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# Rethinking the Professoriate

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# Rethinking the Professoriate

## **Abstract**

[Excerpt] The American higher education system faces tremendous pressure to enhance access and graduation rates. In a period of increasing financial difficulties, how will our nation's higher education institutions achieve these goals and how will they recruit faculty and staff their classes in the future? The answers to these questions, which are the focus of my paper, will likely vary across different types of higher education institutions and will reflect the nature of the classes that they offer and the types of students that they educate.

## **Keywords**

higher education, graduation rates, access, faculty, performance

## **Comments**

### **Suggested Citation**

Ehrenberg, R.G. (2010). *Rethinking the professoriate* [Electronic version]. Retrieved [insert date], from Cornell University, School of Industrial and Labor Relations site: <http://digitalcommons.ilr.cornell.edu/workingpapers/117/>

### **Required Publisher Statement**

Published by the [Cornell Higher Education Research Institute](#), Cornell University.

Revised Draft (4/27/10)

## **RETHINKING THE PROFESSORiate**

**by**

**Ronald G. Ehrenberg\***

(Paper prepared for the American Enterprise Institute Conference on *Innovation and Entrepreneurship in Higher Education*, Washington DC, June 2010)

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## **Introduction**

I have been a tenured faculty member for the last 35 years at a selective private research university, whose faculty members are predominantly full-time tenured and tenure-track. I am a long time active member of the American Association of University Professors (AAUP) and have chaired two of its committees. I have published papers on the importance of the tenure system and conducted empirical research that showed that persistence and graduation rates at 4-year American higher education institutions are positively associated with the share of an institution's faculty members that are full-time tenured and tenure track. While I wish that the type of faculty position that I have had was the one that the majority of future generations of faculty will have, the handwriting is on the wall. Major changes have occurred and will continue to occur in the way that U.S. academic institutions educate their students and these will lead to continued erosion of the tenure system.

Even before the "great recession" that we have recently experienced, these changes have been driven by the failure of private higher education institutions to moderate tuition increases and to expand their enrollments to meet social needs. They have been driven by the "arms race" of spending in which institutions engage to try to maximize their prestige and by the failure of states to maintain adequate funding for their public higher education systems. The decline in state finance has led to percentage tuition increases at 4-year public institutions that mirror the percentage tuition increases at 4-year private institutions, but the tuition increases at the publics have only partially offset the decline in state support and have left public higher education in many states unable to

meet demands for undergraduate slots.<sup>1</sup> These changes have also been driven by changes in technology, including the growth of the Internet, and changes in the nature of the modern job market, which has led to increased demand by working adults for higher education that is delivered at times and in places that is convenient for them.

The American higher education system faces tremendous pressure to enhance access and graduation rates. In a period of increasing financial difficulties, how will our nation's higher education institutions achieve these goals and how will they recruit faculty and staff their classes in the future? The answers to these questions, which are the focus of my paper, will likely vary across different types of higher education institutions and will reflect the nature of the classes that they offer and the types of students that they educate.

I begin my discussion with a description of the changes in the staffing patterns that have occurred in American higher education over the last 35 to 40 years, a period marked by declining use of full-time tenured and tenure track faculty, and discuss the reasons for these changes and their implications for the professoriate and for undergraduate students. Next I focus on how and why our nation's research universities have increased their use of full-time non tenure-track faculty. This is followed by a discussion of efforts to use technology to restructure how we educate undergraduate students and the implications of these efforts for the composition of academia's instructional staff. I then turn to a discussion of what private nonprofit and public institutions can learn from the rapidly expanding for-profit higher education system about "delivering" instruction and staffing courses, and then how improvements in "system effectiveness" will impact on who will educate American college students. While

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<sup>1</sup> Ronald G. Ehrenberg (2002, 2006)

economists are not well-known for the accuracy of their long-run forecasts, I conclude by venturing some thoughts about what the future will bring for American higher education and the professoriate

### **Historical Changes in Staffing Patterns**

The stereotypical model of undergraduate instruction in American higher education is that of a full-time faculty member with a doctoral degree, who has tenure, or who is on a tenure track and will eventually be evaluated for tenure, lecturing to, or leading discussions with, a set of undergraduate students. Nothing could be further from the truth. As table 1 indicates, while close to 80 percent of the instructional faculty at American colleges and universities were full-time back in 1970, by 2007 this percentage had fallen to only slightly more than 50 percent. Moreover these numbers overstate the true percentages of faculty that are full-time because they ignore graduate students in instructional roles who have titles such as teaching assistants, or teaching fellows.

<Table 1 about here>

To say a faculty member is full-time does not necessarily mean that the faculty member is tenured or on a tenure track. As table 2 indicates, the percentage of full-time faculty nationwide that was not on tenure track appointments more than doubled between 1975 and 2007 increasing from 18.6 to 37.5 percent. These faculty are often on one- or multi-year term appointments, with title such as instructor, lecturer, or senior lecturer. Empirical studies suggest that they are paid much less than their tenure track and tenured

colleagues.<sup>2</sup> It should be clear from tables 1 and 2 that in recent years, less than one-third of the faculty in American higher education are tenured or on tenure-tracks.

<Table 2 about here>

Of course American higher education is very heterogeneous, ranging from public and private research and doctoral universities that offer bachelors', masters', doctoral and professional degrees, public and private comprehensive universities that offer primarily bachelors' and masters' degrees, liberal arts colleges (largely private) that offer mainly bachelors' degrees, and two-year colleges that offer associates' degrees and certificate programs and also perform a variety of other functions that are important to the local communities in which they are located. Within private higher education, there is a growing for-profit sector that focuses largely on adult learners. Not surprisingly, as table 3 indicates, the composition of the teaching faculty by full-time status and highest degree level varies widely across these institutions.

<Table 3 about here>

Nationwide, in 2003, the percentage of part-time faculty ranged from less than 20 percent at the public research universities to about 67 percent at the nations public 2-year colleges. While the percentage of full-time faculty with doctoral degrees was at least 65 percent at all of the institutional categories that offer bachelors degrees, it was less than 18 percent at the public 2-year colleges. While some part-time faculty members have doctoral degrees, the vast majority at each institutional type does not, and less than 10 percent of the part-time faculty at 2-year colleges has doctoral degrees

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<sup>2</sup> Liang Zhang and Xiangmin Liu (forthcoming), who also show that the employment of full-time non tenure track faculty is higher when their salaries are lower relative to those of tenured and tenure track faculty, and James Monks (2007)

The usage of part-time faculty and faculty without doctoral degrees also varies across fields. As table 4 indicates, the percentages of faculty that are part-time are highest in professional fields such as business, education, and the fine arts, where heavy use is made of practicing professionals who bring unique skills to students, and in the humanities where much of the introductory course load is shouldered by adjunct faculty and full-time non tenure track faculty.<sup>3</sup> Moreover, the fine arts and health (including nursing) fields are the ones that employ the smallest percentages of faculty who hold doctoral degrees.

This is not the place to discuss in detail the arguments in favor of a tenure system for faculty.<sup>4</sup> But it is important for me to briefly outline the arguments to give the reader a sense of why many in higher education are so supportive of it. In addition to the traditional academic freedom justification, they include that because a tenure system provides senior faculty with some job security it also provides an incentive for them to fully share their expertise with junior colleagues and facilitates the intergenerational transmission of knowledge; that a tenure system can be thought of as an implicit long-term incentive contract that provides incentives for both tenure track and tenured faculty to work harder than would otherwise be the case; that a tenure system can similarly be thought of a type of “winner take all” tournament that again provides incentives for all faculty to work harder; that tenure is a desirable job characteristics and in the absence of a tenure system colleges and universities would have to pay higher salaries to attract top faculty; and that a tenure system helps to align the interests of faculty with the interests of

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<sup>3</sup> John Cross and Edie Goldenberg, (2009)

<sup>4</sup> Intellectual integrity requires me to inform the reader that I am a long time member of the AAUP and have chaired several of its committees.



their institution.<sup>5</sup> However, the key point to stress from all of the above data is that only a minority of faculty members at American higher education institutions, and a shrinking minority at that, either have tenure or are on tenure tracks.

The economic arguments for why tenured and tenure track positions are declining are compelling. The substitution of part-time and full-time non tenure track faculty for tenured and tenure track faculty is due a host of factors: the growing financial pressures faced by public and private higher education institutions , the lower costs associated with hiring non tenure track faculty members, the increased flexibility that hiring such faculty members gives academic institutions in the face of uncertain economic times, and the end of mandatory retirement for tenured faculty that took place in 1994. Finally, there have been changes in the profession itself that have driven the trend, such as the increased emphasis on research at major research universities that has led tenure track professors to increasingly specialization in research, and the universities to depend more and more on non tenure track faculty to provide undergraduate instruction.<sup>6</sup>

As economists are fond of pointing out, there is no such thing as a free lunch. A growing body of research suggests that reliance on lower cost full-time non tenure track faculty and/or part-time faculty may adversely affect student outcomes. To take a few examples, my own research with Liang Zhang that used institutional level panel data found that, holding other factors constant, when a 4-year academic institution increases its use of either full-time non tenure track faculty or part-time faculty, its undergraduate

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<sup>5</sup> Many of these arguments are discussed in George Stigler (1981). Edward Lazear (1979). Sherwin Rosen and Edward Lazear (1981) and Ronald G. Ehrenberg, Paul J. Pieper and Rachel A. Willis (1999)

<sup>6</sup> Ronald G. Ehrenberg (2006), Ronald G. Ehrenberg and Liang Zhang (2005a), and Cross and Goldenberg (2009). Liang Zhang and Ronald G. Ehrenberg (forthcoming) show that an increased use of part-time faculty members at research universities is associated with an increase in external research funding per full-time faculty member.

students' first year persistence rate and graduation rate go down.<sup>7</sup> Daniel Jacoby similarly found that public community colleges that relied more heavily on part-time faculty had lower graduation rates, while M. Kevin Eagan and Audrey J. Jaeger found that increased community college student exposure to part-time faculty appears to reduce the likelihood that community college students transfer to a four-year college or university and that they complete their associates degree.<sup>8</sup> Finally, Eric P. Bettinger and Bridget Terry Long found that students attending Ohio public 4-year colleges and universities that take “adjunct heavy first-year class schedules are less likely to persist after their first year, but in later research they found that in some fields having an adjunct in an introductory class increases the likelihood of taking additional classes in some fields.<sup>9</sup>

Why might the increased use of non tenure-track faculty adversely impact upon undergraduate student outcomes? After all, many non tenure-track faculty members are dedicated teachers and, without any research expectations placed on them, can devote themselves fully to undergraduate education. However, full-time non tenure-track faculty teaching loads are typically higher than tenure-track faculty teaching loads, which may leave the former less, rather than more, time for individual students. Part-time faculty members, especially those in urban areas, must often find employment at multiple institutions to make ends meet, and have little time (and often no place) to meet students

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<sup>7</sup> Ronald G. Ehrenberg and Liang Zhang (2005b)

<sup>8</sup> Daniel Jacoby (2006), M. Kevin Eagan and Audrey J. Jager (2009) and Jager and Egan (2009)

<sup>9</sup> Eric. P. Bettinger and Bridget Terry Long (2007) and Bettinger and Long (forthcoming). One recent study, Florian Hoffman and Philip Oreopoulos (2009) using administrative data for a major Canadian research university found that the tenure or tenure-track status and the full-time part-time status of faculty in introductory level classes had no effect, on average, on student outcomes.

outside of class.<sup>10</sup> The full-time tenured and tenure-track faculty members, who may be more connected to their institutions and more up to date on their department's curriculum, may also be better prepared to advise students.

Given that a large share of the teaching in American higher education is done by faculty who do not have doctoral degrees, it is natural to ask whether the education level of a faculty member, per se, is a predictor of how much students learn.<sup>11</sup> The evidence on this point is ambiguous and surely depends on the academic aptitude of the students, the level of the class, and the field of study. Moreover, it is likely that the share of undergraduate instruction done by faculty with doctoral degrees will be declining in the future because the declining share of faculty positions which are full-time tenure or tenure track positions will likely decrease the already declining interest of American students in pursuing doctoral study. It is reasonable to expect that 4-year institutions that emphasize primarily undergraduate and masters' level education, except perhaps the most selective and wealthiest liberal arts colleges, will increasingly have to more heavily depend upon faculty without doctoral degrees to staff undergraduate classes.

In doing so, they will be reverting to a pattern that existed prior to the late 1960s when PhD production in the U.S. greatly expanded. The best historical data on the composition of faculty is collected in annual surveys conducted by the American Mathematical Society. Figure 1, which is constructed from these annual surveys, shows the share of full-time faculty members with doctorates in mathematics departments at bachelors, masters, and doctoral universities during the 1967 to 2007 period. While over

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<sup>10</sup> Zhang and Liu (forthcoming) show that academic institutions located in urban areas make more use of part-time faculty than other institutions.

<sup>11</sup> The data in table 3 suggests that only about 40% of all of the faculty in American higher education in 2003 had doctoral degrees, although the share of classes taught by faculty with doctoral degrees is higher because full-time faculty are much more likely to have doctoral degrees

90 percent of the doctoral universities full-time faculty had doctoral degrees throughout the period, the masters' level percentage rose from about 40 percent in 1967 to about 80 percent in the mid 1980s, while the bachelors' level percentage rose from about 30 percent in 1967 to over 70 percent in the mid 1980s.

One may speculate about whether the amount students learned in undergraduate mathematics classes increased during the period and whether a return to the degree patterns of faculty in the earlier era would adversely impact on student outcomes. Of great concern to me is that a decline in the share faculty with doctoral degrees at the masters' and lesser selective baccalaureate institutions will likely lead to a decline in undergraduate student involvement in research at them, which in turn would be associated with a further decline in the number of undergraduate students going on to PhD study.<sup>12</sup> While almost half of new American doctorates who were graduates of American baccalaureate institutions in 2006 went to people who earned their bachelors' degrees at research universities, a substantial fraction, probably close to one-quarter, received their undergraduate degrees from masters' or less selective bachelor's institutions.<sup>13</sup>

### **Enhanced Use of Full-Time Non Tenure Track Faculty**

Professional schools at our nation's major research universities, including law, business, medicine and architecture schools, have long had non tenure track positions with titles such as professor (or assistant professor) of practice or clinical professor. They use these positions to bring to their campuses practicing professionals who can provide instruction in areas in which the tenure and tenure track faculty do not have expertise.

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<sup>12</sup> Ronald G. Ehrenberg (2007) discusses my own efforts to encourage undergraduates to go on for PhDs in economics by involving them in research.

<sup>13</sup> Joan Burelli, Alan Rapoport and Rolf Lehming (2008)

With the increased pressure for faculty at major research universities to specialize in research, increasingly these institutions have made more use of full-time non tenure track faculty in undergraduate instruction and have tried to improve the status of such faculty. Duke University has long been at the forefront of these efforts and President John Sexton of New York University has articulated the goal of creating a professional class of teaching faculty at his institution.<sup>14</sup>

The relatively poor academic labor market conditions that currently exist for new PhDs, coupled with the large and growing differentials in faculty salaries that exist between major private research universities and masters' universities, as well as between the major private research universities and all but the wealthiest private liberal arts colleges have made full-time non tenure track teaching positions at these private research universities an increasingly attractive alternative for new PhDs, even though these positions pay lower salaries than their full-time tenure track colleagues receive.<sup>15</sup>

While teaching loads of these faculty are often higher than their tenure track colleagues', because the teaching loads of the former have declined over time, teaching loads for the non-tenure track faculty teaching at these institutions are often lower, or at least no higher, than they would have if they were employed at other institutions in tenure track positions.

Table 5 presents data for 2008-09 on average faculty salaries for professors, assistant professors and lecturers, by institutional type and form of control from the annual AAUP salary survey.<sup>16</sup> While the average salary of lecturers at private doctoral universities is about \$20,000 a year less than their assistant professor counterparts at

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<sup>14</sup> Piper Fogg (2004) and Karen Arenson (2003)

<sup>15</sup> Ronald G. Ehrenberg (2003) presents data on the growth in faculty salary differences across institution types, as well as between public and private institutions

<sup>16</sup> The assistant professor and professor figures do not distinguish between tenure track and non tenure track faculty.

these institutions, the average salary of lecturers at private doctoral universities is only slightly lower than that for assistant professors at public doctoral universities and is higher than those of assistant professors at public and private masters and bachelors institutions, as well as at 2-year colleges. Admittedly the lecturers' average salaries include those of senior lecturers who may have many more years of teaching experience than the most experienced assistant professors and there are salary gains associated with promotion for assistant professors. However, these data suggest that the financial costs to accepting a lecturer position at a private research university may not be that high relative to accepting an assistant professor position at other types of institutions, at least in the short run.<sup>17</sup>

<Table 5 about here>

Conversations I have had with colleagues at several of these private research universities, who are either in such positions or are chairs of departments that hire such faculty, suggest that contracts are now often “rolling multiyear contracts”. For example, an instructor will teach under a three-year contract that is extended for a year at the end of each year if performance is satisfactory, so that the faculty member has greater job security than if decisions on renewal are made only when a term contract is about to expire. Of course, these contracts are all contingent on the availability of funding, so they provide less job security than a tenured faculty member would have. On the other hand, the non tenure track faculty member does not have the stress of worrying if his or her research will be sufficient to achieve a tenured position and gets to teach at a major university with high-quality colleagues and bright students.

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<sup>17</sup> As the last column of table 5 indicates, the average salary of lecturers at public doctoral universities is less than the average salary of assistant professors in all categories.

To give the reader a sense of the importance of these faculty members in major research universities, in March 2010 a graduate assistant of mine looked at the web pages of the faculty in the top 20 departments, as measured in the 1995 National Research Council rankings, in four fields, chemistry, economics, English and electrical engineering, and calculated the number of the full-time faculty that were either tenured or in tenure track positions, as well as the number not in tenure track positions, in each department.<sup>18</sup> She based this calculation on the titles of faculty members, counting instructors, lecturers, and professors of practice as non tenure track faculty. I then summed these numbers up over all of the departments in each field and computed the share of the full-time faculty in these departments that were not on tenure tracks.

These shares appear in table 6. They vary from a low of 0.115 in electrical engineering to a high of 0.225 in English; both of these numbers are considerably smaller than the share of full-time faculty that are non tenure track nationwide (table 2). In two of the fields, English and economics, the share is higher at private institutions than it is at the publics, but in the other two fields the pattern is reversed (perhaps reflecting the more serious financial problems of the public doctoral universities). These shares mask the wide variation in the use of full-time non tenure track faculty that currently occurs across departments in the same field. For example, four top twenty economics departments employed no full-time non tenure track faculty members, while four others had shares of full-time faculty that were non tenure track that were in the .0.28 to 0.33 range.

<table 6 about here>

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<sup>18</sup> The rankings are found in Marvin L. Goldberger and Brendan A. Maher (1995). I am grateful to Mirinda Martin for collecting the data for this table.

For students nearing completion of PhD programs, given the dismal job market conditions that now exist, these non tenure track positions at major research universities are likely to be attractive ones. However, students considering PhD study are likely to view them as less attractive and their continued growth, in the long run, may well lead to a decline in the numbers of top American college graduates going on for PhD study.

My research with Liang Zhang showed that the expansion of full-time non tenure track positions at major doctoral universities was less problematic than at other institutions, such as the public masters' level institutions, in the sense that the adverse effects of increasing the share of full-time non tenure-track faculty on undergraduate students' persistence and graduation rates were smaller at the doctoral universities.<sup>19</sup> This is not surprising because the higher compensation levels and lower teaching loads at the doctoral institutions allow them to recruit very talented faculty for these positions. Further expansion of full-time non tenure track faculty at other institutions is likely to be much more problematic for undergraduate students.

### **Technology: Changing How We Teach and Changing Staffing Patterns**

During the debate over health care reform in 2009-2010, proponents of the Obama administration's proposals continually argued that the status quo was not an option. The same can be said for how we teach students and staff our classes in higher education. The financial pressures academic institutions are facing, coupled with the demands on them to increase access and persistence, is forcing institutions to think much more about how they educate their students. Moreover, institutions are learning that the prevailing "lecture/discussion" format that many instructors use does not necessarily promote optimal educational outcomes. In the future, institutions will increasingly use

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<sup>19</sup> Ehrenberg and Zhang (2005b)



technology to help improve learning outcomes and to simultaneously reduce the costs of instruction. In doing so, they will have substantial impacts on how institutions of higher education are staffed.

A growing number of evaluation studies suggest that online education can be as effective as regular class room contacts, especially for more mature students. These same studies suggest that a blend of online and face to face instruction is typically more effective than on line instruction alone (a point that I will come back to shortly).<sup>20</sup> While the marginal costs of delivering online education may be low, the start up costs and the infrastructure needed to support such activities is high. Greg von Lehman, Provost of the University of Maryland University College, which offers more than 100 bachelor's and masters degree programs and certificate programs fully online has stressed the need for "robust IT systems and staff to maintain them, a flexible and reliable learning management system, online student services that cover the range of student needs, online library resources, course development... and the staff necessary to train and manage faculty, while maintaining quality control."<sup>21</sup>

Fully online classes, either at academic institutions that exclusively offer online classes or at campuses that offer online as well as regular classes, represent only one way to use technology to improve the effectiveness of our higher education system. Two examples illustrate this point.

The *National Center for Academic Transformation (NCAT)*, an independent nonprofit organization, has been at the forefront of using information technology to improve learning outcomes for students and reduced costs for institutions. The *Center*

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<sup>20</sup> Barbara Means et. al. (2009)

<sup>21</sup> Greg von Lehmen (2010)

lists over 100 large-enrollment introductory courses that have been redesigned with its help to date in quantitative (mathematics, statistics, computing and science), social science, humanities, and professional studies fields at a wide range of academic institutions (community colleges, comprehensives, doctoral universities). The NCAT website also provides links to descriptions of each of the redesigns ([www.thencat.org](http://www.thencat.org)).

While the NCAT efforts have led to a variety of different “models”, the projects tend to focus on enhancing active learning (often replacing lectures with interactive computer-based learning resources such as tutorials, exercises, and low-stakes quizzes that provide frequent feedback, as well as individual and small group activities), mastering learning objectives, and on-demand help (often in computer labs or online – with both ways staffed by faculty, graduate assistants, peer tutors or course assistants). Evaluations of the success of these efforts provide evidence of each redesign’s effectiveness in improving learning outcomes and/or reducing costs. Some of the cost reduction comes from a reduced reliance on costly full-time faculty and graduate assistants and an increased use of less costly peer tutors and course assistants to staff classes. The course assistants do things such as troubleshooting technical questions, monitoring student performance, and alerting the instructor to difficulties with teaching materials. Put simply, they allow expensive faculty time to be focused on educational matters, not organizational and technology matters. This distribution of responsibilities effectively enhances student to full-time faculty ratios. This permits either increased student enrollment for a given number of faculty members, or a smaller faculty size for a given number of students.

A second example comes from the Open Learning Initiative (OLI) at Carnegie Mellon University (<http://oli.web.cmu.edu/openlearning/initiative> ). OLI has designed more than a dozen classes in introductory subjects in primarily mathematics and science fields that use technology to create intelligent tutoring systems, virtual laboratory simulations, and frequent opportunities for assessment. The OLI has made these classes freely available on its web page. Serious evaluations of an introductory statistics class taught at Carnegie Mellon in 2005 and 2006 found no significant differences in learning outcomes between students taught using traditional instruction methods or the OLI online approach. Moreover, the evaluations also showed that when a hybrid model that combined online learning with classroom instruction was used students learned as much or more than they did in classes using traditional instructional methods in half of the time.<sup>22</sup> With funding from several foundations, OLI is now building a version of its initiative specifically for use by community colleges and will test if the education gains (and cost savings) it found for Carnegie Mellon students from OLI will also hold in the community college context.<sup>23</sup>

The activities of both OLI and NCAT suggest that, at least initially, technology can be used to improve educational outcomes and reduce the time (per student) spent by faculty in introductory level classes at institutions ranging from community colleges to doctoral institutions. In the short run, these initiatives appear much less likely to influence methods of instruction in specialized upper level elective classes. To the extent that such redesigns expand the number of students that full-time faculty can educate, they may reduce the pressure that public and private non profit higher education institutions

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<sup>22</sup> Marsha Lovett, Oded Meyer and Candace Thille (2008)

<sup>23</sup> Steven Kolowich (2009)

have felt to expand their use of part-time adjuncts. However, as we shall quickly see, some for-profits have adopted a completely different staffing model that increases reliance on part-time faculty.

Furthermore, the activities of OLI and NCAT suggest that the comparison that one should be making is not between lecture classes taught by adjuncts and those taught by tenured professors, but between the various ways of organizing and staffing a course and traditional lectures taught by any type of faculty member. Academic institutions focus in the future should be on how classes are structured and taught, as well as on who is teaching them

### **Lessons from the For-Profit Higher Education Sector**

In contrast to traditional public and private non-profit institutions of higher education, which have largely avoided any fundamental restructuring of the traditional tenure-track models of staffing, most institutions within the growing set of for-profit providers have developed new ways of recruiting, training, and assessing faculty members. Though for-profit institutions are a heterogeneous group, three examples from this growing sector clearly emphasize both the shift away from full-time tenure track faculty and the use of technology to improve educational effectiveness.<sup>24</sup> I discuss in turn the University of Phoenix, Capella University and Straighterline/SmartThinking.

The University of Phoenix (UOP) ([www.phoenix.edu](http://www.phoenix.edu)) is now the second largest accredited university system in the United States. In February 2010 it enrolled over 450,000 students at its various physical locations and in online classes, employed approximately 30,000 faculty members and it offered 22 associates' degree programs, 44 baccalaureate degree programs, 45 masters' degree programs, and 11 doctoral level

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<sup>24</sup> Guilbert Hentschke (this volume) discusses for-profit higher education much more extensively

programs.<sup>25</sup> Its focus is on adult learners and it is an open admissions institution at the undergraduate level. Most of its programs prepare students for careers in professional fields such as business, criminal justice, health care, information technology, education, nursing, counseling and organizational leadership, although at the undergraduate level it now offers bachelors' degrees in a few liberal arts subjects.

The way that the University of Phoenix staffs its courses is almost entirely different from the way that things are done at traditional universities. None of its faculty are tenured and their retention and promotion is linked to student outcomes. Only about 1,500 of its faculty members are full-time "core" faculty; these core faculty members' duties include instruction, curriculum oversight and development, and academic and faculty administration. The vast majority of its faculty members are "associate" faculty - practicing professionals with whom UOP contracts to teach individual courses. Approximately two-thirds of these associate faculty members have a master's degree and nearly one-third have a doctoral degree. They are required to have a minimum of five years of professional experience and must be currently employed in the field being taught and to go through an extensive orientation and training program.<sup>26</sup> Classes, with an average of 15 usually working students, meet primarily in the evening, which allows full-time professionals to take on these associate faculty positions. Curriculum is centrally developed by content experts and therefore fairly standardized, although faculty members are allowed to make modifications as long as they cover all the essential learning outcomes.

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<sup>25</sup> University of Phoenix (2009); Apollo Group Inc. Reports Fiscal 2010 Second Quarter Results (<http://phx.corporate-ir.net/phoenix.zhtml?c=79264&p=irol-newsArticle&ID=1407096&highlight=>); personal communication, Dr. Jorge Klor de Alva.

<sup>26</sup> Breneman (2006); personal communication, Dr. Jorge Klor de Alva

The typical associate faculty member teaches 6 courses a year (an undergraduate UOP campus-based course required 20 classroom hours of instruction plus an additional 20 hours of supervised learning team participation) and the faculty are paid the average offered adjuncts in similar geographic regions for comparable numbers of hours of teaching, which ranges up to \$1,900 per undergraduate class.<sup>27</sup> David Breneman interviewed over 20 long-time University of Phoenix associate faculty members and concluded that they did not teach for the money, but rather for the professional contact and stimulation they received from teaching adult students in their field and for the prestige they felt from being faculty members.

Because the associate faculty are by far the majority of the faculty (almost 95% in 2009), they do not feel like second class citizens as many adjuncts at more traditional academic institutions do.<sup>28</sup> One would expect that this would lead to relatively low turnover in the ranks of these faculty members and this is the case. Of all the faculty members who taught 6 or more classes in 2007, nearly 92% taught in 2008, and over 81% taught in 2009.<sup>29</sup>

Faculty members are evaluated in two ways, via self-reported feedback from students and from an assessment of how well their students have mastered the subject matter. The University is extremely data driven and presents numerous comparisons of its students learning outcomes relative to those of comparison groups in its annual reports.<sup>30</sup> Critics of for-profit higher education, and some supporters, believe that analyses of the

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<sup>27</sup> Personal communication, Dr. Jorge Klor de Alva

<sup>28</sup> Breneman (2006)

<sup>29</sup> Personal communication; Dr. Jorge Klor de Alva

<sup>30</sup> University of Phoenix (2008, 2009)

educational effectiveness of the sector will be credible only if independent researchers are granted access to the data needed to do independent evaluations of performance.<sup>31</sup>

In addition to structuring their faculty in ways that are different from most traditional institutions, the University of Phoenix also makes extensive use of technology to facilitate student learning in a number of ways.<sup>32</sup> For example, all course materials and textbooks are provided electronically via the Internet and the university library (also on line) contained over 65,000 publications and 114 data bases in 2009. “Virtual Organizations” is a web based tool that offers a problem based learning environment for students in a variety of contexts (business, health care, schools, and government). Writing and math support services are also provided online. Students can get almost instantaneous feedback on papers through an electronic writing tutor, work with math tutors online in real time, and do self assessments of learning outcomes in a number of areas on line.

Another example comes from Capella University ([www.capella.edu](http://www.capella.edu)), which is physically located in Minneapolis.<sup>33</sup> Capella awards masters and doctoral degrees to adult learners in primarily professional fields, although it also has some bachelor’s degree programs. In the fall of first quarter of 2010, it enrolled over 33,000 students of whom about 90 percent were part-time and over 80 percent were graduate students. In the previous year, it awarded over 450 bachelors, 2000 masters, and 800 doctoral degrees. While Capella is categorized as an on-line institution, its programs actually are “hybrid

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<sup>31</sup> Doug Lederman (2010)

<sup>32</sup> University of Phoenix (2008, 2009)

<sup>33</sup> I am grateful to Michael Offerman, former President of Capella and now both Vice Chairman for External Initiatives and Interim President for Capella for providing me with insights about and data for the institution.

programs', because most programs require face-to-face meetings, typically for a week at a time, that occur in airport hub cities.

Given its emphasis on graduate education, over 80% of its faculty members have doctoral degrees. More than 25% of its faculty members are full-time employees. Capella requires that its newly hired faculty have a minimum of three years of teaching experience. As with the University of Phoenix, there is no tenure system in place at Capella. However, unlike Phoenix, because Capella has such a high proportion of doctoral faculty, it is very cognizant of the need to pay competitive salaries to attract and retain quality faculty. As a result, Capella relies on comparative faculty salary data in setting salaries, much the way many private non-profit and public colleges do. Salary decisions are merit based and based on performance evaluations done by chairs of departments and reviewed by the associate deans of the various schools. Most of its faculty members are long-term, turnover is relatively low, with a turnover rate of 8.7% during calendar year 2009, and the faculty is surveyed to give Capella a sense of their job satisfaction. Capella feels that its compensation policies are validated by its faculty members' levels of job satisfaction and engagement, their low levels of turnover, and the rate at which it attracts candidates for open positions.

Both Capella and Phoenix base their educational strategies heavily on peer-to-peer learning and instructional models that focus on learning outcomes and prescribed rubrics.<sup>34</sup> Capella faculty members are evaluated by their students' success in achieving these outcomes and they have considerable flexibility in the materials they choose to use in their classes. However, because all materials are posted on line, they must get prior

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<sup>34</sup> These models may be more difficult to apply to younger students.



approval from Capella for use of all materials to insure that the institution abides by all intellectual property rules.

While neither Phoenix nor Capella has a tenure system, their staffing patterns (full-time vs. part-time) and compensation practices differ greatly. So even within the for-profit sector, there is no single model of staffing and compensation. They also differ in the share of faculty that has doctoral degrees because Capella is primarily a graduate institution. This heterogeneity in staffing patterns, compensation and degrees held by faculty illustrates the diverse array of faculty models that exists within the for-profit sector. It also mirrors my earlier discussion of what currently goes on in the rest of higher education and suggests that competition from the for-profit sector will differentially impact on staffing patterns at different types of academic institutions.

In particular, we might expect that the institutions that compete most directly with the for-profits for undergraduate students, community colleges and comprehensives, would be the ones who will be most likely to try to emulate the for-profits model of offering classes at times and places that are convenient for students; this will put increasing pressure on them to expand their use of part-time faculty even more. Indeed many community colleges now trumpet that they are using their facilities twenty four/seven, both because of physical capacity constraints and to meet employed students' needs.<sup>35</sup>

Another important feature of both Phoenix and Capella, as well as of OLI and NCAT, is their concern with proving that they produce comparable, or more, student learning, at the same, or lower cost, than more traditional forms of instruction. Indeed, professors at both Phoenix and Capella are evaluated and rewarded based largely on their

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<sup>35</sup> David Moltz (2009a)

students' performance. This is in great contrast to public and private non-profit higher education institutions, where currently "evaluations" of faculty members' teaching performance are often based on student evaluations, peer evaluations of lectures, or faculty colleagues and administrators perusing class reading lists and (at tenure time) faculty members' "teaching portfolios".<sup>36</sup>

The for-profit sector also includes firms that are not stand-alone degree-granting institutions, but that provide college-level coursework in a piecemeal fashion. One such firm, StraighterLine, offers yet another prototype of how institutions might structure course offerings and student learning. StraighterLine ([www.straighterline.com](http://www.straighterline.com)) offers low-cost online remedial and introductory level college classes, based on materials prepared by McGraw-Hill, in a number of subjects at relatively low costs.<sup>37</sup> These classes are self guided and students can utilize a tutor from SmartThinking ([www.smarthinking.com](http://www.smarthinking.com)) and receive instant feedback on line. These tutors go through an extensive training process before being employed. Students also submit assignments and papers to the tutors for feedback and grading.

About 90 percent of SmartThinking's tutors have masters or doctoral degrees.<sup>38</sup> SmartThinking does far more extensive training and evaluation of its tutors than most colleges. The tutors come from all over the world. They are organized in a "call center" model rather than in an "instructor led" model and SmartThinking's developers believe this leads to much better service levels for students. Tutors' pay is comparable to what an adjunct professor would receive for comparable hours, but once they are trained there is

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<sup>36</sup> David Glenn (2010) discusses efforts that have been made to embed student learning outcomes in course evaluations including those of the IDEA Center ([www.ideacenter.org](http://www.ideacenter.org)) and the Student Assessment of Learning Gains ([www.salgsite.org](http://www.salgsite.org))

<sup>37</sup> Jeff Young (2009)

<sup>38</sup> The material in this paragraph was provided to me by Burck Smith via email on March 25, 2010.

no prep time for classes or follow up after class. Most of their tutors work for SmartThinking as a second job. Their high share of tutors with advanced degrees is due, in part, to the state of the PhD labor market and the excess supply of PhDs.

StraighterLine classes allow students who are unsure about whether they want to, or are qualified to, attend college to “test the water” in a low-cost convenient way. Moreover, three colleges have agreed to accept these classes for credit if a student subsequently enrolls at them, although there has been some faculty backlash to their administrations agreeing to do so.<sup>39</sup>

StraighterLine’s approach obviously reduces the need for all faculty members. Currently it can not provide automatic college credit for its classes because institutions can be considered for accreditation only if they offer degrees.<sup>40</sup> To the extent that either StraighterLine rapidly expands and more colleges make arrangements to accept its classes for credit, or the system of accreditation changes to allow providers such as StraighterLine to provide classes for credit, it’s approach could potentially have a large impact on the need for faculty in the future.<sup>41</sup>

### **Changing Where Students are Educated and Improving System Effectiveness**

While the professoriate has changed, so too have student enrollment patterns and the demands placed on institutions of higher education. Needless to say, changes in the types of institutions that increasingly attract college-going students, as well as the efforts being made to improve the effectiveness of our higher education system, will have an

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<sup>39</sup> Peter Katopes (2009)

<sup>40</sup> Burck Smith (forthcoming)

<sup>41</sup> StraighterLine is not the only purveyor of individual online classes. For example Statistics.com ([www.statistics.com](http://www.statistics.com)) teaches more than 80 statistics classes online and currently enrolls about 2,500 primarily adult students. The American Council on Education has supported its members granting transfer credits for these courses, although it has only documented about 38 requests for such credits to date (Steven Kolowich 2010)

impact on the types of faculty members that deliver undergraduate instruction. For example, the expansion of 2-year colleges as ports of entry to higher education and improving articulation agreements between 2-year and 4-year colleges will shift more remedial and introductory level instruction to the 2-year colleges. These institutions employ relatively few full-time faculty members and relatively few faculty members with doctoral degrees (table 3) so a shift toward 2-year colleges will reduce the demand for faculty with doctoral degrees. So too will the expanding numbers of students enrolling in advanced placement (AP) classes, international baccalaureate programs, and dual degree programs while in high school.<sup>42</sup> These trends will shift more of the teaching of introductory college classes to high schools and 2-year colleges, neither of which employs many faculty members with doctoral degrees.

On the other hand, the evidence is mixed on the effectiveness of AP classes relatively to traditional college level introductory classes in preparing students for advanced classes in a field, and for college success more generally.<sup>43</sup> Moreover, some colleges, mostly high tuition selective private institutions, are beginning to restrict or eliminate the granting of college credit for AP classes, instead using the classes only for placement purposes. These “protectionist efforts”, which are at least partially an effort to protect an institution’s tuition revenue flow, may lead to increased demand for faculty with doctoral degrees to teach upper division elective classes. This is particularly likely to happen at the more selective institutions that enroll students who have typically taken AP classes while they were enrolled in high school.<sup>44</sup>

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<sup>42</sup> College Board (2010) and Elyse Ashburn (2007)

<sup>43</sup> See for example Philip Sanders and Robert Tai (2007), Krstin Klopfenstein and M. Kathleen Thomas, and Kirabo Jackson (2009) (forthcoming)

<sup>44</sup> David Moltz (2009b)

## Looking to the Future

Given the pressure being put on both private and public colleges and universities to expand enrollments and graduation rates and to meet the changing needs that a changing student population presents them, serious thought has to be given to how we can improve the educational efficiency of individual academic institutions and our higher education system. I have discussed several examples of how technology can be used to both reduce costs and improve learning outcomes. I have also discussed how some of the important organizations in the for-profit higher education sector have embraced efforts to do so and, in turn, have positioned themselves as the leaders in changing the ways in which college students are educated and how faculty are evaluated.

So what will the future bring? Economists are not much better than weathermen in making long-run forecasts but I will venture some here. The leading private liberal arts colleges and the wealthy private and flagship public research universities are in a world of their own. It is here that we are most likely to see the full-time tenured and tenure track faculty maintained.<sup>45</sup> Technology will be increasingly employed at these institutions in introductory level classes in an effort to expand active learning and to reduce costs, with the cost saving going towards enhancing the quality of upper division classes and enhancing the research enterprise. An expansion of full-time non tenure track faculty will likely occur at the research universities to further free up the time of the tenure track faculty for research. The pay levels at these institutions and their relatively low teaching

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<sup>45</sup> I say “most likely” because forces may erode tenure track faculty at them also. The flagship publics will not be immune to the severe financial pressures that public higher education will continue to face and the social pressures that all the selective institutions will all face to expand enrollments, to keep tuition increases moderate, and to provide increased grant aid to maintain and expand their accessibility, will likely place substantial pressures on their cost structures.

loads may be sufficient to keep these non tenure track positions attractive to new PhDs. Some new PhDs, such as those who are attracted to places like Capella University, may actually find these jobs preferable to the “up and out” tenure track positions with high research expectations.

The public regional doctoral universities, the public and private comprehensives the other private liberal arts colleges, and the two-year colleges are likely to continue to be under increased financial stress, while facing increased pressure to expand enrollments and to improve efficiency. “Deskilling” of their professoriate is likely to occur in the sense that a greater share of their faculty will not have doctoral degrees and a greater share will not be full-time or on tenure track lines. To the extent that public and private non profit institutions put much more effort into selecting, training, evaluating and supporting their non tenure track faculty, this deskilling will in itself not necessarily reduce the amount that students learn. The use of technology to reduce costs and improve learning will likely occur more rapidly in introductory level courses at these institutions than it will at the wealthy research universities and selective liberal arts colleges. A greater share of “instruction” at these institutions will be undertaken by people in non faculty positions; one can easily envision the types of tutors employed by SmartThinking, or the types of people employed in some of the innovative positions developed by institutions participating with the National Center for Academic Transformation in redesigning classes, becoming much more widespread.

Pressures for “accountability” surely will increase and colleges are also increasingly being asked to demonstrate student learning outcomes as part of the accreditation process. This will likely put more focus in academia on the quality of

undergraduate instruction and the need to assure that the best instructors are rewarded and promoted. If so, we might expect to see an increased focus, especially in remedial and introductory classes, on evaluating faculty at least partially by their students' outcomes, as the for-profits do. The institutions that compete the most directly with the for-profits would be the places where the pressure to do this would be the greatest.

Old timers and many in the professoriate will bemoan the decline of the golden age of American higher education, just as many people bemoan the use of automated answering services by American corporations. But economic forces will continue to cause the trends that we have already begun to observe. There is no such thing as a free lunch and higher education is not immune to fundamental economic forces and trends.

Of course there are some qualifications. First, the growing use of adjuncts and their perennially low salary levels may lead to increased unionization for them, which could in turn, lead to a decline in the economic benefit of hiring adjuncts. While there is a case for the use of practicing professionals as part-time professors, substituting long term full-time faculty for part-timers in arts and science classes would likely lead to improved student outcomes. This would be a desirable side effect of increased unionization of adjuncts if it were to occur. Increased adjunct unionization might also lead to increased use of on-line classes to economize on faculty time. Whether collective bargaining agreements for adjuncts could prevent this type of outsourcing is unclear. Pressure may also grow for increased unionization of full-time non tenure track faculty at institutions in which job stability and compensation are not sufficiently attractive.

Second the declining use of tenured and tenure track faculty nationwide, as well as the decline in the number of faculty with doctoral degrees, at all but a subset of

institutions, will likely increasingly discourage American college students from considering going on for PhD degrees. This would reduce the supply of PhDs available to take full-time and part-time non tenure track positions and lead to a further deskilling of the professoriate. A reduced supply of PhDs may also have serious implications for the academic research enterprise and our nation's rate of productivity growth. More generally, the nation needs to worry about how financing doctoral education in a way to ensure an adequate supply of the best and brightest students going on for PhD study and research careers

Finally, we must not lose sight of the importance of non instructional inputs in student success. The best for-profits realize this and devote considerable resources to counseling and supporting students. Research that Douglas Weber and I conducted showed that the amount colleges and universities spend on student services, broadly defined, influences the persistence and graduation rates of students at 4-year colleges and universities and that these expenditures have a greater impact on students at institutions with large fractions of disadvantages students in terms of entry test scores and family income levels.<sup>46</sup> These are the students who the nation will increasingly try to enroll in higher education and who will be the focus of efforts to improve persistence and graduation rates. If we care about student success we need to focus on more than how we staff our classes and the characteristics of the faculty of the future.

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<sup>46</sup> Douglas Webber and Ronald G. Ehrenberg (forthcoming)



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Table 1

Percentages of Instructional Faculty That Are Full – Time  
in Degree Granting Institutions in the United States

Year	Percentage Full-Time
1970	77.9
1975	70.1
1980	65.6
1985	64.2
1989	63.6
1995	59.1
1999	57.5
2007	51.3

Source: U.S Department of Education, *Digest of Education Statistics: 2009* (Washington DC, 2010), table 249 (<http://nces.ed.gov/programs/digest/d089> ). Instructional Faculty include faculty with professorial ranks including instructors, lecturers, and adjunct or interim professors. The category excludes graduate students with titles such as graduate assistants or teaching fellows.

Table 2

Percentage of Full-Time Faculty with Tenure or on Tenure-Track Nationwide  
at Title IV Degree Granting Institutions

Year	Percent FTF with Tenure	Percent FTF on Tenure Track	Percent FTF Not on Tenure Track
1975	52.3	29.1	18.6
1989	52.0	21.3	26.6
2003	44.9	20.4	34.8
2007	42.6	19.1	37.5

Source: U.S. Department of Education, IPEDs Fall Staff Surveys



Table 3

Percentages of Part-time Instructional Faculty and Percentages of Instructional Faculty with Doctoral Degrees, By Institutional Type, Fall 2003

Year/Institution Type	Percentage of Part-Time Faculty	Percentage of Full-Time Faculty with Doctoral Degrees	Percentage of Part-Time Faculty with Doctoral Degrees
Fall 2003 Total	43.7	59.6	17.6
2003 Public Research	19.7	73.7	35.6
2003 Private Research	26.8	69.4	28.7
2003 Public Doctoral	28.8	71.9	24.1
2003 Private Doctoral	41.5	75.4	35.0
2003 Public Comprehensive	36.0	72.1	22.7
2003 Private Comprehensive	56.4	65.0	22.6
2003 Private Liberal Arts	36.4	69.1	22.2
2003 Public 2-Year	66.7	17.9	8.7

Source: U.S. Department of Education, *Digest of Education Statistics: 2008* (Washington DC, 2009), table 252 (<http://nces.ed.gov/programs/digest/d08>). Instructional faculty include faculty with professorial ranks, including instructors and lecturers, and adjunct and interim professors. The category excludes graduate students with titles such as graduate assistants or teaching fellows.

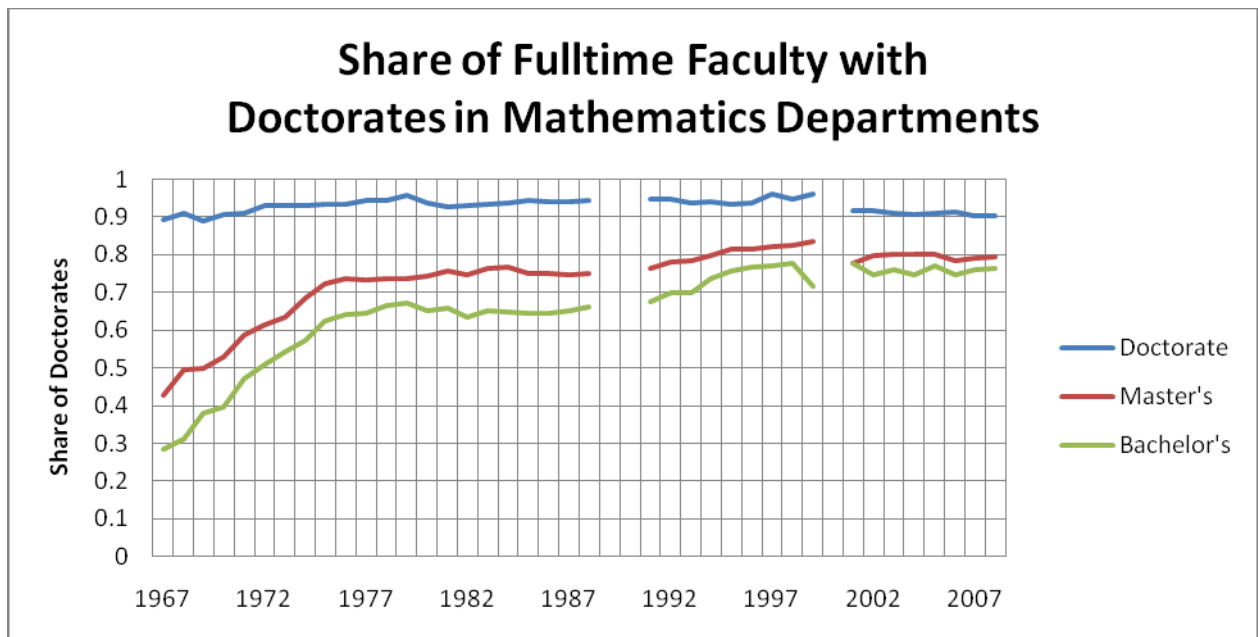
Table 4

Percentages of Part-time Instructional Faculty and Percentages of Instructional Faculty with Doctoral Degrees, By Subject Area, Fall 2003

Subject Area	Percentage of Part-Time Faculty	Percentage of Full-Time Faculty with Doctoral Degrees	Percentage of Part-Time Faculty with Doctoral Degrees
Agricultural and Home Economics	30.2	63.0	15.5
Business	51.0	61.9	11.5
Education	55.5	57.7	19.4
Engineering	29.5	77.1	31.2
Fine Arts	52.5	34.6	7.1
Health	38.1	28.9	11.1
Humanities	50.0	63.2	13.4
Natural Sciences	33.4	80.6	29.7
Social Sciences	37.4	86.0	37.7
Other	48.7	44.6	11.7

Source: U.S. Department of Education, *Digest of Education Statistics: 2008* (Washington DC, 2009), table 254 (<http://nces.ed.gov/programs/digest/d08>). Instructional faculty include faculty with professorial ranks, including instructors and lecturers, and adjunct and interim professors. The category excludes graduate students with titles such as graduate assistants or teaching fellows.

Figure 1



Source: Annual survey data collected by the American Mathematical Society and published annually in *Notices of the AMS*. The data are available at [www.ams.org/employment/surveyreports.html](http://www.ams.org/employment/surveyreports.html)

Table 5

Average Faculty Salary by Rank and Institution Type in 2008-2009

Institution /Rank	Professor	Assistant Professor	Lecturer	Lecturer Salary at Private Doctoral / Assistant Professor Salary in the Category	Lecturer Salary at Public Doctoral/ Assistant Professor Salary in the Category
Private Doctoral	151,403	82,295	62,799	0.763	0.630
Public Doctoral	115,509	68,048	51,827	0.923	0.761
Private Masters	99,555	61,986	54,408	1.013	0.836
Public Masters	88,357	59,416	49,159	1.057	0.872
Private Bachelors	98,808	58,882	58,014	1.067	0.880
Public Bachelors	84,488	56,997	49,708	1.102	0.910
2-Year Colleges	74,933	53,427	50,415	1.175	0.971

Source: American Association of University Professors, *2008-2009 Report on the Academic Status of the Profession*, table 4 ([www.aaup.org](http://www.aaup.org))

Table 6

Share of Full-time Faculty in the Top 20 Departments in the 1995 National Research Council Study that are not on Tenure Tracks

Department	All (number of departments)	Private (number of departments)	Public (number of departments)
English	0.225 (19)	0.260 (11)	0.182 (8)
Economics	0.159 (20)	0.169 (13)	0.143 (7)
Chemistry	0.146 (20)	0.103 (10)	0.170 (10)
Electrical Engineering	0.115 (20)	0.108 (8)	0.125 (12)

Source: Author's calculations from faculty data on departmental web pages in March 2010. One top 20 department in English was excluded because it was impossible to determine which faculty members were full-time from its web page. Some electrical engineering departments are electrical engineering and computer science and in those cases, when it was possible to identify and exclude the computer science faculty they were excluded.