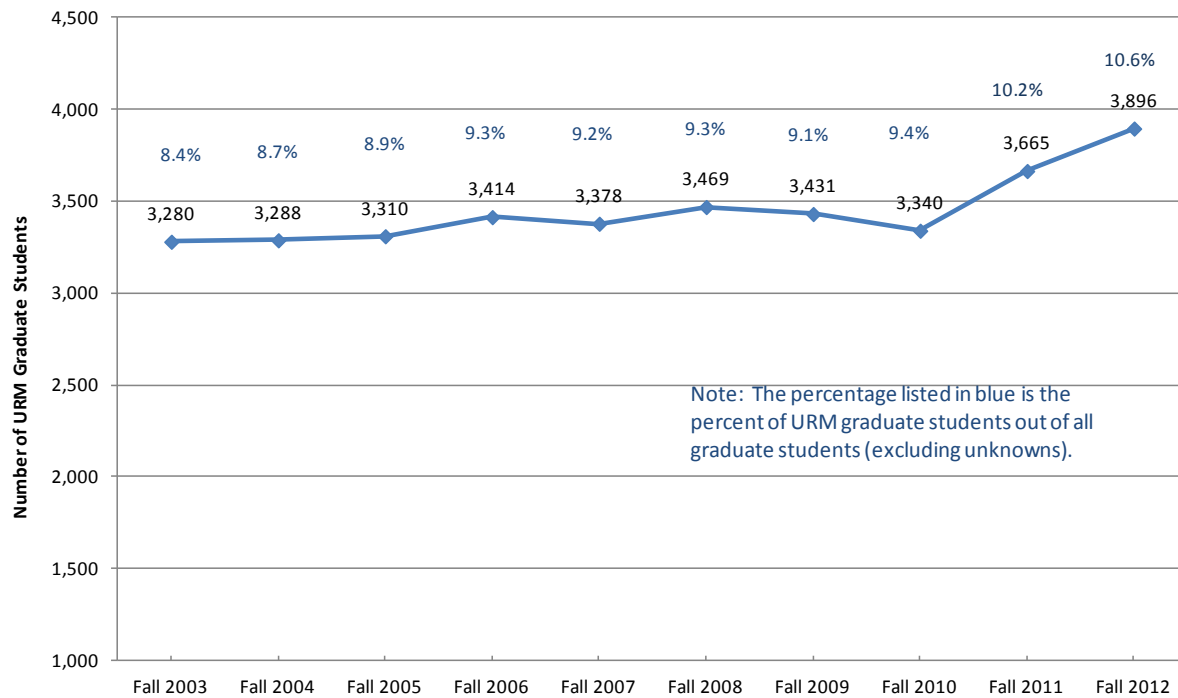
Students enrolled in graduate STEM fields has increased 19% from 7,471 (Fall 2002) to 8,904 (Fall 2012). At the same time, overall graduate program enrollment has remained relatively stable from Fall 2002 to Fall 2012 (37,750 to 37,695 students).

Enrollments in master's level STEM programs increased from Fall 2002 to Fall 2012 (2,296 to 3,966 students), though enrollments in doctoral level STEM programs declined from Fall 2002 to Fall 2012 (5,122 to 4,904 students).

[As noted in Chart 3, preliminary data suggests that overall graduate education enrollments increased between Fall 2012 and Fall 2013 and we anticipate that overall STEM enrollments also increased during this period, but the data is not yet accessible at this level of detail.]

⁹ For a full discussion of how SUNY has defined STEM, see the data brief on STEM education presented to SUNY Board of Trustees at the November 2013 meeting.

Chart 6: Under-represented Minority Graduate Students at SUNY, Fall 2003 – Fall 2012



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Source: SUNY OBIEE Data Warehouse

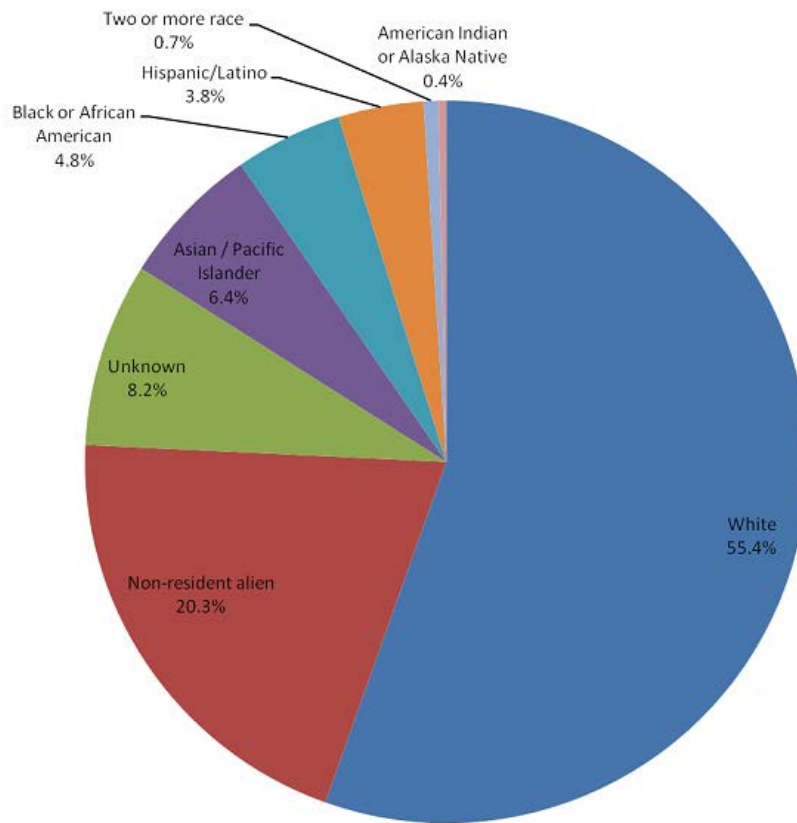
This chart provides a review of under-represented minority students as a proportion of graduate education enrollments.

Key Observations

Enrollment among under-represented students has increased significantly over the last two years, now accounting for over 10% of total graduate education enrollments.

This rapid gain in under-represented enrollments followed several previous years of slower, though mostly continual growth.

Chart 7: Graduate Education Enrollment by Race and Ethnicity, Fall 2012



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Source: SUNY OBIIE Data Warehouse

Chart 7 shows the breakdown of SUNY's total graduate education enrollment by race and ethnicity.

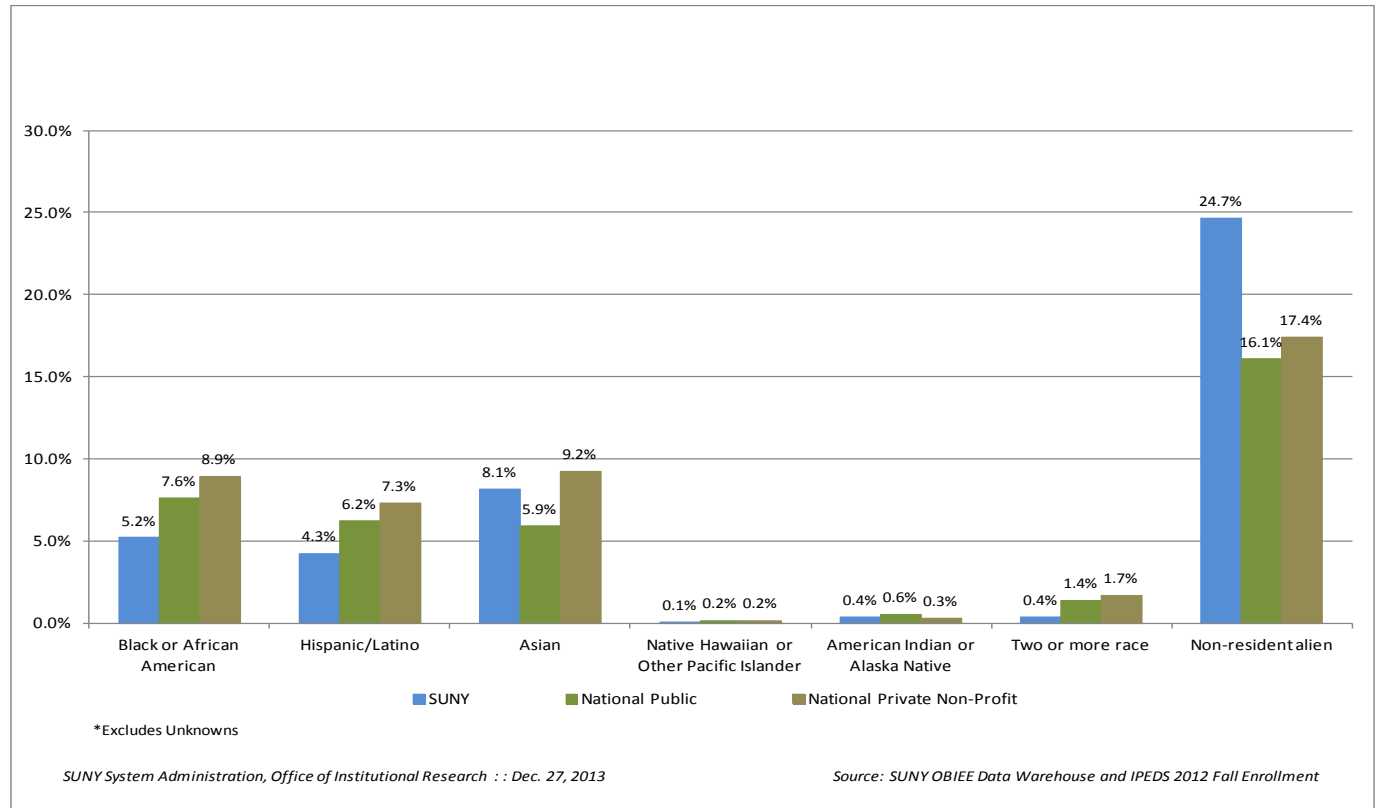
Key Observations

The two largest groups of students that comprise SUNY's graduate education enrollments are whites (55.4%) and international students (20.3%), mirroring the national enrollment patterns.

Of underrepresented minorities in graduate education, enrollments come from Asian/Pacific Islander (6.4%); Black or African American (4.8%); and Hispanic/Latino (3.8%).

Breakouts of campus enrollments by race and ethnicity can be found in Appendix E.

Chart 8: Minority and Non-resident Graduate Students as a Percentage of All Graduate Enrollment* at Doctoral/Research Institutions, SUNY and National Institutions, Fall 2011



This chart provides a review of under-represented minorities as a proportion of graduate education enrollments at our doctoral institutions, as compared with national public doctoral institutions and national private, non-profit doctoral institutions.

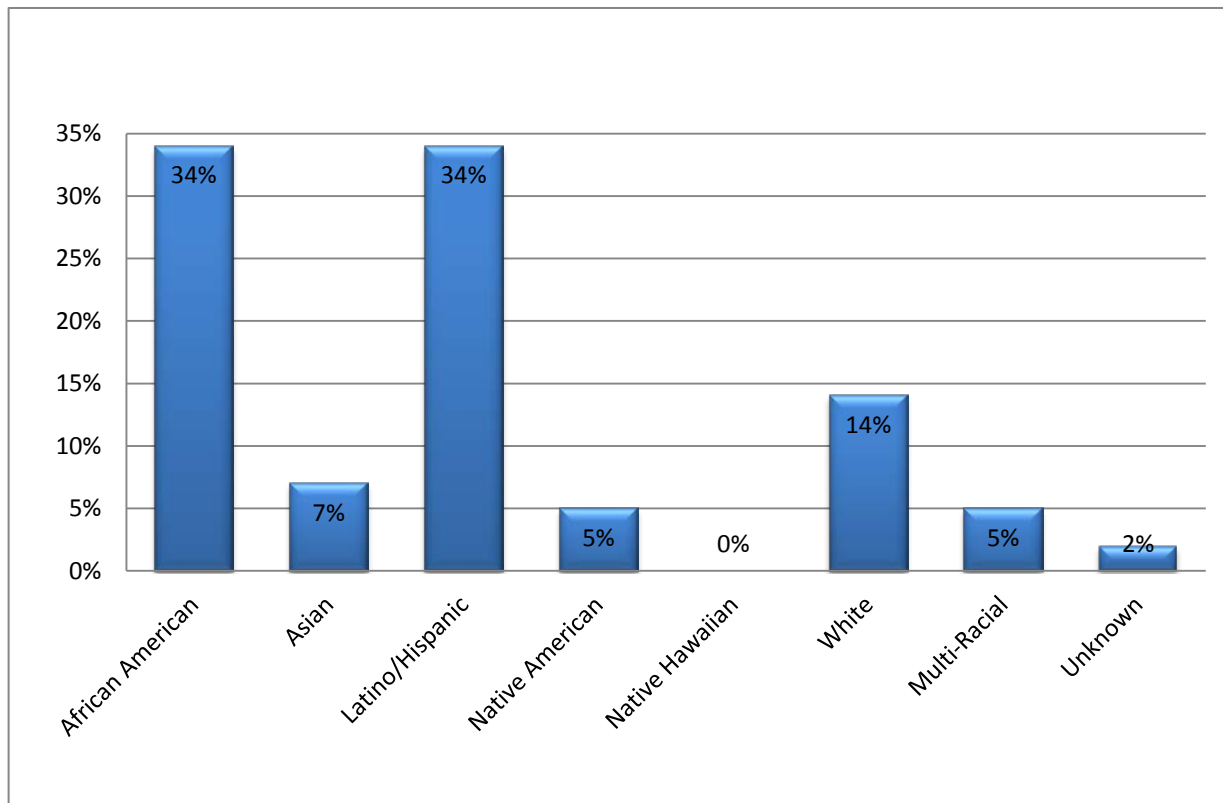
Key Observations

While SUNY campuses have made significant strides in expanding access to under-represented minorities at the graduate level, progress is still needed to meet national averages in terms of Black/African-American and Hispanic/Latino enrollments.

SUNY campuses do better at attracting Asian students than national public doctoral institutions, though not quite as good as national private, non-profit institutions.

SUNY exceeds national averages of both public and private, non-profit institutions in terms of enrolling international (non-resident alien) students in graduate programs.

Chart 9: Graduate Diversity Fellowships by Race and Ethnicity (2012-2013)



Source: Graduate Diversity Fellowship Program, 2012-2013 annual report.

Chart 9 shows the breakdown of how the SUNY Graduate Diversity Fellowships were distributed by Race and Ethnicity in Academic Year 2012-2013.

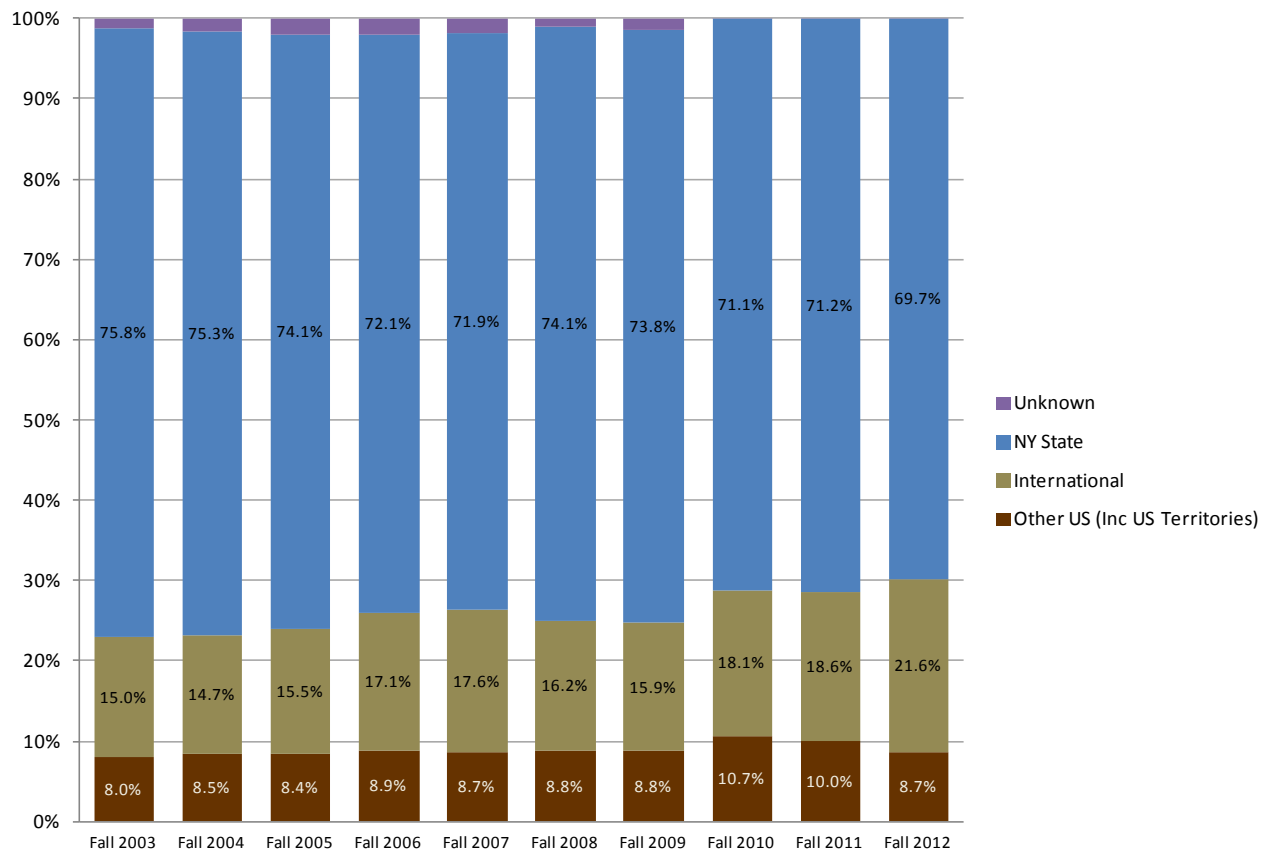
Key Observations

Approximately one third of the fellowships (171) were allocated to African American students and one-third (168) to Latino/Hispanic Students.

The other third were awarded among Asian (33), Native American (23), and White (69) students. (Thirty awards were given to students of multi-racial or unknown backgrounds).

This program was cited as a national example by the Commission on the Future of Graduate Education in the United States as a model for incentivizing under-represented minority undergraduate students to pursue graduate education.

Chart 10: Residency Trend of New Graduate Students at SUNY, Fall 2003 – Fall 2012



SUNY System Administration Office of Institutional Research :: Dec 18, 2013

Source: SUNY OBIIE Data Warehouse

Chart 10 illustrates the 10-year residency trends of SUNY's graduate students. The students are categorized into four different groups – NY State, other U.S. states (including U.S. territories), international, and unknown.

Key Observations

The clear majority of graduate students enrolled at a SUNY institution continue to be from New York State. Though, an increasing number are from out-of-state.

The percentage of out-of-state domestic (Other-U.S.) students has not seen much variability other than seemingly slight blips in Fall 2010 and Fall 2011, staying essentially between 8% and 9% over the past ten years.

The International percentage of students has shown significant growth, increasing from 15.0% in Fall 2003 to 21.6% in Fall 2012. This growth in international student enrollments mirrors a national trend with graduate enrollments increasingly coming from outside of the U.S.

With both the Other U.S. and International categories combined, the total out-of-state population of graduate students has grown from 23.0% to 30.3% over the past ten years, even while SUNY's graduate student charges were increasing to the same level as that of the national average of public and private institutions (see Part G, Chart 14).

E. Time to Degree

Chart 11: Average Years to Complete Graduate Degree at SUNY

Average Years to Complete Graduate Degree at SUNY (at starting institution)

				2009-2010	2010-2011	2011-2012	2012-2013*	2009-2010	2010-2011	2011-2012	2012-2013*
			Awarding Campus	Masters	Masters	Masters	Masters	Doctoral	Doctoral	Doctoral	Doctoral
SUNY Total				2.44	2.37	2.39	2.59	5.13	5.39	5.65	5.83
State Operated Total				2.44	2.38	2.39	2.60	5.13	5.39	5.65	5.83
	Doctoral Degree Granting Institutions Total			2.38	2.31	2.32	2.55	5.13	5.39	5.65	5.83
	Comprehensive Colleges Total			2.55	2.48	2.50	2.65				
	Technology Colleges Total			2.89	2.81	2.96	3.03				
Community Colleges Total				1.96	1.92	2.30	2.03				

* 2012-13 overall figures are preliminary due to missing Cornell and Ceramics data

SUNY System Administration Office of Institutional Research :: Dec 26, 2013

Source: SUNY OBIIE Data Warehouse

The chart shows the average number of years it takes students to complete their graduate degree at a SUNY campus. The data is broken out by sector and reported, in aggregate, for both master's and doctoral level programs. A breakout of completion rates for each campus can be found in Appendix D. The numbers shown in 2012-2013 will likely be more consistent with previous years after Cornell and Alfred Ceramics report their data as those campuses have historically had among the lowest time to degree.

Key Observations

The average time to degree for master's programs has remained remarkably consistent over the last four years. The longest time to degree is in the technology colleges, likely because of the high number of part-time students in those programs.

Most master's programs are designed to be completed in no more than two years of full-time study. Given that many students pursue their graduate studies on a part-time basis, it is not surprising that average time-to-degree is between two and three years.

Among doctoral programs, SUNY's time to degree is relatively low. Although, we have seen a slight increase in the time to degree for each of the last three years, it is not clear what has contributed to these increases. It is likely that the economic downturn is likely part of the cause, resulting in some students shifting to part time study for financial reasons and others delaying their graduation until post-graduation employment opportunities improved.

National data on time to degree is not regularly reported, though the NSF reports that for doctorate recipients in academic year 2007-2008, the median time to degree was 7.7 years, with physical sciences and engineering taking the shortest time (6.7 years) and education the longest (12.7 years). By median comparison, SUNY has a shorter time to degree than the national average.

It should be noted that it is often difficult to make pure comparisons about time-to-degree with graduate degrees, particularly at the aggregate level, as there is a high degree of differentiation among programs based on disciplinary and institutional factors.

F. Combined Graduate Degree Programs

Many SUNY campuses have very healthy numbers of combined degree programs at the graduate level and between the graduate and undergraduate levels, within their institution (see Table 12). Many of the combined degree programs include at least one professional degree (e.g., MBA, MPA) combined with a particular field of study. However, the number of joint-degrees that include more than one institution are very low—only 8 campuses have such programs.

Table 12: Combined Programs at the Graduate Level - Inter- and Intra-Campus Summary

Campus/Sector	Total	Undergrad - Grad	Grad - Grad
Total Combined Programs	725	544	181
Inter-Campus	80	49	31
Albany	168	156	12
Binghamton	107	105	2
Buffalo	59	47	12
Stony Brook	123	113	10
Cornell*	117	7	110
Other Doctoral	17	15	2
Comprehensive and Technology Colleges	54	52	2

* Programs at Cornell are registered as combined because they cross administrative units, e.g. NYS Statutory Colleges and Cornell Endowed, rather than crossing different program areas or degree levels.

This table provides the number of all inter- and intra-campus combined programs that include graduate-level programs.

Key Observations

The vast majority of combined programs with one or more graduate education components are a combination of programs within a single institution.

The majority of these are undergraduate-to-graduate “feeder” pathways, linking various undergraduate degrees with certain specific graduate degrees such as MBA, MS, and so forth.

Others are direct graduate-graduate pairings, such as combining a Master of Urban Planning with a Master of Architecture degree. While this does not necessarily increase the institutions’ overall academic offerings, it allows for institutions to combine resources from multiple departments to offer innovative programs that are interdisciplinary based and may reflect a changing labor market, often at minimal cost to the campus.

Table 13: Inter-Campus Collaborations at the Graduate Level

Inter-Campus Partnerships:		Total	Undergrad - Grad	Grad - Grad
Total		84	51	34
Unduplicated Total		80	49	31
Albany	Downstate Medical	2	0	2
	Optometry	1	1	0
	Albany Law	49	44	5
	NYS DOH	11	1	10
	Grad Union U	2	0	2
Buffalo	Buffalo State	1	1	0
	Brock Univ Canada	1	0	1
	Hauptmann Woodward Inst.	2	0	2
Stony Brook	Touro Law Center	2	0	2
Downstate Medical	Albany	2	0	2
	Kings Co Hosp	1	0	1
	Harlem Hosp C	1	0	1
	Polytechnic Univ	1	0	1
	Empire State (pending)	0	0	1
Upstate Medical	Syracuse Univ	2	0	2
Optometry	Albany	1	1	0
	St John Main	1	1	0
	City College	1	1	0
Brockport	Nazareth College	1	0	1
	Visual Studies Workshop	1	0	1
Buffalo State	Buffalo	1	1	0

This table provides the number of all inter-campus (within and outside of SUNY) combined programs that include at least one graduate-level programs.

Key Observations

There are 80 inter-institutional programs offered by 8 SUNY campuses. Fifty-one of these programs are a combination of graduate and undergraduate programs, mostly with the undergraduate program serving as a feeder for the graduate program. For example, there are 44 undergraduate programs at the University at Albany that lead to a graduate law program at Albany Law School, many of those are a combination of undergraduate and JD degrees; though there are five joint graduate degrees with students receiving a JD along with a master's in social work, urban and regional planning, or public ethic (see Appendix G).

Thirty-one inter-campus programs include multiple graduate degrees; only three of these programs are between two SUNY campuses. For example, the University at Buffalo and Buffalo State College have a combined program that affords undergraduate education majors at Buffalo State College to transfer to a doctoral program in Special Education at the University at Buffalo. Downstate Medical has partnered with the College of Nanoscale Science and Engineering to pair nanoscale engineering with medical research.

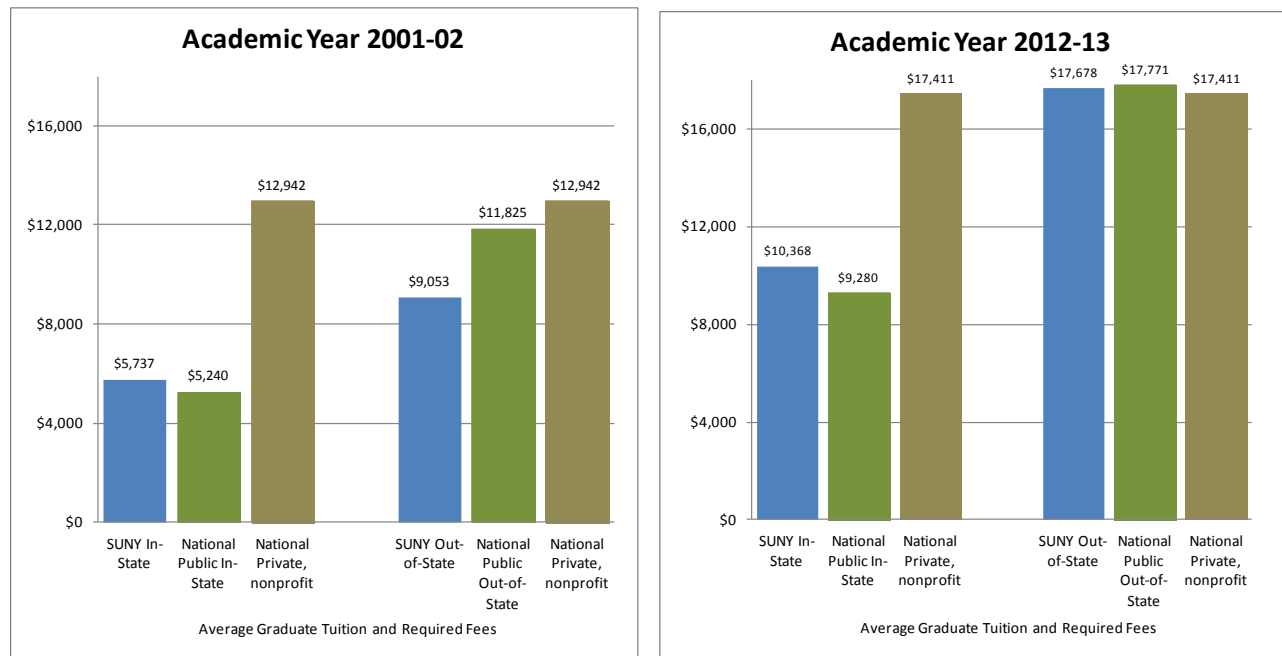
The University at Albany partners with the New York State Department of Health/Wadsworth Laboratories to provide graduate degrees in Epidemiology, Public Health, and so forth. The partnership provides for a stronger clinical component than Albany alone could offer. A similar arrangement exists between the University at Buffalo and Hauptman-Woodward Medical Research Institute to offer a doctoral degree in structural biology.

An innovative international collaboration has developed between Buffalo and Brock University (Canada) to offer a combined master's degree in Canadian Studies.

G. Graduate Tuition and Fees

Chart 14: Graduate Tuition and Required Fees at SUNY State-Operated Institutions* Compared to National Averages

- * Notes: 1. *Ceramics and Cornell's tuition rates are excluded from these averages.*
2. *Also, this represents the standard graduate tuition and fee rates and doesn't reflect differential tuition that may be charged for specialized programs.*



Sources: National Center for Education Statistics IPEDS Institutional Characteristics survey and SUNY Basic Student Charges Survey

Key Observations

Of particular interest when comparing SUNY's graduate tuition charges with that of national averages for public and private institutions is that the in-state relationship between the three has remained essentially the same between academic years 2001-02 and 2012-13 – that relationship being that both the average for SUNY and for the National Publics is significantly lower than the average for the National Privates.

However, while SUNY's average out-of-state tuition and required fees, ten or so years ago, was notably less than both that of the National Publics and National Privates, and the average for the National Publics was also a fair amount lower than the National Privates, all three of them are now approximately the same. This phenomenon may make one wonder if there has been an apparent affect on out-of-state graduate student recruitment and enrollment. As discussed previously (Part D, Chart 10), though, even with the increase in out-of-state tuition and required fees, out-of-state graduate enrollment has been increasing.

As noted earlier, to help offset the cost of education, SUNY employs graduate students in a range of teaching, research, and administrative assistantships. As of 2013, 6,640 graduate students were employed by SUNY campuses. Sixty-eight percent were funded through campus and system operation budgets and 32% were employed through various external funded grants.

H: Graduate Program Rankings

Graduate programs across various departments and colleges at SUNY schools are recognized nationally through different ranking initiatives. In order to provide a snapshot of external graduate program recognition, we examined the latest US World News and Report (U.S. News) rankings. Overall, 55 graduate programs or departments have distinguished themselves within the top 50 of their discipline/field based on the high qualifications of the students they attract, their faculty's contributions to the field, peer rankings, and/or their graduate employment statistics. Of these 55 programs, 7 rank in the top 10 of their fields, 22 rank between 11 and 25, and 6 programs rank between 26 and 50. (Table 16 lists the SUNY Programs ranked among the top 20 of their field by U.S. News).

U.S. News ranking methodology: Program quality is based on two types of data: expert opinions and statistical indicators that measure the quality of a school's faculty, research, and students. U.S. News publishes 11 main discipline-based ranking lists, and many specialty rankings within these main disciplines. Specialty rankings are based solely on nominations from school officials. Schools are included only if they received seven or more nominations in that specialty area and are numerically ranked in descending order. The data come from surveys of administrators at more than 1,250 programs and more than 13,000 faculty and professionals, conducted during the fall of 2012 and early 2013.

Chart 15: Disciplinary Distribution of SUNY's 55 graduate programs ranked in top 50

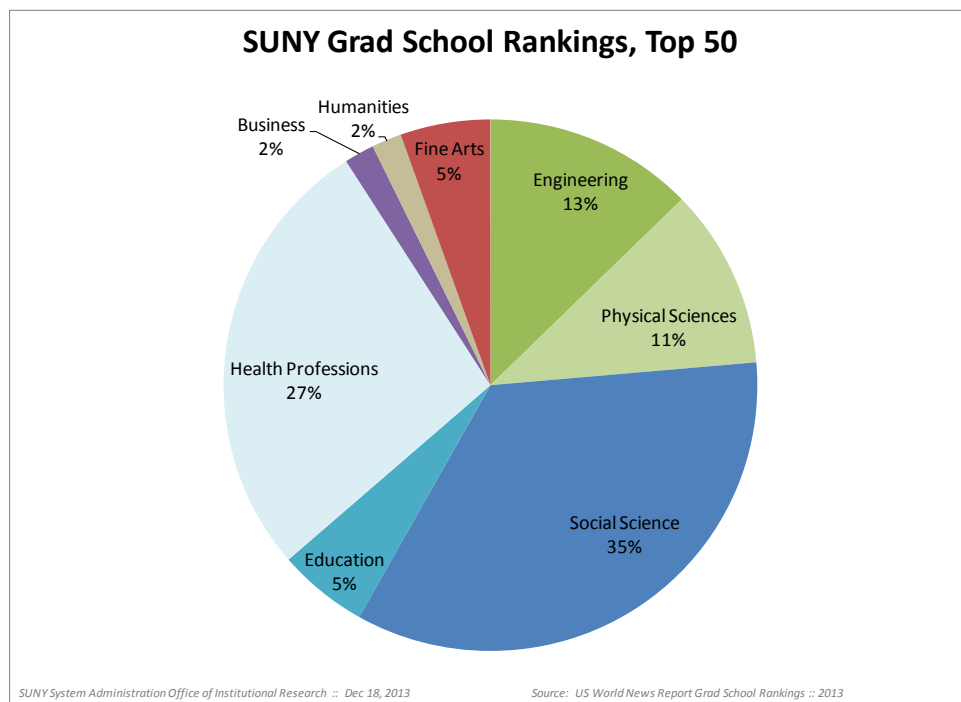


Table 16: List of SUNY Graduate Programs ranked in the top 20 by US News and World Report

Campus	Graduate School List	Area	Rank
Alfred University - Ceramics	Fine Arts - Ceramics	Engineering	1
Cornell - Veterinary Medicine	Veterinary Medicine	Health Professions	1
University at Albany	Criminology	Social Science	2
University at Albany	Public Affairs - Information and Tech. Management	Social Science	3
Stony Brook University	Physics - Nuclear	Physical Sciences	4
Stony Brook University	Math - Geometry	Physical Sciences	6
Stony Brook University	Online Graduate Nursing	Health Professions	8
Stony Brook University	Clinical Psychology	Social Science	11
Alfred University - Ceramics	Fine Arts	Fine Arts	11
Stony Brook University	Math - Topology	Physical Sciences	12
Stony Brook University	Physician Assistant	Health Professions	13
Cornell- College of Human Ecology	Health Administration	Health Professions	14
University at Albany	Public Affairs - Public Mngmt. Administration	Social Science	14
Alfred University - Ceramics	Fine Arts - Sculpture	Fine Arts	15
University at Albany	Public Affairs	Social Science	16
University at Albany	Public Affairs - Public Finance and Budgeting	Social Science	16
University at Buffalo	Audiology	Health Professions	17
University at Buffalo	Nursing-Anesthesia	Health Professions	17
University at Buffalo	Pharmacy	Health Professions	17
University at Albany	Public Affairs - Nonprofit Management	Social Science	18
Downstate	Nursing-Midwifery	Health Professions	19
Source: US World News Report Grad School Rankings, accessed December 2013			

I. The Way Forward

Despite its relatively recent significant engagement in the development and delivery of graduate education programs, 25 SUNY campuses now offer more than 2,500 graduate-level academic programs to more than 40,000 students. SUNY has provided some system-level support for these efforts, though most of the effort has been carried forward by campus faculty and academic leaders. However, in recognition of the growing importance of graduate education to our campuses and to the New York State, SUNY and campus leaders are collaboratively exploring ways to expand how the system can support campus level efforts in graduate education. The following are some initiatives that are currently being explored with our graduate deans.

Marketing and Recruitment: Unlike at the undergraduate level, where we have adopted a common application for the system, all those seeking to enter a SUNY graduate program apply directly to the program on a campus. This diversity admission process is a result of the specialized nature of graduate

education and usually intense involvement of faculty in the recruitment and admission process for graduate programs (a practice that is appropriate to be retained by the faculty). However, there have been few System level efforts to market graduate education, with campuses having historically preferred to handle outreach and admissions on their own. However, the increasingly competitive environment, demographic shifts resulting in a declining population base across upstate New York, and the expansion of graduate education to 25 campuses has resulted in a desire among our graduate deans to leverage the Power of SUNY to raise the System's profile as a provider of high-quality graduate education. The Office of the Provost is working with the SUNY's marketing team to enhance the profile of graduate education on the SUNY website as well as developing a marketing plan to raise SUNY's national graduate education profile.

Semi-Annual Convening of Graduate Deans: In order to capitalize on the full breadth and depth of graduate education resources across the System, it is critical to bring campus leaders together to discuss shared concerns and potential collaborative opportunities. Already, several of SUNY's graduate education deans meet once a year at the annual meeting of the Council of Graduate Schools in December. However, participation is limited to those able to attend the annual CGS meeting. In order to provide an additional opportunity for all graduate deans to gather and develop collaborative relationships, the Office of the Provost will be working with campus graduate deans to establish at least two additional gatherings each year to take place in New York. One of these gatherings is anticipated to be held in conjunction with a meeting of the SUNY Vice Presidents of Research, in order to foster greater dialogue and collaboration between graduate education and research.

Development of Graduate Education Collaboration Fund: Following on the model of SUNY's research collaboration fund, which provided small seed grants to foster researchers at multiple institutions to develop collaborative research projects; SUNY is developing a similar mechanism to incentive faculty in graduate education programs at multiple institutions to develop new models of collaboration to enhance graduate education across the system. For example, one model might be to use the infrastructure developed by SUNY's Center for Collaborative Online and International Learning to have faculty at different campuses co-teach courses to students from across the system. A more aggressive approach would be to develop joint degree programs that utilize resources from multiple campuses.