# Controlling Costs and Optimizing the Value of Graduate Degrees

An Action Agenda, Recommendations, and Report for Students, Universities, and the Nation





#### About the Council of Graduate Schools (CGS)

CGS is an association of 460 graduate institutions dedicated to advancing graduate education and research. In collaboration with our members, we advocate for graduate education, develop innovative research, and establish best practices. Our projects generate information and data that help graduate deans and their institutions better support graduate students and programs.

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Controlling Costs and Optimizing the Value of Graduate Degrees: An Action Agenda and Toolkit for Students, Universities, and the Nation

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## Introduction

Since the introduction of the G.I. Bill in 1944, the United States has continuously invested in graduate education as a strategy for economic and workforce development and its value is clear. For individuals, graduate degrees are portals to valuable, well-remunerated middleclass careers, which are seen by those who hold them as highly satisfying, meaningful, and stable. For example, the Georgetown Center for Education and the Workforce estimates a lifetime earnings premium for master's degree holders at \$400,000 over those with bachelor's degrees and \$1.2 million for those who earned doctorates (Carnevale, Cheah, and Wenzinger, 2021). The Bureau of Labor Statistics, likewise, consistently reports lower unemployment rates for graduate degree holders (BLS, 2024). Beyond these individual benefits, however, graduate education is also of crucial value to the broader society. It is essential to economic competitiveness and innovation, critical to national security, and imperative for protecting the health and safety of American citizens. U.S. graduate programs have served as incubators for new technologies, inventions, and research that have improved every aspect of American lives.<sup>1</sup> These successes have inspired other leading global economies to emulate the educational and research powerhouses located in the United States and to send their students to the U.S. for graduate study.

Any factor or trend that threatens the quality of the graduate enterprise undermines our capacity – as communities and as a nation – to develop the knowledge and cutting-edge technologies that will make business and government more efficient and effective, keep U.S. citizens safe from both natural and manmade disasters, and improve the quality of life for all. At the current moment, the rising costs of graduate education—both to individual students and to universities— is one such factor, threatening continued access to and success in both master's and Ph.D. education for all current and prospective students with the ability, curiosity, and motivation to pursue them. By most estimates<sup>2</sup>, the sticker price of graduate education is rising faster than the rate of inflation that is affecting us all. These rising costs contribute to the growing skepticism about the value proposition of graduate

<sup>&</sup>lt;sup>1</sup> The link between graduate training at a U.S. institution and innovative research accomplishments is reflected in the fact that the U.S. continues to top the list of countries where the largest number of Nobel laureates completed their Ph.D. or MD (Schlagberger et. al., 2017).

<sup>&</sup>lt;sup>2</sup> Hanson, Melanie. "College Tuition Inflation Rate" EducationData.org, September 9, 2024, https://educationdata.org/college-tuition-inflation-rate

education among prospective students, legislators, and the public at large. Questions such as, "Will I ever economically recoup the time and tuition I invested in pursuing a graduate degree" or "Why should taxpayer dollars be used to subsidize advanced degrees when there are plenty of well-paying jobs that do not require even a 4-year college degree?" dominate legislative hearings and press coverage of higher education. Reports on graduate student debt load and return on investment are usually flawed and exaggerated. Data upon which they rely frequently conflates undergraduate, graduate, and professional school debt, for example. Likewise, they often ignore less tangible, but no less important and real, personal benefits of graduate education such as job satisfaction. Even more often, they disregard the public benefits of investments in graduate education in fields of crucial importance, but with modest salaries, such as social work, school counseling, and secondary math and science education. Nevertheless, it is unequivocal that the cost of a graduate degree – to students, taxpayers, and universities – is rising and it is unlikely that new revenue streams can keep pace, particularly considering current political pressures to reduce government spending.

A central challenge that our country faces today is how to use finite resources to optimize the balance between access, affordability, program quality, and student success. For this reason, in October 2023, the Council of Graduate Schools (CGS) formed the Cost of Graduate Education (CGE) taskforce to study this complex issue. This report and accompanying toolkit build on the extensive experience of taskforce members, who, as graduate deans, are working daily to address these issues. The taskforce also relied on the expertise of a diverse group of CGS members and other outside experts.

The work of the taskforce was grounded in the vision of providing affordable access to the high-quality graduate education that our students deserve and that our nation needs. The vision, in turn, rests on three core values.

► **Student-Centered Education:** Graduate programs succeed when they provide learning experiences and opportunities that align with students' academic interests and career goals.

► Access and Inclusion: The quality of a graduate program depends upon the voices and inclusion of students from ALL backgrounds and perspectives.

► *Transparency*: Graduate programs have the responsibility to provide current and prospective students with readily available, clear information about costs, career pathways, and other less tangible but no less important outcomes of graduate education.

Informed by this vision and these values, the goal of the taskforce was four-fold.

The first goal was to develop a research and policy agenda and a call to action for key graduate education stakeholders, including legislators, federal funding agencies, employers, university leadership, graduate deans, graduate faculty, and students. These groups will need to work together to ensure that graduate programs are accessible, responsive to workforce needs, and designed to support student success. The next section of this report outlines our call to action and recommendations to different groups with deep investments in the outcomes of graduate education. This work is just beginning, and CGS is committed to supporting it.

Second, the taskforce sought to understand the drivers of educational costs to current and prospective students, graduate programs, and universities, and to explore cost containment strategies currently adopted by CGS member universities. In the toolkit associated with this report, we offer models for estimating the full costs to universities of delivering graduate education. These models help to demystify institutional costs – instructional costs, but also necessary investments in libraries and other research facilities, graduate student financial support, including tuition scholarships or waivers, and graduate student support services. Ultimately, understanding costs is an essential piece of the calculus required to analyze the tradeoffs associated with proposed increases in tuition or graduate student financial benefits and access to high-quality graduate education. These tools may also be useful in analyzing the costs and revenues needed to successfully launch new, high-quality graduate programs or make the investments necessary to improve the quality of existing ones. Grounded in the values outlined above, the taskforce first and foremost defined program quality in terms of graduate students' academic and career success.

The third goal of the taskforce was to understand the revenue streams that support graduate education. These include tuition dollars, of course, but also philanthropic gifts, fellowships, federally funded research assistantships and traineeships, and employer support. The taskforce investigated models for distributing resources that are both equitable and supportive of student success. Our toolkit provides a number of examples of how CGS member institutions are approaching issues such as the distribution of tuition waivers and scholarships across master's programs to maximize access, work with employers to provide tuition benefits and other incentives for employees to pursue a graduate degree, and how the type of financial support (e.g., teaching assistantships, research assistantship, traineeships, corporate internships, and fellowships,) can be sequenced over the course of graduate study to optimize academic and career success.

Our fourth goal was to highlight best practices in making graduate program costs and career outcomes readily available for prospective students at both the master's and doctoral levels. Costs to students are not always evident: the same graduate degree program may vary in cost (and associated levels of student debt) depending on several variables. For example, tuition costs are driven by faculty and staff salaries, regional variations in the cost of energy and facilities, and the market value of a program's reputation and prestige. For students, the cost of housing, food, and childcare in the community is an additional cost driver. In a market economy like that of the U.S., student consumers should and do have the right to make decisions about which program to attend, consistent with their educational and career goals and aspirations. However, they can only do so when they have a full understanding of the immediate and long-term financial implications of the decisions they are making to pursue a graduate degree.

As an organization, CGS is committed to helping members effectively steward the resources necessary to support access and success in graduate education. We urge universities to use this report and associated toolkit to advocate for cost-effective practices in graduate education with partners on your campus, including graduate students, and to collaborate with policymakers, funders, and employers to develop practices that support graduate student success.

# Action Agenda and Recommendations

Optimizing the return on investment of graduate degrees requires collaboration between different groups, including universities, policymakers, employers, and graduate students themselves. Addressing the financial and structural challenges facing graduate education also requires a multifaceted approach that includes research, institutional action, and federal policy reforms. Sustainable funding models, transparent costs, and supportive policies are critical to ensuring that graduate education remains accessible and effective. The following action items outline key areas for research, institutional improvements, and legislative advocacy to strengthen graduate education and expand student opportunities.

### U.S. Graduate Schools

The nation's graduate schools can enhance graduate student success by ensuring that prospective students are provided with the necessary information about the cost of an educational program before enrollment. It is important for students to "know before they go." Information about cost and fees, available financial support, time-to-degree, potential career pathways, and employment opportunities should be available and accessible to prospective and current graduate students. Transparent cost structures help students plan financially, clear degree timelines prevent unnecessary delays, and robust support services contribute to overall well-being and academic achievement.

#### CGS Encourages the Nation's Graduate Schools to:

► Increase Cost Transparency: Provide detailed breakdowns of tuition, fees, and expected costs on institutional websites. Offer financial planning resources, including estimated living expenses and funding opportunities. Provide annual loan counseling to graduate students to discuss debt load, repayment options, and career opportunities.

► Enhance Transparency in Financial Support Offers: In addition to clear cost of education information, provide accepted students with a clear, detailed explanation of the type, duration, and terms of the financial support they are being offered. Ensure this information is presented in an accessible, easy-tounderstand format to help students make informed decisions.

► Ensure Clear Expectations about Time-to-Degree: Support a timely path to degree completion by offering clear guidance on degree requirements, regular progress check-ins, and opportunities for mentorship. Encouraging faculty advisors to provide ongoing support can help students navigate their programs effectively while allowing flexibility for individual goals and circumstances.

► Enhance Graduate Student Services: Explore expansion of mental health support, career development resources, and professional networking opportunities. Improve access to childcare, housing assistance, and other health-related services to graduate students. As part of its ongoing efforts to assess and improve the cost of graduate education, CGS will support members in these efforts through the following activities in 2025:

► CGS Sponsored Webinars: Issue-specific webinars will provide CGS graduate deans with the opportunity to engage in substantive discussions about issues such as graduate student stipend levels, funding modalities, sequencing of funding and its relationship to academic progress.

▶ CGS Blog Posts: Invitations to graduate deans and education leaders to contribute to a monthly CGS blog post on the financing of graduate education and its impact on students and graduate schools.

► CGS Study/Research: CGS will seek federal and/or philanthropic funding to analyze the effects of reduced graduate cohort sizes on the workforce, particularly in STEM fields. We will also assess how shifts in graduate student funding impact innovation and economic growth.

► Cost Transparency Initiative: CGS and the graduate education community will work to develop a College Cost Transparency (CCT) initiative for graduate education. The CCT initiative developed by the National Association of Student Financial Aid Administrators (NASFAA) will serve as a model for a graduate-focused initiative. The goals of this initiative will be 1) clarify the costs of graduate study for graduate students; and 2) clarify what is included in financial support offers

► National Conversation about Funding Graduate Education: CGS and the membership will spearhead a conversation that addresses and explores alternative funding structures for graduate education, particularly at the doctoral level.

### **Federal Government and 119th Congress**

The federal government provides essential federal funding to support graduate education and graduate students. Federal funding for graduate education and training is supported by several federal research agencies, including the U.S. Departments of Education, Energy, Defense, the National Institutes of Health, the National Science Foundation, the National Endowment for the Humanities, etc.

CGS encourages the presidential administration and Congress to invest in graduate education and research programs. During the 119th Congress, CGS encourages the passage of legislation to:

► Expand Pell Grants to Graduate Education: In the last three congresses, bipartisan legislation was introduced to expand the Pell Grant program to graduate education. This legislation would allow graduate students who received Pell Grant support as undergraduates to apply unused Pell support towards their graduate studies. Moreover, expand Pell Grant support from 12 months to 18 months, which would cover graduate education programs.

► Sustain the Graduate PLUS Loan Program: The Trump administration and Congress are encouraged to invest in the Federal Direct Loan programs, such as the Graduate and Parent PLUS Loan programs. These programs provide essential loan support to aspiring graduate students. Federal policymakers should also support legislation that would reduce the interest rates paid by graduate student borrowers for these loans.

► Support Loan Forgiveness Programs: Support the implementation and expansion of public service loan forgiveness programs, specifically Public Student Loan Forgiveness (PSLF), already enacted by Congress and request Congress and the administration explore additional loan forgiveness initiatives.

► Eliminate Capitalized Student Loan Interest and Origination Fees: Support bipartisan legislation that removes capitalized interest and origination fees from student loans.

► Support Employer Tuition Assistance: Support the passage of bipartisan legislation concerning employer tuition assistance. Employer tuition assistance programs provide essential financial support for employees seeking to further their education, benefiting both individuals and the broader economy. Currently, employers can offer up to \$5,250 in tax-deductible tuition assistance per employee, but this provision is set to expire on December 31, 2025. If not extended, many workers may lose access to crucial educational benefits, limiting opportunities for career advancement. Advocating for an extension of this tax deduction will help ensure that employers continue investing in workforce development.

► Support Mandatory Loan Counseling for Graduate Students: Current and prospective graduate students need to understand the financial implications of the loans they take out as well as the repayment terms. Requiring universities to provide such counseling will support student financial decision-making.

### Funders

► **Research on Shrinking Graduate Cohorts and Outcomes:** Support research examining the causes and consequences of shrinking graduate student cohorts. Understanding enrollment trends, degree completion rates, and workforce outcomes will help inform policies and programs that sustain a strong pipeline of advanced-degree holders critical to innovation and economic growth.

Support Research on Cost-Effective Funding and Delivery Models: Research is also needed on the impact of stipend levels, funding types (e.g., TA, RA, fellowship, traineeship) on academic and career success, and on the effectiveness of new degree models.

▶ Support Initiatives and Convenings: These gatherings will be aimed at developing models to manage graduate education costs, enhance the value of graduate degrees, and establish shared principles for transparency in graduate student financial support offers.

## **Employers**

► Advocate for Investments in Graduate Education in the U.S. Workforce: Employers are in a strong position to advocate for the value of graduate degree holders to their industries and to the U.S. economy and workforce. CGS encourages employers to communicate the skills and knowledge needed to successfully compete in their industries and to explicitly identify what skills and knowledge are provided by graduate degree programs.

► Advocate for Policies that Incentivize Employer Tuition Assistance Programs: Employers are encouraged to advocate for policies that provide a financial incentive to companies and organizations that support their employees' career advancement by providing tuition assistance

► Explore Opportunities to Provide Funded Internships to Current Graduate Students: In many fields, experiential learning provides an important complement to the graduate curriculum provided by universities. We encourage employers to contribute to learning and training programs, such as the Accelerate to Industry (A2i) model at North Carolina State University, which benefits employers, universities, and students.

### **Current and Prospective Graduate Students**

► Seek Information About the Return-on-investment Of Different Degree Types in The Fields Where They Will Pursue Graduate Study: In April 2025, CGS is relaunching a debt-to-salary calculator for prospective graduate students on its GradSense website. Students are encouraged to explore this interactive resource, which is designed to help students understand the median debt levels of degree holders in different fields as well as the salary range of individuals in the occupations they may wish to pursue.

► Request Information About Career Outcomes and Time-to-degree From the Universities to Which They Are Applying: National data are important for understanding educational and career outcomes. However, outcomes vary by institution. We encourage students to request this information from the universities where they are considering pursuing a degree.



# Section I: Understanding Graduate Education Costs for Universities

Institutions of higher education face escalating costs in the delivery of high-quality graduate programs. These costs are distributed across academic programs, student benefits and support services, research infrastructure and compliance functions, and, of course, instruction and instructional technology. Understanding the full scope and magnitude of these costs is crucial in determining how to deploy resources in ways that meet core institutional needs and enhance program quality, while simultaneously keeping programs affordable and accessible to current and prospective students.

While the tangible and less tangible returns on a graduate degree are significant, the public narrative about the high costs of graduate education does not suggest that this is the case. The storyline about exorbitant costs and student loan debt, in tandem with the job market, means that graduate education is in danger of being seen as a less attractive option than it once was. To counter this possibility, it is imperative that the graduate education community closely attend to the drivers of cost and engage in thoughtful analyses of possible cost containment strategies. Doing so now will protect the future health of the nation's research and innovation agenda, its workforce, and its security, all of which depend on graduate educated leaders.

The CGS Cost of Graduate Education Taskforce engaged the expertise of higher education finance experts and explored several models that universities were using to understand the revenues and costs associated with the delivery of high-quality master's and Ph.D. programs. Included in the toolkit are examples, such as those used by Dean Wendy Boland at American University to analyze the "balance sheet" for master's programs. Included, also, is information about the National Study of Instructional Costs and Productivity (often called The Delaware Study) useful for benchmarking instructional costs and faculty productivity. Available by subscription and focused on undergraduate instructional costs, the Delaware Study may, nonetheless, be one useful tool for universities interested in better understanding graduate program costs.

In addition to exploring the structure of instructional costs, this section also explores how universities are better understanding, funding, and distributing graduate student benefits such as tuition scholarships and waivers and implementing policies to both control institutional costs and help graduate students understand and control theirs.



### Models for Determining Direct Instructional Costs

Instructional cost allocation is a key component in assessing the resources required to run a specific graduate academic program and for the long-term planning of any school or college. For example, American University has developed a methodology to determine an estimated instructional cost per credit to run each program by compiling the average salaries of faculty by rank and school or college. The methodology also considers the distribution of faculty effort towards teaching, faculty instructional load, the mix of undergraduate and graduate sections in any given school or college, and the average section size. By determining the cost per credit, institutions can assess the financial impact of instructional costs on each program. This cost per credit is then

multiplied by the total number of credits generated by students enrolled in the primary academic program to arrive at the overall faculty cost for that program. This detailed analysis is essential for understanding the financial performance and sustainability of each program.

In addition to American University's example, the Delaware Study of Instructional Costs is an annual comparative analysis of faculty teaching loads, instructional costs, and scholarly activities at over 700 four-year, non-profit colleges and universities. Conducted by the Higher Education Consortia, the study provides institutions with detailed reports to benchmark their costs and productivity against peer institutions, with data collection occurring between August and January and results released in July.

At **American University**, a detailed formula provides a reliable estimate of faculty cost per enrollment to help departments make informed decisions about program offerings, resource allocation, and financial planning.

#### **Delaware Study of Instructional Costs**

Understanding institutional costs within a university setting is complex, as it requires analyzing metrics across various programmatic levels. The Cost Study, commonly known as the Delaware Study of Instructional Costs, addresses this challenge by offering a comparative analysis of faculty teaching loads, direct instructional costs, and separately budgeted scholarly activities at four-year, non-profit colleges and universities. Initiated in 1995, this annual study, conducted by the Higher Education Consortia—a network of over 700 public and private institutions-provides key insights into institutional costs and productivity. The study produces detailed reports comparing an institution's data with peer benchmarks, offering calculated metrics and comprehensive analyses of various cost factors. It gathers data on faculty types, including tenured, tenure-eligible, and supplemental faculty, as well as teaching assistants, for credit and non-credit courses. It examines teaching activities across undergraduate and graduate levels, individualized instruction, and online courses, while also capturing direct expenditures for instruction, such as salaries, benefits, and costs related to research and public service. Institutions can register for the study in August, submit and validate data by January, and access three-year-average reports with preliminary norms by May and results by July.



#### Understanding Other Institutional Costs

Beyond the direct instructional costs related to graduate faculty teaching loads and salaries, universities also provide graduate students with essential benefits and services. At both the master's and Ph.D. levels, most universities offer financial assistance in the form of tuition scholarships or waivers to some graduate students. This support helps to alleviate the burden of tuition costs and makes advanced education more accessible. For Ph.D. students, universities often go a step further by providing educational stipends. These stipends are designed to cover living expenses and provide additional financial support while students focus on their research and academic responsibilities.

Together, these forms of financial assistance play a crucial role in supporting graduate students, enabling them to dedicate more time and energy to their studies and research without the added stress of significant financial concerns. Of course, not all of the stipend and benefits costs are borne by the university. Research funding, fellowships, private philanthropy, and employers also contribute but as will be discussed in a subsequent section, strategies for distributing stipends, tuition waivers, and other student support costs need to be carefully considered in order to optimize access and student success. In addition, most universities offer some form of health insurance for graduate students,

and almost all provide comprehensive support services, including mental health resources, career counseling, professional development opportunities, and academic assistance. These services are essential for fostering both academic achievement and career advancement among graduate students.

> At **UW-Madison**, the Graduate School sets a minimum campus stipend (which programs can exceed), informed by factors like cost of living and predicted inflation.

#### Tuition Scholarships and Waivers

Under standard budgeting models, university-provided tuition benefits—such as waivers or scholarships—are accounted for as direct costs. (Graduate tuition also enters university revenue projections based on the assumption that all students will pay the undiscounted tuition price.) At public universities, the total cost of these benefits is adjusted based on the mix of instate and non-resident students receiving them. In high-demand programs with limited regional or national graduate capacity, where nearly all students are expected and willing to pay the full cost of attendance, foregone revenue represents a significant institutional cost. However, in many fields, including most Ph.D. programs, few admitted students will actually matriculate at a university if a full tuition benefit is not provided.

What does this mean for graduate programs and universities trying to accurately budget for these expenses? On the one hand, revenue estimates that assume that there is a significant number of students willing to pay the full sticker price for an advanced degree are inflated. Similarly, cost estimates that fail to account for the underutilized instructional capacity present in most programs are also inflated. These estimates overlook the fact that the marginal cost of adding an additional student is typically lower than the cost of educating the first student. The principle of tuition discounting is well understood in undergraduate enrollment management but is much less frequently considered in the context of graduate enrollment and the nuances of where and how to record tuition and fee-related expenses are too frequently left undiscussed. So, for example, it is unclear to what extent tuition benefits for teaching assistantships should be budgeted as undergraduate versus graduate institutional costs. Likewise, the ambiguity around graduate tuition "discounting" is an important consideration in discussions about whether students

supported by prestigious national fellowships—such as NSF Graduate Research Fellowships (GRF)—represent a financial burden to the university. These fellowships often provide an institutional allowance that is insufficient to cover the full "sticker price" of tuition, raising concerns about the potential shortfall that a university must cover.

The competitiveness and prestige of these fellowships, combined with their "portable" nature (meaning they can be taken to any institution the recipient chooses) suggests that the tuition recovered through the institutional allowance represents revenue that the university would not have otherwise received. In other words, without these fellowships attracting high-achieving students to the university, the institution would forgo any revenue at all from this source, as these students would simply take their fellowship and associated institutional allowance elsewhere.

Because tuition waivers and scholarships are often associated with appointments as teaching or research assistantships, they are more commonly associated with the support costs of doctoral students. However, the next section of the report and toolkit focused on models and principles of resource allocation, does include examples of the innovative work universities are doing to secure funding from philanthropy and employers to help meet the needs of master's students.

### Administration and Support Service Costs

Whether centralized or decentralized, administering high-quality graduate programs, and providing effective student support requires significant investment, primarily in the salaries of those delivering these essential services. However, when institutions adopt comprehensive, strategic, and well-coordinated approaches to graduate student retention and success, these costs are largely offset by the increases in tuition revenue derived from less attrition.

Additional cost-effectiveness can be realized in multiple ways. First, the consistent application of policies can help reduce grievances, appeals, and potential legal challenges, lowering administrative and legal expenses. Second, economies of scale can be achieved in the technologies and systems required to support the delivery of graduate degree programs, streamlining operations, and reducing perstudent costs over time. By carefully balancing investments in administrative At Western Washington University, thengraduate dean Moheb Ghali used four different methods to show that while eliminating the Graduate School might appear to save money, net costs actually increased due to economies of scale and non-monetary costs.

and student support services with strategies that enhance student success and program sustainability, institutions can create a more financially efficient model for graduate education. The toolkit provides an example of a method for calculating these costs, developed by Moheb Ghali, former graduate dean at Western Washington University.

*Georgia State University* tied the cost of graduate education to its 2022 strategic planning process to make a case for increased investment in graduate education.

#### Cost Containment Strategies for Students and Universities

A significant factor influencing the costs incurred by graduate students and universities is the time required to complete a degree. For full-time students, tuition and fees are only part of the expense-opportunity costs also play a significant role. These opportunity costs include the loss of potential income, benefits, and retirement savings that they might have earned if they were in the labor force. By dedicating a significant period of time to their studies, full-time students often forgo the immediate financial advantages they could have otherwise gained in the workforce in the short term, but those same students could see financial gains and faster career progression once they complete. Time-todegree is also a significant cost factor for universities, especially in doctoral programs where most, if not all, students receive

financial support. For the university, prolonged time-to-degree means extended commitments to funding, mentorship, and resources.

Universities and students can save on expenses through 3+2 or 4+1 programs, which increase class sizes in upper-division undergraduate courses that typically have underutilized instructional capacity. These accelerated master's programs also boost enrollment in graduate seminars, ensuring that faculty course loads and salaries better match curricular needs and student demand.

For students, accelerated programs reduce educational expenses by allowing them to fulfill part of their graduate course requirements while still paying undergraduate tuition. Additionally, by shortening the time needed to earn a master's degree, these programs can lower students' opportunity costs. Universities can help reduce overall costs to students by allowing the transfer of some or all graduate credits earned at another university by students who have not yet completed a graduate degree.



## **Opportunity Costs**

Lost opportunity costs for students choosing to attend graduate school stem primarily from foregone income and work experience. By stepping away from fulltime employment, students miss out on earning a regular salary during the years spent pursuing their degree. This lost income is compounded by the absence of employer-provided benefits, such as health insurance, retirement contributions, and potential performance bonuses. For many, the gap in work experience also delays career progression, resulting in fewer opportunities for promotions or job growth compared to peers who remain in the workforce.

Another component of opportunity costs lies in the financial and personal sacrifices associated with graduate education. Students often incur significant expenses, including tuition, fees, and living costs, which can add to long-term debt if financed through loans. Additionally, the time and energy devoted to graduate studies can limit opportunities for entrepreneurial endeavors, side income, or other personal pursuits. The lifestyle changes required—such as reduced leisure time and stricter financial budgets represent intangible but important tradeoffs.

However, these opportunity costs must be weighed against the potential long-term benefits of graduate school. A graduate degree may open doors to specialized career paths, higher earning potential, and access to professional networks. Over a lifetime, these advantages could offset or even surpass the initial sacrifices. The key for prospective students is to carefully assess the short-term costs relative to their long-term career and financial goals to determine if graduate school is the right investment.

**Opportunity Cost** = (Lost Income + Lost Benefits + Education Expenses) - Expected Long Term Gains

- Lost Income = Current Annual Salary × Years in Grad School
- Lost Benefits = Annual Value of Benefits (e.g., health insurance, retirement contributions, bonuses) × Years in Grad School
- Education Expenses = Tuition + Fees + Living Costs during Grad School

*Expected Long-Term Gains* = Post-Graduation Salary Increase over Time

### Graduate Student Financing

Financial literacy is essential for graduate students navigating the complexities of student loans, repayment options, and budgeting teaching or research assistantship stipends to cover living and educational expenses. To supplement fellowships, traineeships, and assistantships, many graduate students will rely on federal or private loans to finance their education.

According to the Survey of Earned Doctorates, approximately 39 percent of doctoral recipients will have some student loan debt, often accrued starting in their

undergraduate years. Federal loans including Direct Unsubsidized Loans - offer more favorable terms than those available through private lending. While these loans have fixed interest rates, they accrue interest while students are in school. Grad PLUS Loans, which can cover up to the full cost of attendance, require a credit check, carry a higher interest rate, and also accrue interest during enrollment, potentially increasing the repayment amount significantly. However, the terms of these federal loans are still generally more advantageous than those offered by private lenders, where interest rates are often higher and variable, and fewer repayment options exist.

Morgan State University limits the credit hours required for a new degree program to the minimum required by state law, an approach that is also being used to redesign existing curricula to better integrate research methodologies earlier in the student's program of study.



Before taking out a student loan, graduate students should utilize financial literacy tools such as GradSense and consult with their university's financial aid office to review loan terms. Additionally, students should explore various repayment options available after graduation, including income-based repayment plans and public service loan forgiveness programs. By proactively managing their finances, graduate students can minimize debt burdens and lay a foundation for financial stability after graduation.



#### GradSense

GradSense is a CGS public website that helps current and prospective graduate students navigate financial planning issues before, during, and after graduate school. It provides diverse resources, including a debt-to-earnings calculator that allows students to explore the potential return on investment (ROI) of various graduate degrees by comparing median debt levels and salary ranges across disciplines. Other features include a budget calculator, glossary of financial terms, scholarship listings, and links to external resources. GradSense caters to a broad audience, including first-time graduate students, mid-career professionals, and students with varied life circumstances and degree goals. By equipping students with these tools, GradSense empowers them to make informed financial decisions while pursuing advanced education. This resource also aligns with CGS's strategic priority to reduce the time and cost of degree completion by sharing cost-containment strategies and institutional best practices.

# Section II: Models and Principles of Resource Allocations

Graduate education is highly diverse, encompassing master's and doctoral programs, research- and professional-focused degrees, and delivery formats ranging from place-based to virtual or hybrid modalities. This diversity extends further within program types: for instance, licensure-aligned programs often require clinical practica that may limit fulltime employment, while others are designed to accommodate working professionals. Consequently, no single resource allocation model can address the needs of all programs or students. A comprehensive, university-wide strategy must integrate multiple revenue sources, align with the institutional mission, and have a commitment to maximize access to and success in high-quality graduate education.

Resource allocation strategies should be grounded in the three core values outlined in the preamble to this report: programs should be student-centered, focused on their academic success, and aligned with their career interests; quality depends on the inclusion of all voices and perspectives; and program costs and outcomes should be transparent. This section offers examples of funding strategies aligned with these principles, with separate discussions for master's and doctoral students given their distinct funding needs. Examples include approaches to setting minimum doctoral stipends, incorporating student input into financial decisions, and navigating the complex balance of nearterm and long-term resource optimization.

### **Doctoral Students**

The pressures on resources needed to support doctoral students have been a constant in higher education for over 30 years, but inflation has recently escalated these challenges to unprecedented levels. Rising costs for essential needs like housing and food have exposed the inadequacies of a system originally designed to provide stipends for full-time, usually single, doctoral students engaged in research and teaching preparation. Today's graduate students, particularly those from lowerincome, first-generation, and racially and ethnically underrepresented groups, often face additional financial pressures from caregiving responsibilities. This reality has outpaced the traditional support structures in place, leaving universities grappling with how to meet both inflationary pressures and the evolving needs of a changing student body.

**Oklahoma State University** has been publishing a Graduate Stipend Survey for over 35 years. Over the past five years, stipends have steadily increased, with a shift towards more research assistant positions.

At **Indiana University**, the College of Arts and Sciences is revising its PhD funding practices to provide more competitive stipends that are more closely aligned with each program's time-to-degree.

**Concordia University** employs a transparent allocation formula based on a numerical assessment of programs that allows them to be compared across disciplines. At **Princeton University**, both stipend and health plans are reviewed by a committee of students, faculty, and staff members before they are submitted to the President and Board of Trustees.

For institutions, the challenges are multifaceted. First, universities, and often graduate deans, must navigate the simultaneous demands for increased stipends and expanded benefits, such as dental and vision insurance, transportation subsidies, housing allowances, and childcare support. Universities must also consider how to calibrate stipend levels in relation to local and national economies while ensuring that student voices are central to decisions on compensation and benefits. Second, institutions are tasked with containing costs while minimizing the direct and opportunity costs to students. Strategies include reducing time-to-degree through better sequencing of funding mechanisms (e.g., teaching assistantships, fellowships, research assistantships), incorporating private sector internships, and fostering academic progress.

As universities seek to meet the immediate need for increased academic stipend and benefit levels, many are either considering or have already reduced the size of incoming Ph.D. cohorts. The mid-to long-term consequences of such a reduction in doctoral enrollment have yet to be analyzed but have the potential to jeopardize American innovativeness in key fields of the future – artificial intelligence, quantum computing, and other emerging fields of scientific research. Research is urgently needed on the potential long-term impact of reducing Ph.D. cohorts on the future U.S. workforce. We provide examples here, and in the associated toolkit, of strategies universities are employing to address these issues while maintaining commitments to student-centered support, access, inclusion, and transparency.

### **Master's Education**

Master's education is a site of significant innovation in graduate education, moving away from the traditional thesis-based model that once dominated and often served as a pathway to the Ph.D. Today, we continue to see the rise of online education, new curricula, capstone projects, and the introduction of micro- and stackable credentials as alternative degree pathways. These changes have been driven largely by the growing demands for licensure, certification, and career specialization, particularly in professions like healthcare, where a master's degree has become a requirement for entry.

> At University of Florida, some master's students receive teaching or research assistantships, including the associated tuition waiver.

While many universities continue to rely on master's students' contributions to research, a large majority of master's students are now self-supported through personal resources, student loans, or employer tuition reimbursement programs. Although the return on investment (ROI) for many of these programs is high, the substantial upfront cost of tuition remains a significant barrier for many. Consequently, institutions offer various forms of tuition assistance, including scholarships, to increase access for low-income, firstgeneration, and underrepresented students.

The growth of part-time online master's programs, driven by the need to accommodate working professionals, has further expanded access by reducing opportunity costs, though it has not necessarily reduced tuition. These online offerings, while more flexible, require significant institutional investment in technology, academic services, career support, and other resources to maintain educational quality.

The financial implications of these investments are often overlooked by costcalculation models, and how universities manage these costs while ensuring equitable access to education presents a complex challenge. Moreover, institutions must also address how to distribute tuition assistance effectively and align educational offerings with employer demands, including models that allow students with partial graduate credits to complete degrees. Balancing these factors is critical to fostering sustainable, high-quality master's education that meets the needs of both students and the evolving workforce.

**Oakland University** partners with businesses and non-profits to address regional workforce shortages, such as social work and business analytics.

At **UC-Irvine**, the Graduate Federal Work-Study Program allows schools to nominate students as Graduate Student Researchers and receive federal funding on a matched basis.

Finally, the **University of North Texas** employs a Master's Career Pathways initiative that includes enhanced services, paid internship opportunities, and an exit survey.

# Section III: Promoting Accountability and Transparency

The cost of higher education and student loan debt is a major concern for prospective and current graduate students, parents, lawmakers, and the public. Ensuring that students have clear, accessible information about program costs, time-to-degree, and potential earnings before enrollment is a shared priority. In early 2023, the U.S. Department of Education issued a Request for Information (RFI) on Public Transparency for Low-Financial Value Postsecondary Programs, reflecting the Biden Administration's concern about students graduating with debt that outweighs financial benefits. While the Department did not proceed with its proposed list of "Low Financial Value Programs," policymakers remain focused on improving transparency and providing students with comprehensive, accessible data about the cost of educational programs and their potential financial returns.

Providing information on the typical earnings outcomes, borrowing amounts, cost of attendance, and sources of financial aid – and providing it directly to students in an easy-to-understand way at a key moment in their decision-making process would help students make more informed choices. To provide greater transparency to students about the cost of graduate education programs, this section addresses issues such as cost of degree programs; time-to-degree and completion rates; career outcomes and earning potential; the financial impact of "stopping-out" of a program, and information about stackable credentials and badges.

> At the University of Delaware, the Graduate College developed filterable dashboards on a variety of data, helping university leaders see how each program contributes to research productivity and revenue generation.

The University of Michigan tracks career outcomes for its students and uses the resulting data to inform curriculum development.

### Communicating Costs to Students

Even the most sophisticated prospective students can find it difficult to decipher what they can expect to pay for a higher education degree. While projects like the College Cost Transparency Initiative by the National Association of Student Financial Aid Administrators (NASFAA) have made real progress in more clearly communicating the full costs and the full financial aid package for undergraduate students, no similarly comprehensive effort has yet been undertaken for master's and doctoral degree programs. Nevertheless, some universities and some programs have made real efforts to more fully capture total program costs, including required fees and tuition differentials.

However, there is still work to be done. As outlined in the Call-to-Action section, the graduate education community should explore developing guiding principles and/or template offer letters to improve transparency in offers of graduate financial support. These templates would outline the student's total estimated cost of attendance, with a breakdown of costs paid to the university and external expenses, as well as the terms of any assistantship or fellowship, including the expected weekly hours for teaching or research, whether the offer is renewable, the duration of support, and any requirements for renewal. In the toolkit, we highlight some of the promising practices universities are using to promote greater cost transparency. However, as previously noted, tuition and fees are not the only costs associated with graduate education. The full cost of a degree also depends on the number of credit hours, and the average time-todegree . The greatest cost of all is borne by students who invest time and money in a graduate degree program but fail to complete it. For these students, the educational costs are not offset by the earnings premium that often accrues to advanced degree holders. In this section, we include strategies some programs use to communicate average time-to-degree and degree completion rates, as well as tools that students may use to calculate the opportunity costs associated with their pursuit of the degree.

**Hood College** utilizes multiple strategies to keep attendance affordable, including allowing undergraduates to start graduate coursework early, local partnerships, and a Prior Learning Assessment to facilitate transferring credits.

*Metropolitan State University of Denver 31* requires each master's program to answer standardized questions on program mission and value to increase transparency.



#### **College Cost Transparency Initiative**

The <u>College Cost Transparency Initiative (CCT)</u> aims to enhance clarity, accuracy, and understanding of college financial aid offers. Formed in 2022 by leaders from ten major higher education associations, it focuses on establishing standardized principles and minimal standards to improve how institutions communicate costs and aid to students. While the initiative primarily focuses on undergraduate education, its themes of transparency could be applied to offers at the graduate level. This effort seeks to address long-standing confusion and inconsistencies in financial aid offers, enabling future students the ability to make more informed decisions about college affordability.

Over 360 institutions, representing 3.8 million students, have committed to these standards. Key principles include:

Clearly label net price (total cost minus grants and scholarships).

► Using plain language to explain aid types, including grants, loans, and work-study opportunities.

- Providing itemized costs for tuition, fees, and indirect expenses.
- Explaining terms, conditions, and repayment details for loans.
- Offering employment-related information if work-study is included.

The initiative also provides resources like sample financial aid offers and a glossary of terms to support institutions in aligning with these standards.



### **Program Outcomes**

Over the past decade, universities have made significant progress in documenting and sharing program-level data on the career pathways of Ph.D. recipients (e.g., the CGS Ph.D. Career Pathways initiative). These efforts complement national data collection efforts like the National Science Foundation's (NSF) Survey of Doctoral Recipients and the NSF Survey of Earned Doctorates by providing actionable insights for prospective students and programs aiming to support alumni career success. While consistent methods for collecting and publishing such data are still developing, this section highlights how universities are enhancing transparency around program-level career outcomes.

At the master's level, programs in fields with accreditation requirements often share licensure pass rates and job placement rates on their websites. The examples below offer examples of transparency and demonstrate how universities are extending similar efforts to share career outcomes for other master's programs. Career and salary data, often the most sought-after information for prospective students, taxpayers, and policymakers, are a focal point. These examples also emphasize the importance of communicating fewer tangible benefits of graduate education—such as personal and societal impact-and provide examples of strategies for showcasing degree completion rates for graduate programs.

**Arizona State University** responds to calls for greater transparency by offering detailed web-based information on tuition, fees, expenses, and financial aid options.

**University of California, Santa Barbara** also provides this information online, as well as interactive dashboards on the graduate student life cycle, from admission to completion and career outcomes.

**Cornell University** does longitudinal surveying of its doctoral alumni on their employment status and career preparedness and makes that information publicly available on their website.

#### Graduate Career Consortium, Ph.D. Outcomes

The Graduate Career Consortium's (GCC) Career Outcomes Committee compiled a database of publicly available graduate career outcomes from its member institutions—covering master's, graduate, and postdoctoral levels and included only quantitative data with hyperlinks to reports or interactive dashboards. Data collected between the 2019–2020 academic year, and updated in September 2020, revealed that 63 percent of GCC members publicly reported their alumni outcomes, while institutions that provided only anecdotes or summary statistics were excluded; the data was verified by GCC members for accuracy and completeness, and the final draft was approved for distribution. The data is updated each fall. Additionally, the committee published a report that offers a comprehensive analysis of graduate career outcomes reporting by comparing various reporting taxonomies and suggesting standardization strategies, which informed the development of a crosswalk tool to map similar fields across different outcomes frameworks.



# Conclusion

This report demonstrates that universities are thinking creatively about ways to deliver quality graduate programs at a reduced cost and outlines a series of steps stakeholders can take to further this work. But the work of the taskforce ended with both a question and a new challenge. First the question. Given demographic shifts, inflation, and downward pressure on government spending, it is unclear whether current models of financial support for doctoral students are sustainable. The model developed decades ago was based on meeting the basic cost of living for a single/unmarried, usually male student who would pursue doctoral study full time and without interruption through completion of the degree.

Today's doctoral students, however, are more likely to be in couples, be women, and have caregiving responsibilities for children or other family members. Exacerbated by housing shortages and escalating costs for food and other basics, universities are struggling to increase doctoral student stipends and benefits without any indication that commensurate increases in research funding or tuition are forthcoming. Indeed, as NSF and the NIH budgets come under increasing scrutiny the mismatch between support costs and revenue is only likely to increase, and it is in this context that many universities have begun to reduce the number of new Ph.D. students they admit.

As this report notes, the potential downstream consequences of this reduction in the size of Ph.D. cohorts have not yet been carefully examined. However, certainly, the capacity of the U.S. workforce to develop innovative solutions to protect and enhance the health and safety of Americans will be compromised. So, while the current models of funding doctoral students have served the nation well, it may be time to rethink some of the assumptions that have long undergirded U.S. Ph.D. training. For example, is full-time, uninterrupted doctoral study the only way to master the research skills necessary to advance the frontiers of knowledge and practice and develop a scholarly identity? Could academic coursework, research progress, and career preparation be enhanced by employer-paid internships or other periods of employment, thereby reducing the total stipend and other benefits costs to universities? Would such internships and work experience also reduce the opportunity costs to students in terms of foregone wages or pension contributions? Could the curriculum of self-paid master's programs be better aligned with doctoral program requirements to substantially shorten the period during which a doctoral student would need tuition and stipend support?

Next, for the challenge. At the time of this report's publication, in March of 2025, we have seen the threat of unprecedented disinvestments in graduate education and in the research infrastructures of American universities. These developments risk wasting our nation's greatest resource—the talents and persistence of Americans who aspire to develop innovative, high-impact solutions to our country's problems.

In light of this challenge, we must ask ourselves the following question: What are the costs of not investing in a strong graduate education system—for individual Americans, as well as our nation, state economies, and local communities and how do we succinctly and powerfully communicate them?

There is compelling evidence that the costs of disinvesting in graduate education would be very high. Globally, the largest economies are making significant public investments in graduate education systems to expand and strengthen their workforce. According to a recent report, for example, China, which has expanded its graduate educationsystem as a strategy for economic development, began to outpace the U.S. in the production of STEM Ph.Ds. in the mid-2020s and this gap is only expected to grow (Zwetsloot et. al., 2021). Meanwhile, both individual European countries and coalitions of European nations working to develop the European economic zone have sought ways to align and collectively strengthen the goals of their graduate education systems.

These expansions are taking place at a time of great opportunity for scientific development and innovation. The Artificial Intelligence "race" will require the U.S. to develop and support graduate degree holders from a wide range of disciplines to ensure that the U.S. plays a responsible, leadership role in Al developments. As the CHIPS act outlined, these investments have important consequences not only for U.S. economic development but also national security. The opportunities for innovation in healthcare, resilience to national disasters, engineering, and both humanistic and social scientific solutions to national challenges are clear.

Considering these developments, the United States must protect and strengthen its position as a leader in graduate education and keep it obtainable for students. Increasing timeto-degree, shifting student demographics, and evolution of advanced scientific career pathways highlight the need to rethink our longstanding models for graduate education and better align them with our goals as a nation. CGS and its members are committed to adapting and modernizing graduate education to meet the needs of an increasingly diverse and dynamic student population while expanding our critical contributions to research and innovation.

There are many reasons for optimism. Over the past decade or so, universities have made real progress in helping students prepare for and value diverse, highly rewarding, and important career pathways. At the master's level, degree models such as the Professional Science Master's degree are creating better alignment between training and workforce needs. At the doctoral level, universities are rethinking the degree's curricular structure, duration, requirement for full-time study, and the nature of capstone projects.<sup>[i]</sup>

As the graduate education community looks to the future, universities, students, employers, and government agencies will be important partners. We have opportunities to strengthen the workforce to meet the challenges faced by our nation and our regional and state communities. While developing new and more accessible models of graduate education may take time and effort, refusing to take action is an approach we cannot afford.

[i] For example, the requirement in the humanities for a dissertation that models a first book directly corresponds to tenure requirements at most major research universities. In the sciences, the change to a dissertation format that is based on a series of peer-reviewed journal articles reflects hiring and tenure requirements. These expectations persist even though neither the monograph nor research publication track record may be particularly well aligned with work responsibilities or hiring criteria of employers in the business, governmental, or non-profit sectors or even with the expectations of hiring committees at community colleges or other less research-intensive colleges and universities.