

# A Focus on Faculty

By Michael L. Whalen

With contributions from Marin E. Clarkberg

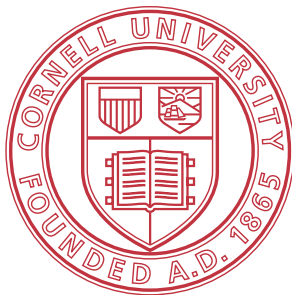
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# A FOCUS ON FACULTY

## INTRODUCTION

The heart of a university is its faculty—the professors responsible for the institution’s academic mission.<sup>1</sup> Faculty are also the economic engine of higher education: producing and delivering course content; generating knowledge and intellectual property; and providing a variety of services for students, government agencies, corporations, foundations, and the general public. In turn, institutions make significant economic investments in their faculty—in the form of salaries, benefits, equipment and space, library collections, graduate student support, among other costs. Faculty are deeply involved in institutional guidance and management, undertaking important leadership roles at department, college, and university-wide levels. At Cornell, faculty hold 18 of the 32 senior administrative positions, and two professors are voting members of the Board of Trustees. The purposeful inclusion of faculty in the management of higher education helps ensure that the institution’s focus remains squarely on its academic mission and allows professors to discharge one of their most important duties: the selection of new faculty and the tenuring of those professors who are to enter into what may be lifelong affiliation contracts. The crucial nature of this function cannot be overstated, as the quality of the faculty defines the quality of the institution—and the best judges of faculty quality are faculty peers.

From now until Cornell’s sesquicentennial in 2015, the university will replace more than one-third of the Ithaca campus faculty. The timing and magnitude of this process have been influenced by: (a) the end of mandatory retirement for faculty in the 1990’s; (b) the “baby boom” effect, which expanded the size of the student body and fueled a concomitant need

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<sup>1</sup>For the purposes of this article the term *faculty* will refer exclusively to individuals in tenured and tenure-track positions with the title of professor (e.g., professor, associate professor, and assistant professor), excluding the faculty of the Joan and Sanford I. Weill Medical College and Graduate School of Medical Sciences. Some of the issues discussed herein apply to the entire Ithaca campus academic workforce, including instructors, lecturers, research and extension associates, and librarians, among others. The general exclusion of individuals employed in these non-professorial roles from this article is for the purpose of focus, and does not reflect negatively on the importance of their contributions to Cornell’s academic mission.

for additional faculty during the second half of the twentieth century; (c) the continued emergence of new academic disciplines; and (d) the rapid evolution of disciplinary subfields, even within long-established areas of academic interest. These conditions are not unique to Cornell; almost all peer institutions engage in a major and intense competition, nationally and internationally, for the best faculty. Cornell’s efforts to substantially renew its faculty will also occur during a period when faculty demographics, roles, expectations, patterns of support, and disciplinary boundaries will continue to change and the size of selected fields will be expanded. Further, faculty turnover itself may influence the continuing evolution of the professorial role. Understanding the intersection and interaction of these factors and forces will be important as the institution’s faculty and academic leadership manage this major transformation.

## THE ROLE OF THE FACULTY

Springing from its Latin root, the word *professor* identifies someone who possesses special knowledge, beliefs, or skills and openly declares or avows—professes—the details of those subjects. Initially associated with Christianity, the term evolved to be the title of a teacher of the highest rank in the first European universities—specifically the holder of an endowed or established *chair* at these institutions. Thus, professors at Cambridge or Oxford stood at the apex of the teaching staff—senior to readers, lecturers, and instructors. The system of higher education founded in colonial America took its cue from that mold, especially as it existed at Cambridge’s Emmanuel College.

In his seminal 1990 appraisal of the state of higher education in America, *Scholarship Reconsidered: Priorities of the Professoriate*, Ernest Boyer described the evolution of “three distinct, yet overlapping phases” of scholarship in the United States, each of which progressively redefined the role of the professoriate and led ultimately to the current understanding of what it means to be a faculty member in higher education.

- The first phase, which stretched from Harvard University’s founding in 1636 through the early decades of the nineteenth century, “...focused on the student—on building character and preparing new generations for civic and religious leader-



Cornell Faculty – 1882

ship.” Theodore Benditt described the pre-Civil War role of faculty in blunt terms:

...professors were hired not for their scholarly ability or achievement but for their religious commitment. Scholarly achievement was not a high priority, either for professors or students.

Morris Bishop described Andrew D. White’s experience at Yale University in the 1850’s as typical:

“There was too much reciting by rote and too little real intercourse between teacher and taught. The instructor sat in a box, heard students’ translations without indicating anything better, and their answers to questions with very few suggestions or remarks.” The work in classics dealt with grammatical construction alone. In a course in science, or Natural Philosophy, the textbook was merely recited, in the chinese [sic] manner.

- According to Boyer, the second phase gathered momentum after the American Revolution, when the nation’s “...higher education focus began to shift

from the shaping of young lives to the building of a nation.” As Boyer noted,

The practical side of higher learning was remarkably enhanced by the Morrill Act of 1862...[which supported] both education in the liberal arts and training in the skills that ultimately would undergird the emerging agricultural and mechanical revolutions. The...ideal of education as a democratic function to serve the common good was planted on the prairies.

Willa Cather captured the essence of this change in her description of students and faculty at the University of Nebraska in the 1890’s:

[They] came straight from the cornfields with only summer’s wages in their pockets, hung on through four years, shabby and underfed, and completed the course by really heroic self-sacrifice. ...There was an atmosphere of endeavor, of expectancy and bright hopefulness about the young college that had lifted its head from the prairie only a few years ago.

The Morrill Act and concurrent changes in the curriculum at institutions like Cornell and Harvard created a sea-change, according to Boyer, as "...American higher education, once devoted primarily to the intellectual and moral development of students, added service as a mission."

- The third phase, which led to the development of the modern research university, was the introduction of the German concept of scholarship and an emphasis on the Ph.D. as the defining measure of academic achievement. At Cornell, Andrew D. White crafted a design for a new university that would be an "asylum for Science, where truth shall be sought for truth's sake," and where graduate work would be one of its major concerns. The *Cornell Register*, published in 1869, noted that it would offer four graduate degrees. In less than 20 years, from 1860 to 1880, the concepts of graduate education and the doctorate had swept across the U.S. higher education landscape.

An enhancement to this third phase occurred during and after World War II. In 1945, Vannevar Bush called upon universities and the federal government to build upon their wartime partnership to "insure our health, prosperity, and security as a nation in the modern world." As Boyer described,

Soon, a veritable army of freshly minted Ph.D.s fanned out to campuses across the country. ...this new generation of faculty found themselves committed not only to their institutions, but also to their professions. ...In the new climate, discipline-based departments became the foundation of faculty allegiance, and being a "scholar" was now virtually synonymous with being an academic professional.

Accompanying this change was a "revolution of rising expectations" as "the nation moved from *elite* to a *mass* system of higher education." Following World War II, there was a flood of returning students. In the peak year of 1947, veterans accounted for 49 percent of U.S. college enrollment. Federal legislation of the mid-1960's extended higher education access to low-income students, and the philosophy of need-based financial aid, which was established throughout federal aid programs in the 1970's, continues today.<sup>2</sup> As Boyer noted, "Higher education, once viewed as a privilege, was now accepted as a right."

<sup>2</sup>The enrollment of first-time freshmen in U.S. degree-granting institutions of higher education climbed from 670,000 in 1954-55 to 2,515,000 by 1975-76.

## Four Forms of Scholarship

In *Scholarship Reconsidered: Priorities of the Professoriate*, Ernest Boyer observed that

...even as the mission of American higher education was expanding [in the latter half of the twentieth century], the standards used to measure academic prestige continued to be narrowed. Increasingly, professors were expected to conduct research and publish results. Promotion and tenure depended on such activity.... Ironically, at the very time America's higher education institutions were becoming more open and inclusive, the culture of the professoriate was becoming more hierarchical and restrictive. ...the focus had moved from the student to the professoriate, from general to specialized education, from loyalty to the campus to loyalty to the profession.

While faculty are expected to carry out more than one of the three academic missions of teaching, research, and public service, "...when it comes to making judgments about professional performance, the three rarely are assigned equal merit." Instead,

Basic research has come to be viewed as the first and most essential form of scholarly activity, with other functions flowing from it. Scholars are academics who conduct research, publish, and then perhaps convey their knowledge to students or apply what they have learned. The latter functions grow *out of* scholarship, they are not to be considered a part of it.

Boyer argued that scholarly activity needed to be recast in terms broader than research, and proposed a new definition of faculty work that reflected "...more realistically the full range of academic and civic mandates." Specifically, he proposed a paradigm of four separate but overlapping functions: "...the scholarship of *discovery*; the scholarship of *integration*; the scholarship of *application*; and the scholarship of *teaching*."

- The *scholarship of discovery* serves a dual function. Not only does it "...contribute to the stock of human knowledge," according to Boyer, "...but also to the intellectual climate of a college or university." As William Bowen once remarked, discovery ...reflects our pressing, irrepressible need as human beings to confront the unknown and to seek understanding for its own sake. It is tied inextricably to the freedom to think freshly, to see propositions of every kind in ever changing light. And it celebrates the special exhilaration that comes from a new idea.

The scholarship of discovery occurs in all fields: the arts, the humanities, business and management, and law, as well as the biological, physical, and social sciences.

- The *scholarship of integration* describes those activities in which (in Boyer's view) scholars ...give meaning to isolated facts, putting them in perspective. By integration, we mean making connections across the disciplines, placing the specialties in larger context, illuminating data in a revealing way, often educating nonspecialists, too.

The interdisciplinary nature of such scholarship is paramount as faculty build upon the traditional strengths of disciplinary work to construct what Boyer termed "new topologies of knowledge."

Mark Van Doren once observed that

The connectedness of things is what the educator contemplates to the limit of his capacity. No human capacity is great enough to permit a vision of the world as simple, but if the educator does not aim at the vision no one else will, and the consequences are dire when no one does.

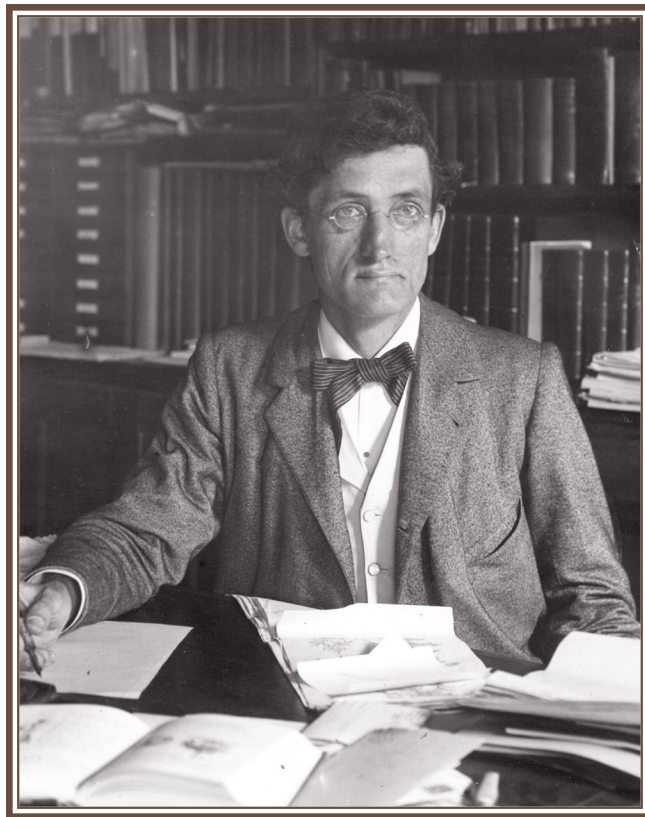
Currently, the interdisciplinary nature of research and scholarship is creating fundamental shifts in university organization, curriculum deployment, and government grant and contract funding patterns. In this vein, Cornell boasts more than 100 interdisciplinary research organizations that bring faculty and students together from across the university to pursue research, teaching, and outreach on a variety of scholarly and social topics.

- The *scholarship of application*, according to Boyer, ...moves toward engagement as the scholar asks, "How can knowledge be responsibly applied to consequential problems? How can it be helpful to individuals as well as institutions? And further, "Can social problems *themselves* define an agenda for scholarly investigation?"

It was the practical application of the fruits of scholarship that first energized the land-grant movement and led ultimately to the founding of Cornell University. An early advocate of this innovation was Liberty Hyde Bailey, who came to Cornell as a faculty member in 1888. As the Encyclopædia Britannica notes, Bailey

...established botanical science as the basis of horticultural research, teaching, and practice; ...invited physiologists and chemists to investigate problems of plant culture and production, encouraged geneticists to work with cultivated plants, and introduced to botanical education methods of "in-the-field" instruction that largely superseded exclusive emphasis on expository classroom teaching.

According to Philip Dorf, Bailey once observed that he "...looked upon the good farms of New York State as laboratories for the College of



Liberty Hyde Bailey – 1891

Agriculture." With the passion of a firm believer, Bailey emphasized that

Extension work is not exhortation. Nor is it exploitation of the people, or advertising of an institution, or publicity work for securing students. It is a plain, earnest, and continuous effort to meet the needs of the people on their own farms and in the localities.

Bailey's relentless drive, enthusiasm, and political acumen paved the way for a blossoming of outreach activities that today span many of Cornell's disciplines, taking varying forms, including the Cornell Cooperative Extension program, with its system of 55 county-based associations.

- The *scholarship of teaching* encompasses all of those activities involved in educating students in and beyond the formal classroom setting, and it is based on a lifelong commitment to master a subject and continue to hone that expertise as new facts and concepts develop. As Boyer noted,

Teaching can be well regarded only as professors are widely read and intellectually engaged. One reason legislators, trustees, and the general public often fail to understand why ten or twelve hours in the classroom

each week can be a heavy load is their lack of awareness of the hard work and the serious study that undergirds good teaching.

Teaching educates not only the taught but the instructor as well, and is thus the “highest form of understanding,” according to Aristotle. Boyer described teaching as

...a dynamic endeavor involving all the analogies, metaphors, and images that build bridges between the teacher’s understanding and the student’s learning.

Teaching was the first scholarly activity at Cornell, represented clearly in the Morrill Act mandate to

...teach such branches of learning as are related to agriculture and the mechanic arts...in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life....

Teaching was also at the heart of Ezra Cornell’s famous motto—“**I would found an institution where any person can find instruction in any study.**”

It is important to recognize that the role of a faculty member in higher education is, first and foremost, to be a *scholar*, and that scholarship spans a variety of activities that interact and intersect. As Boyer concluded,

What we urgently need today is a more inclusive view of what it means to be a scholar—a recognition that knowledge is acquired through research, through synthesis, through practice, and through teaching. We acknowledge that these four categories—the scholarship of discovery, of integration, of application, and of teaching—divide intellectual functions that are tied inseparably to each other. ...Such a vision of scholarship, one that recognizes the great diversity of talent within the professoriate, also may prove especially useful to faculty as they reflect on the meaning and direction of their professional lives.

While there is not universal agreement with Boyer’s characterization of the nature of scholarship, and some may take issue with the legitimacy and implied equality of these four categories, Boyer articulated important questions concerning the faculty’s tripartite mission of teaching, research, and public service. In doing so, he provided a framework in which to discuss the inherent tensions that arise from the relative importance of these academic roles—as viewed by the general public, as analyzed by governments and pundits, as evaluated by colleges and universities in making tenure and other career decisions, as understood by students in their intense but limited interaction with faculty, and as experienced by faculty in their own daily lives as professors.

## How Faculty Spend Their Time

In a book chapter entitled “(Mis)Understanding Academic Work,” the author James Axtell observed that

Periodically, American politicians, pundits, editors, and writers of letters to editors feel compelled to take our colleges and universities to task...suggesting that the route to “fiscal responsibility” lies in getting more pedagogical bang for the public buck. ...[calling] for more work—more classroom teaching of more students—and less research from the pampered professoriate. The implication behind these proposals is that professors as a class do not work very long or very hard at their highly paid jobs.

Part of the problem is the public’s tendency to focus exclusively on classroom instructional time, which on the face of it can look light relative to the comparable time spent by primary and secondary school teachers. As Axtell notes, “...most professors at four-year institutions today teach in the classroom between five and twelve hours a week.” It is Axtell’s view that “... *any* statistic about classroom hours is meaningless in isolation.” The general public should not be faulted for this lack of understanding as colleges and universities are fairly ineffectual in educating the populace about how faculty spend their time. As Axtell noted,

There are no TV sitcoms, series, or dramas starring college professors. Academic novels and films are of little help because they tend to focus on the usual fictional themes of greed, sex, and power, with only a vestigial collegiate setting to support their heavily satirical, romantic, or cantankerous treatments. ...Even college graduates are rarely informed about the work habits of their professors because the great majority of students seldom see more than one of their teachers’ multiple roles performed and have little contact with professors outside class and occasional office visits.

There have been several national studies of faculty effort, including a 1988 U.S. Department of Education sampling of over 11,000 faculty at 480 institutions and series of triennial studies done by the Higher Education Research Institute at UCLA. Axtell, in analyzing the 1988 data, reported that

...professors in all institutions work an average of fifty-three hours a week. ...Professors in public research universities, such as the multiversities of Minnesota, California, and Virginia, put in fifty-seven hours. ...Virtually no one works as few as forty hours, which constitute the standard American workweek. A similar study in Great Britain recently found that while all faculty members worked an average of 53 hours a week, as in the United States, senior professors put in 59 hours and female professors a prodigious 64.5 hours.

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If faculty spend between five and twelve hours in the classroom and yet work 53 hours per week, what activities occupy the difference? To understand the answer (the answer being: it depends) one must realize, as Axtell says, "...that professors, like members of other learned professions, make careers in stages." As with professionals such as lawyers and physicians who go through extended periods of apprenticeship, both the workload and the pattern of tasks vary throughout the faculty career path. As Axtell observed,

...assistant professors tend to put in extra long hours finishing their dissertations and first books, writing their first sets of lectures for new classes, and overextending themselves in committee work, conference-going, and other pre-tenure paths to academic success. With a few publications, initial drafts of lectures and class notes, and tenure under their belts, associate professors can begin to devote slightly less time to career and slightly more to postponed personal lives or families. Then, as they gain seniority, responsibility, and perhaps eminence as full professors and children grow up and away, faculty members are likely to be consumed again by heavy professional demands.

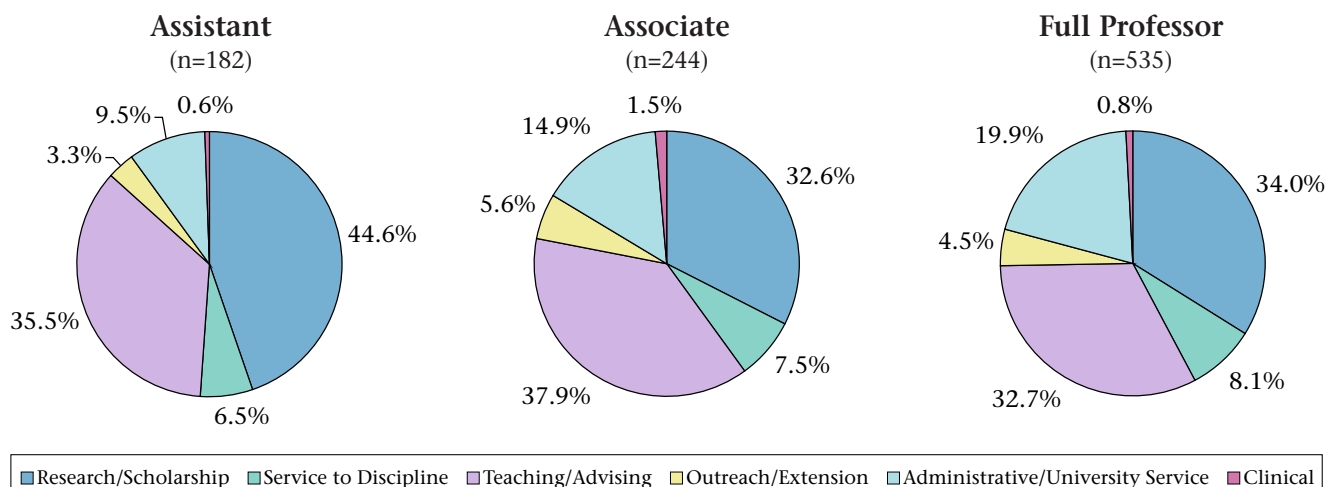
The other unique employment circumstance for most professors (which they share with primary and secondary education teachers) is the nine-month, or academic-year, appointment—a contractual work pattern that is at variance to that of most American workers, including other professionals. Faculty with nine-month appointments frequently spend the other three months of the year teaching in summer pro-

grams, conducting research, writing and publishing, preparing grant applications, and advising and mentoring graduate students. (See page 27 for a discussion of related compensation issues.) The concept that a college professor's employment is less than full time is illusory. Faculty are generally fully engaged in their scholarly endeavors throughout the year, with a time commitment that exceeds that of most U.S. workers.

The graphs below summarize the responses that Cornell's Ithaca campus faculty made to a survey question concerning their work. While faculty were not asked to explicitly estimate their work hours, many volunteered that they worked well over 40 hours a week. As the graphs show, this survey found the same types of differences among the three faculty ranks in how they carry out their academic duties as described by Axtell. All three ranks spend about one-third of the workweek teaching and advising students. The amount of time engaged in research and scholarship is greater for assistant professors (who have yet to attain tenure) than for the other two ranks. Administrative and university service functions (including serving on committees and governance workgroups) and service to academic disciplines (volunteering for committees of national and international academic societies, serving as editors of academic publications, and evaluating the work of scholars at other institutions) occupy progressively greater proportions of the workweek as faculty progress to the full professor level.

### Estimated Time Allocated to Various Duties – Ithaca Campus Faculty

(November 2005 response to a review of 2004-05 activity)



## CREATING CORNELL'S FACULTY

The selection of high quality faculty was among the initial focuses of Cornell's trustees and a major concern of Andrew D. White, the university's first president, who conceived of a dichotomous faculty made up of resident and nonresident professors. As recounted by Carl Becker, White thought that these faculty

...should naturally be the best obtainable, since the quality of a university depended fundamentally on the quality of its faculty. Unfortunately, the best were not to be had on permanent tenure at any price. "To take Agassiz permanently from Cambridge," the report said, "we must outbid the Emperor of the French, who has recently offered the most tempting prizes in vain." This being the case, Mr. White's happy idea was to secure as permanent, or "resident," professors the most promising young men to be had—at salaries ranging from \$1,000 to \$2,500—and trust them to achieve distinction; but also to invite men who were already distinguished, such as Agassiz or James Russell Lowell, to give courses of lectures for a term or a year as temporary or "non-resident" professors. This would enable students, faculty, and the citizens of Ithaca to hear many of the most famous scholars in the country, to their own great advantage and to the enhanced prestige of the university.

Cornell's first faculty members—Evan W. Evans, appointed to the chair of mathematics, and William C. Russell, appointed to the chair of modern languages and made an adjunct professor of history—were elected in February of 1867. As Becker noted:

Nothing engaged Mr. White more in these days, or was thought by him to be of so much importance, as the selection of the first faculty. "Better a splendid and complete faculty in a barn," he maintained, "than an insufficient faculty in a palace."

The process of identifying and signing on faculty took longer than White had anticipated, so much so that the university was forced to have its New York State charter amended to allow it to delay opening from 1867 to 1868. White used this extension to solidify his faculty selections. By the spring of 1868 he had ten resident faculty appointed and was working on a short list of distinguished visiting faculty. As Morris Bishop observed, the latter group included

...an astounding slate of nonresident professors: Louis Agassiz in natural history; James Hall, State Geologist and famous paleontologist; James Russell Lowell in English literature; George William Curtis in recent literature; Governor Fred Holbrook of Vermont in agriculture; Theodore W. Dwight of Columbia in constitutional law.

As the reports of the new university and its sensational faculty appeared in the press, they were greeted with wonderment, approbation, and animosity.

On a trip to Europe, in March 1868, White landed two of his biggest "academic fish" in the persons of James Law, a professor in the Veterinary College of Edinburgh, and Goldwin Smith, who had just resigned his position as the Regius Professor of History at Oxford. Law would pioneer veterinary science in America and found Cornell's College of Veterinary Medicine. Bishop described Goldwin Smith as the "...most brilliant of the nonresident professors."

Tall, slim, well-groomed, he reminded one girl of a silk umbrella. His lectures were models of acumen, wit, and pungent phrasing. To his rough-hewn colleagues, some of them graduates of forlorn colleges set in campuses of mud and tree stumps, he stood as an exemplar of ripe Eton-Oxford classical culture. ...Goldwin Smith was a singularly genuine person, devoid of affectation; he recognized the merits of his companions, admired and liked them. He wrote to Charles Eliot Norton: "My high opinion of our staff of Professors is confirmed. It does the highest credit to White's judgment in selecting it. I do not think I ever had to do with a set of men whose character and ability I esteemed more highly. The only question is whether they can be held together."

By the time Cornell opened in October of 1868, the institution had secured a teaching staff of 21 resident faculty (excluding Andrew D. White as president), five nonresident professors, and five instructors. They were organized into nine colleges or special faculties, with several professors belonging to more than one college and the president, by institutional bylaw, a member of all. Colleges then were not administrative units in the current sense of the term; they did not manage personnel, financial, and facility resources as modern colleges at Cornell are charged to do. Instead, a college at the university's founding delineated a field of study, and was therefore a vehicle for presenting students with an academic organization that related the faculty to the courses being offered and the degrees or certifications to be awarded.

### The Faculty – A Sampler

Over the 142 years of its existence, Cornell has employed a large cadre of distinguished faculty, whose eminence in their respective fields is remarkable. The university has also enjoyed its share of interesting and unique personalities, who from its inception defined the institution as a brash academic gadfly and helped



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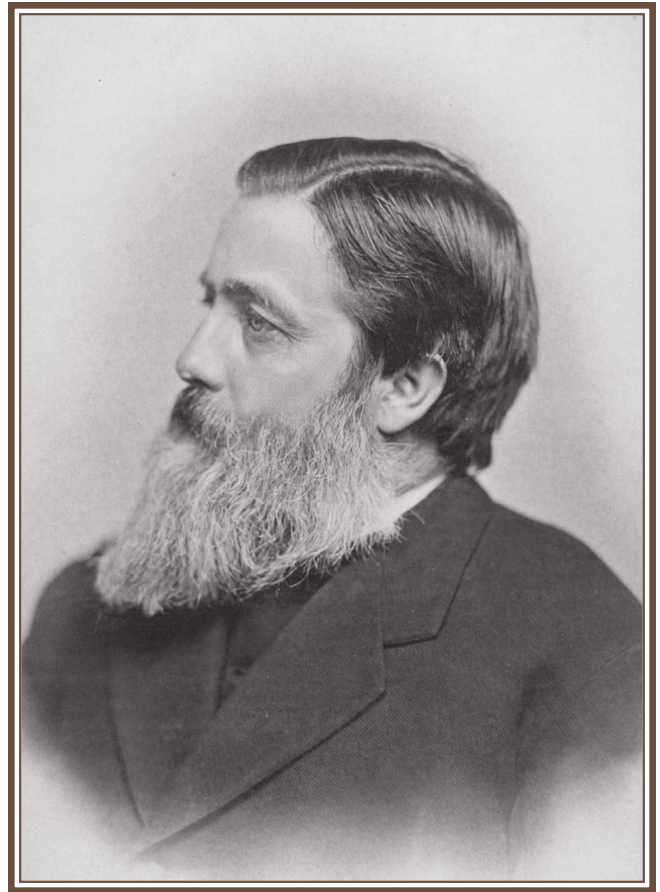
frame the university's character in ways that resonate with the current generation. Today, Cornell employs over 1,600 resident faculty on the Ithaca campus, whose expertise covers the gamut of academic disciplines and subject areas. Almost all faculty teach, and most provide undergraduate as well as graduate and professional instruction. These brief biographies serve to illustrate some of the features that frequently identify Cornell faculty as leaders and iconoclasts.

- *Daniel Willard Fiske* was not only a professor but served as the university's librarian and director of the University Press. Bishop described Fiske as "...a rolling stone who had gathered considerable moss, [who was] captured by diverse intellectual enthusiasms." Fiske was a linguist, conversant in languages of Northern Europe and the Middle East. He was also a journalist, and acted as an unofficial director of public relations.

One of his greatest contributions to the university was his relentless promotion of the institution's library. According to Bishop, "In those days a college library was likely to be a sorry accumulation, open an hour or two a week for the withdrawal and return of wholesome reading matter." Fiske argued that Cornell's should be a reference library containing a large collection of source materials, available to students and scholars alike, and open for as many hours a day as was feasible (an unheard of nine hours a day at the time). He viewed a library as an academic laboratory. To that end he obtained entire collections from the likes of Goldwin Smith, Jared Sparks, Charles Anthon, and Franz Bopp. He also made a number of outstanding literary bequests of his own, including several thousand volumes that became the nucleus of the Fiske Icelandic Collection, which is now the largest repository of works on Iceland and on Nordic medieval studies in North America.

- *James Law* was born in Scotland and came to America at the behest of Andrew D. White, joining Cornell in 1868 as one of its original faculty members. Bishop described these events:

In March 1868 White went abroad, to visit model institutions, to buy books and equipment, to collect professors. ...According to an oft-repeated anecdote, told in *White's Autobiography*, Ezra Cornell saw White off in New York, and as the ship drew away from the pier he cupped his hands and shouted across the gap: "Don't forget the horse-doctor!" ...[White] found the



Daniel Willard Fiske – 1880

horse doctor...James Law, educated in British and French institutions, professor in the Veterinary College of Edinburgh, a true scientist, a man of force and vigor. Dr. Law was to be one of the great pioneers of American veterinary science, and the efficient first cause of Cornell's Veterinary College.

Philip Teigen has described that Law was an early proponent of the concept that many animal diseases were caused by microorganisms, "not noxious fumes, changes in the weather, or poor ventilation" as was the view of most veterinarians in Britain of the time. Law introduced a scientific approach to veterinary medicine and was characterized as "an inspiring and thorough teacher." According to Teigen, "Law provided instruction in veterinary anatomy, physiology, hygiene, dietetics, breeding, agronomy as it affected the quality of animal fodder, and animal diseases."

Initially, Professor Law was appointed to the College of Agriculture (veterinary science was offered as one of the seven courses available in the

college). For 28 years, Professor Law lobbied New York State legislators to provide proper funding for a college of veterinary medicine at Cornell, which he envisioned as separate from agriculture. Law succeeded in achieving his goal by unleashing what has been called “a gauntlet of letters, visits, speeches, and editorials” that argued the case. The state legislature responded by appropriating \$50,000 in 1894 and \$100,000 in 1895 (a total of about \$8.6 million currently) to house and equip the New York State Veterinary College. In 1896, the state began an annual appropriation of \$25,000 for its operation.

- *William Arnold Anthony* created Cornell’s Department of Physics. Anthony was trained at Yale, graduating in 1856. He had been lured to Cornell from Iowa State University. Bishop described him as a “man of great initiative and inventiveness.” Waterman Hewett related the immediate and intense effect that Anthony had on Cornell:

With the advent of Professor Anthony the development of the department of physics, which up to that time had neither had quarters nor equipment, began. The impression made by him upon his classes was immediate and profound. Upon his first appearance in the lecture room newly assigned to physics, in the south wing of the then just completed McGraw Hall, he was recognized as a master. His ability as a lecturer and his extraordinary skill as an experimenter commanded the admiration of his classes, and before he had been on his feet ten minutes in the delivery of his first lecture he had gained a hold upon the student-body which increased as time went on, and which continued to grow throughout his long career as head of the department.

With the aid of a Cornell student, George Moler, Anthony built the first American Gramme dynamo for direct current. As Bishop noted,

It was constructed from a brief magazine description of Gramme’s machine and was powered by a five-horse-power gas engine, itself an amazing novelty. Electricity was delivered through underground wrought-iron pipes to two campus arc lights, the wonder of the countryside and indeed of the engineering world. This was the first underground distributing system for electrical energy, and the first outdoor electric-lighting system in the country. The dynamo, shown at several world’s fairs, was in active service at Rockefeller Hall at least till 1930, but has now become emeritus, performing only at high engineering festivals.

In 1875, Professor Anthony’s two arc lights were placed in the towers of McGraw Hall and Sage Chapel, and, according to Kermit Parsons, “...the intense light of these arc lights was visible for miles around Ithaca.”<sup>3</sup>

The university’s faculty has grown in size and diversity from its modest beginning of 26 professors. The faculty of 1868-69 was exclusively white and male, as was almost universally the case of all colleges and universities of that era. Over time, Cornell took its first timid steps in admitting women to the faculty ranks. Among those brave pioneers were several women of unusual talent, courage, and determination.

- *Anna Botsford Comstock*, who, among her many accomplishments, could claim to be Cornell’s first



William Arnold Anthony

<sup>3</sup>The original Sage Chapel design included a tower located at the intersection of the south transept and the nave. This feature was removed during an 1898 expansion.

woman faculty member to hold the title of professor, albeit briefly. Anna enrolled as a student at Cornell in 1874, but left after two years. She eventually reenrolled and earned a Bachelor of Science degree in natural history in 1885. Anna worked as an insect illustrator for her husband, John Henry Comstock. Bishop described the events of her short-lived faculty appointment:

Miss Louise S. Brownell, Bryn Mawr A.B. and Ph.D., was named warden of Sage College and lecturer in English literature in 1897. She was our first woman teacher, or at least the first to conduct scheduled classroom courses. Her success was such that in 1899 the Executive Committee proposed her appointment as assistant professor. The proposal was questioned at the full Board meeting in June, and action deferred till the fall meeting. In September Miss Brownell withdrew her name, and in the following spring she resigned her posts. ...Meanwhile the President [Schurman] made another effort to appoint a woman professor. Anna Botsford Comstock '85, wife of Professor John Henry Comstock, was named assistant professor of nature study in the Summer School, on 8 November 1898. The trustee opposition to her title was so great that when the summer was over Mrs. Comstock was reappointed as lecturer.



Anna Botsford Comstock

Anna Comstock was a self-taught illustrator who earned awards for her art, which appeared in national and international displays. The *Encyclopædia Britannica* lists her many accomplishments:

...in 1888 she was one of the first four women admitted to Sigma Xi, a national honour society for the sciences. ... Comstock made engravings for the more than 600 plates in her husband's *Manual for the Study of Insects* (1895) and for *Insect Life* (1897) and *How to Know the Butterflies* (1904), both of which she co-authored. Her engravings were also widely exhibited and won several prizes.

It was Comstock who attracted Martha Van Rensselaer to come to Cornell to start an assistance program for women farmers. In 1923, Comstock, Van Rensselaer, and M. Carey Thomas (another Cornell graduate) were nominated by the National League of Women Voters as three of twelve living American women who "have contributed most in their respective fields for the betterment of the world."

- *Martha Van Rensselaer*, along with *Flora Rose*, became the first women appointed as full professors at Cornell. The involvement of her mother in the suffrage and temperance movements convinced young Van Rensselaer that women could effect change in American life. Van Rensselaer held a variety of teaching positions before she was elected school commissioner of Cattaraugus County, New York, a position usually held by men. In this role, she was introduced to Cornell's small agricultural extension program, designed to educate farmers in the latest scientific advances. While she supported the program's aims, Van Rensselaer recognized that there was no equivalent instruction for the farm wife. In 1900, Liberty Hyde Bailey invited Van Rensselaer to organize an extension program for the state's rural women, and she became an extension assistant at Cornell. Under her leadership, the fledgling extension program blossomed. She believed that only by adopting new scientific strategies could women ease the burdens of daily tasks involved in farm life (which one woman described as "men, men, men, and mud, mud, mud.") In less than five years, the program enrolled more than 20,000 women members across New York State.

The success of the extension program led Bailey to create a Department of Home Economics, and he



Department of Home Economics – 1914 (Flora Rose and Martha Van Rensselaer are seated in the center)

appointed Van Rensselaer and Flora Rose as lecturers. Van Rensselaer took her A.B. from Cornell in 1909, at the age of 44, and she and Ms. Rose were elected as professors in 1911 (overcoming much opposition by other faculty).<sup>4</sup> The department evolved eventually into a separate College of Home Economics (later Human Ecology), with Rose and Van Rensselaer as “co-directors.”<sup>5</sup>

Van Rensselaer was regarded as a leading authority on issues affecting women and families, and she used mass media to disseminate her views. In 1919, with Flora Rose and Helen Canon, she cowrote *A Manual of Home Making*, a widely read text on home management. During World War I, she directed the Home Conservation Division of the U.S. Food Administration, and in the early

1930’s she served on various presidential committees, helping to set the national agenda for youth health, social policy, and education.

- *Carl Lotus Becker* was a historian who was well known for his exploration of early American

<sup>4</sup>Morris Bishop described the process: “After long and acrimonious argument, the faculty voted (18 October 1911) that ‘while not favoring in general the appointment of women to professorships, it would interpose no objection to their appointment in the Department of Home Economics.’”

<sup>5</sup>Bishop noted that Van Rensselaer and Rose, “...made one of those extraordinary teams which occasionally occur in nature. They worked together all their lives as ‘coheads’ or codirectors,’ with never a sign of difference or jealousy. Mrs. Albert W. Smith called it ‘the only successful double-headed administration in the academic world.’”



Carl Lotus Becker – 1930's

intellectual history. He came to Cornell in 1917 to teach history. In 1922, he was named the John Stambaugh Professor of History, continuing in his faculty role until 1941, when he retired and became the university historian.

Becker helped define a critical junction in historical writing: the death of the progressive view of history (i.e., that there was a natural progression of history and humankind's place in it) and the emergence of a stark pragmatism sometimes referred to as "historical relativism." Becker's writing—which is remembered for its clarity and forcefulness—often challenged the orthodox assumptions, especially the superiority of a scientific approach to historical research. In his doctoral dissertation he argued that the American Revolution was less a war of independence from England than it was a battle over domestic equality between the

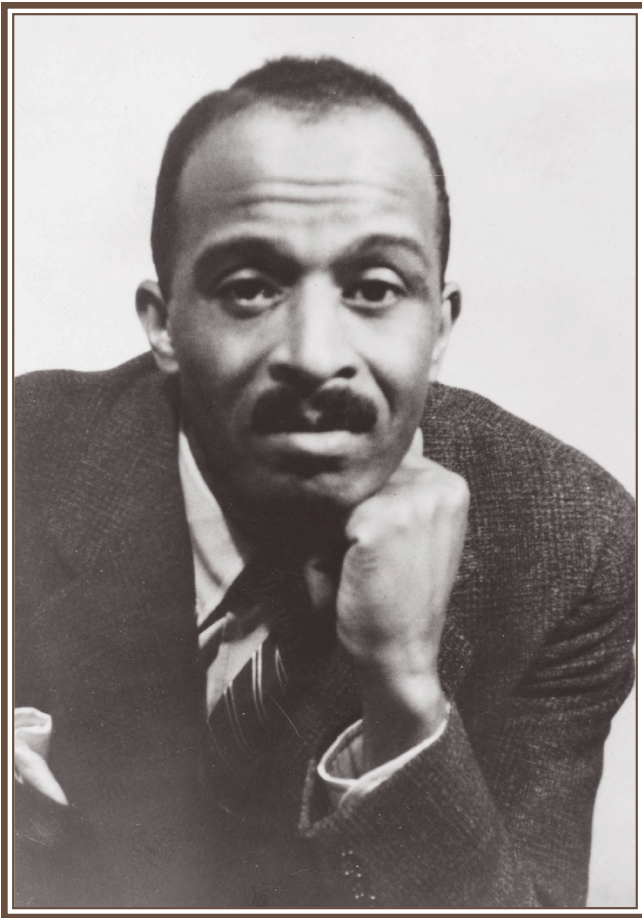
lower and elite classes. In his 1931 presidential address to the American Historical Association (later expanded and published as a book entitled *Everyman His Own Historian*), Becker argued that the representation of a historical fact is really a mental image that has been created by the historian's own experience and influenced greatly by the social context in which that person exists. In his much-heralded book entitled *The Heavenly City of the Eighteenth-Century Philosophers*, Becker demonstrated that the eighteenth century's "Age of Reason" was anything but enlightened. He showed that the great philosophers of that age were still living in a medieval world, and that they had "demolished the Heavenly City of St. Augustine only to rebuild it with more up-to-date materials."

A pragmatic but very moral person, Becker is credited with describing the soul of Cornell in a eulogy for his mentor, George Lincoln Burr: "If there be any intangible possession that distinguished this university, it is the tradition of freedom united with responsibility—freedom to do what one chooses, responsibility for what it is that one chooses to do."

- *Alice Hanson Cook* was one of the first scholars to explore issues related to working women, such as pay equality, comparable worth, and maternity leave. She was deeply interested in the various ways that public policy does or does not support women and mothers at a time when they were entering the workforce in record numbers. She also had a scholarly interest in the German system of adult and labor education.

Cook's early career was as a social worker. She later worked in various capacities for several labor unions, and had a brief stint after World War II in the adult education section of the U.S. Office of Cultural Affairs in Frankfurt-am-Main, Germany. She came to Cornell in 1952 as a project director for a field study project on increasing labor participation in community affairs. In 1954, Cook was named to the faculty in the School of Industrial and Labor Relations. She authored numerous books and articles addressing the issues facing working women in the United States and abroad.

Lois Gray, Francine Herman, and Jennie Farley described Cook as a teacher:



Jay Saunders Redding

...Alice was both devoted and demanding. Her lectures were a pleasure to listen to, and easy to take notes from; each sentence was complete, it nested where it belonged in a paragraph, which in turn supported a section of her presentation. Not surprisingly, she graded student papers on both form and substance.

Cook was admired for her intellectual curiosity, accuracy, and fairness. She served as Cornell's first ombudsman. An ardent feminist, Cook took up the fight for women's rights on every front. At Cornell she founded a group that would later become the Advisory Committee on the Status of Women at Cornell. Her autobiography, *A Lifetime of Labor*, remains a testament to her devotion to her field and her accomplishments.

- Jay Saunders Redding, with Vance A. Christian and Thomas Sowell, was one of Cornell's first African-American faculty members. Redding, who at Cornell was the Ernest I. White Professor of American Studies and Humane Letters, had a long aca-

ademic career prior to coming to this institution. Trained at Brown University, he served on the faculties of Morehouse College in Atlanta; Louisville Municipal College in Louisville, Kentucky; Southern University in Baton Rouge; Elizabeth City State Teachers' College in North Carolina; the Hampton Institute in Hampton, Virginia; Brown University (where he became that institution's first African-American professor); Duke University; and George Washington University. According to Kimberly Welch, Redding's successful publications were a key to his success and remain his legacy.

The publication of *To Make a Poet Black* enabled him in 1939 to earn a fellowship that was funded by the Rockefeller Foundation. Redding used this fellowship to travel throughout the American South to prepare his partly autobiographical work, *No Day of Triumph*, written in 1942. *No Day of Triumph* chronicled the daily lives and aspirations of working-class African-American southerners and became a critical success. In this book Redding observed that his life affirmed the importance of integrity, courage, freedom, and hope that African Americans traditionally cherished. In *No Day of Triumph* he wrote that "I set out in nearly hopeless desperation to find out, both as a Negro and as an American, certain values and validities that would hold for me as a man...to find among my people those validities that proclaimed them and me as men...the highest common denominator of mankind."

Redding's scholarly work transcended the academy. He lectured internationally, traveling to India and West Africa; served as the director of research and publication at the National Endowment for the Humanities; and worked with other intellectuals to confront racism in American Society, helping craft strategies to increase interracial cooperation. As summarized by Welch, Redding received numerous tributes upon his death:

...the 4 March 1988 obituary in *The Ithaca Journal* described him as the dean of African-American scholars whose works influenced younger African-American intellectuals, such as literary critic and director of Harvard University's African American Studies Henry Louis Gates. *The New York Times* 5 March 1988 notice of Redding's death recalled that he was regarded as the first African American to teach at an Ivy League institution. And in an obituary in the 10 March 1988 edition of the *Cornell Chronicle*, Cornell University president Frank H. T. Rhodes commented, "J. Saunders Redding represented the essence of human dignity who often stood alone between the two worlds of white and black, contributing to an understanding of the human condition that transcends race and culture."

- *Hans Albrecht Bethe* was a theoretical physicist who helped transform classical physics into modern, quantum physics. Referred to as “a titan of physics and conscience of science” and “the last of the giants of the golden age of 20th-century physics,” Bethe was honored with the Nobel Prize for Physics in 1967. He was known for his ability to develop highly mathematical theories to a point that their numerical results could be compared with experimental data. Bethe worked on two of the great puzzles of the 20th Century—what powers the stars, including the sun, and how to make an atomic bomb. Bethe’s work on the Manhattan Project during World War II, which led to the use of such destructive devices in Hiroshima and Nagasaki, generated an intense and lasting feeling of social responsibility in Bethe and other Los Alamos physicists. Bethe translated his growing unrest in the potential “dark side” of nuclear energy



Hans Albrecht Bethe

into a lifelong effort to increase public awareness on the threat of nuclear proliferation.

Bethe, who was equally admired for his integrity, humility, and concern for humanity, was nonetheless a scientist of the first order. He once observed that “The intellectual achievements of pure research are one of the things that make life worth living.” He combined a joy of discovery with an indomitable approach to work. “I can do that” was his famously optimistic rejoinder to the seemingly impossible task or insurmountable problem. Bethe also was a deeply committed, even sensitive, teacher, and from 1945 until his retirement from active teaching in 1975 he trained and inspired a large number of graduate students. One of them, Freeman Dyson of the Institute for Advanced Study at Princeton, once noted that Bethe would often continue classes over lunch “and that’s where most of the teaching was really done.” His presence at Cornell was a magnet that attracted a world-class faculty to the university’s physics department. Bethe was a prolific author, publishing papers in every decade from the 1920’s through the 2000’s. “If you know his work,” said John Bahcall of the Institute for Advanced Study, “you might be inclined to think he is really several people, all of whom are engaged in a conspiracy to sign their work with the same name.”

Cornell continues to benefit from notable faculty—resident and visiting. In 2005-06, the Ithaca campus faculty included 3 Nobel laureates, a Crafoord Prize winner, 2 Turing Award winners, a Fields Medal winner, a Legion of Honor recipient, a World Food Prize winner, an Andrei Sakharov Prize winner, 3 National Medal of Science winners, 2 Wolf Prize winners, 5 MacArthur award winners, 4 Pulitzer Prize winners, 2 Eminent Ecologist Award recipients, a Carter G. Woodson Scholars Medallion recipient, 4 Presidential Early Career Award winners, 20 National Science Foundation CAREER grant holders, a recipient of the National Academy of Sciences Award for Initiatives in Research, a recipient of the American Mathematical Society’s Steele Prize for Lifetime Achievement, a recipient of the Heineman Prize for Mathematical Physics, 3 Packard Foundation grant holders, a Keck Distinguished Young Scholar, 2 Beckman Foundation Young Investigator grant holders, and 2 NYSTAR early career award winners.

## CHANGING DEMOGRAPHICS

There have been significant changes in Cornell’s professorial population over the past 142 years, shifts in:

- a) the number of faculty and the ratio of students to faculty,
- b) the gender and racial/ethnic makeup of faculty,
- c) the proportion of various professorial ranks and the system of tenure,
- d) college and major disciplinary groupings,
- e) the level of educational attainment,
- f) the distribution of faculty by age, and
- g) the length of faculty employment at Cornell.

Some of these transformations reflected larger societal actions, such as the passage of laws banning various types of discrimination and eliminating most forms of mandatory retirement, while other shifts were Cornell-specific (e.g., responses to changes, positive and negative, in New York State funding levels and state-sponsored early retirement programs). While change comes person-by-person, aggregate shifts in professorial demographics influence the entire univer-

sity. For example, minority students often report that they feel an institution is more inclusive and welcoming when they encounter minority faculty members. Likewise, women students in fields traditionally dominated by men, such as engineering, are inspired to succeed by the presence of women faculty in those disciplines. Also, faculty turnover creates a continuous inflow of fresh faculty insight—stimulating discourse, generating innovative academic perspectives, and opening new lines of scholarly inquiry.

### Number of Faculty at Cornell

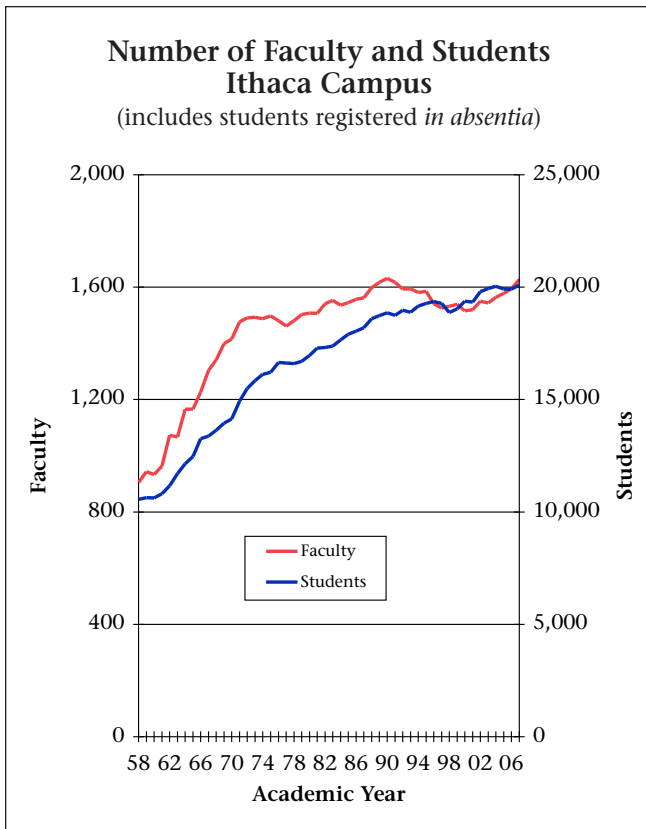
As mentioned above, Cornell’s instructional staff consisted of 21 resident faculty and five instructors when the institution opened in October 1868, having admitting 412 students in that first trimester. (See table below.) Harvard, by comparison, had 23 faculty teaching 529 students in the same year. In addition, Cornell had five nonresident professors who visited the campus periodically to provide students with exposure to world-class academic talent. Since then, the number of faculty and students has grown significant-

Instructional Staff and Student Enrollment (includes students registered <i>in-absentia</i> at the Ithaca campus)							U.S. Higher Education	
Cornell University – Ithaca Campus						Student to Total Instructional Staff Ratio	Student to Total Instructional Staff Ratio	
Academic Year	Resident Faculty	Other Instructional Staff *	Total Instructional Staff	All Students	Student to Faculty Ratio			Academic Year
1868-69	21	5	26	412	19.6:1	15.8:1	1869-70	9.4:1
1876-77	38	10	48	561	14.8:1	11.7:1	1879-80	10.1:1
1886-87	41	37	78	829	20.2:1	10.6:1	1889-90	9.9:1
1896-97	80	53	133	1,808	22.6:1	13.6:1	1899-00	10.0:1
1906-07	131	111	242	3,175	24.2:1	13.1:1	1909-10	9.7:1
1916-17	253	191	444	5,344	21.1:1	12.0:1	1919-20	12.3:1
1926-27	402	221	623	5,474	13.6:1	8.8:1	1929-30	13.4:1
1936-37	475	199	674	6,042	12.7:1	9.0:1	1939-40	10.2:1
1946-47	732	145	877	10,005	13.7:1	11.4:1	1949-50	10.8:1
1956-57	956	104	1,060	10,502	11.0:1	9.9:1	1959-60	9.6:1
1966-67	1,304	129	1,433	13,373	10.3:1	9.3:1	1969-70	17.8:1
1976-77	1,462	129	1,591	16,624	11.4:1	10.4:1	1979-80	17.1:1
1986-87	1,562	251	1,813	18,189	11.6:1	10.0:1	1989-90	16.4:1
1996-97	1,526	306	1,832	19,268	12.6:1	10.5:1	1999-00	14.4:1
2006-07	1,627	336	1,963	20,089	12.3:1	10.2:1	2003-04	14.4:1

\* *Other instructional staff* includes instructors and lecturers but excludes graduate teaching assistants and staff with instructor titles at the Geneva Experiment Station.



A FOCUS ON FACULTY



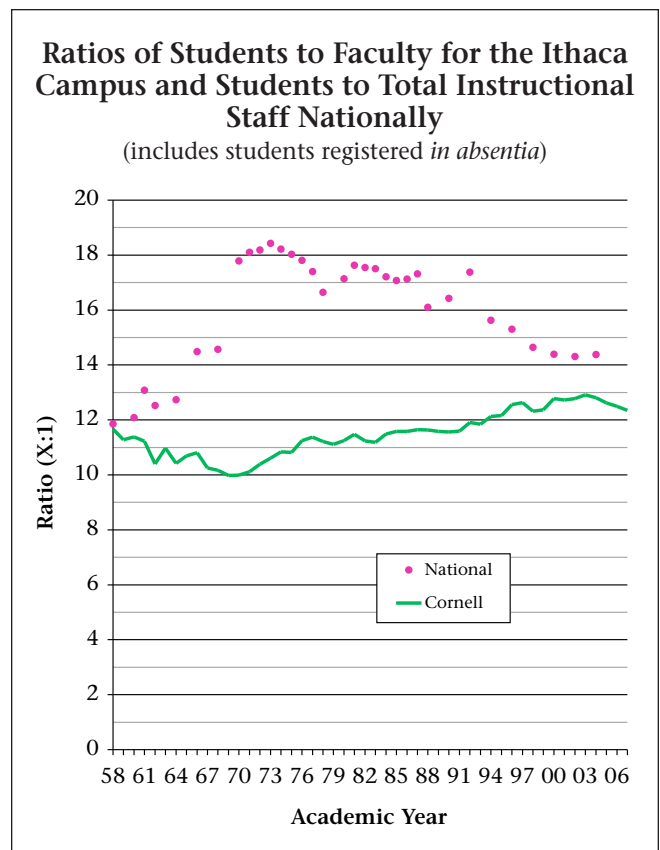
ly, reaching 1,627 and 20,089 respectively in 2006-07.<sup>6</sup> The university relied more heavily on non-professional instructors and lecturers in its formative years than it does currently, leading to widely divergent student-to-faculty and student-to-total-instructional-staff ratios by World War I. Professorial faculty represented only 57 percent of the instructional staff at the Ithaca campus in 1916-17 whereas they represent 83 percent today. (The 336 other instructional staff in 2006-07 include 15 instructors and 329 lecturers.) Average student-to-total-instructional-staff ratios for all U.S. degree granting institutions of higher education can be seen in the table on page 16 as well. Until the 1960's, the nation enjoyed a relatively low ratio of students to teaching staff. Then a dramatic increase occurred as higher education enrollments grew without corresponding additions in faculty numbers, especially at public institutions. Cornell, however, has maintained a relatively stable student-to-faculty ratio since the 1920's, and its overall ratio of students to teaching staff is currently below the national average.

<sup>6</sup>The current number of Ithaca campus faculty is just below its all-time high of 1,631, which occurred in 1989-90.

Annual changes in the number of faculty and students and the student-to-faculty ratio for the Ithaca campus from 1957-58 to the current year can be seen in the graphs at left and below. Faculty numbers increased rapidly in the 1960's, driven partially by growth in New York State funding for the contract colleges and expansion across Cornell in response to enrollment changes. Recent efforts to maintain constant undergraduate enrollments and to increase slightly the number of faculty have lowered the student-to-faculty ratio to 12.3:1 for the Ithaca campus.

Derek Bok wrote of his inquiry in 1971, upon assuming the presidency of Harvard, into the question of the optimal size of a university—how many faculty? How many students? In reviewing published reports on the subject, Bok noted that:

...[all of the studies] sought to determine how much room a university has to maneuver between the Scylla of unrealized economies of scale and the Charybdis of excessive size. The usual answer was that the university needed at least five or six thousand students to provide a sufficient base for an adequate array of top-quality departments. Above fifteen thousand students, however, no further economies of scale seemed achievable. Institu-



tions that exceeded this limit would have little to show for it save bureaucracy, inefficiency, and a growing loss of personal attention.

In one study, the president of a college set out to discover how large his student body could be and still permit a typical undergraduate to walk across the main quadrangle after an 11:00 A.M. class with a better than even chance of meeting at least two personal acquaintances. The researchers attacked this question with an awesome barrage of statistical techniques and left me only slightly more skeptical than I was when I began by concluding that the proper size for the college was exactly the number of students already enrolled.

The “proper size” question for Cornell has been revisited periodically, and seems to remain perpetually unresolved. In his 1881 report to the trustees, Cornell Acting President William C. Russell apologized for the drop in enrollment that the university was then experiencing, offering four reasons for the departure of students: (a) Cornell’s nonsectarian foundation caused a suspicious public to view the institution as “irreligious,” (b) “Cornell was falling behind the other great Universities in her apparatus and libraries and collections”, (c) Russell’s view that the innovative nature of Cornell’s founding was now a passing fad, and (d) the relatively high cost of tuition.<sup>7</sup> In 1910, Cornell President Jacob Gould Schurman suggested that the university tighten its admissions requirements to throttle back on growth. The rapid expansion in the institution’s Ithaca campus enrollment from 2,174 in 1900 to 5,416 by 1920 led to many student complaints in that era that Cornell was growing too large and impersonal. The 1975 Report of the Trustee Ad Hoc Committee on Capital Financing made a prediction that Ithaca campus faculty growth would proceed at 0.5 percent per year through 1980 while enrollment would level off and hold at 16,500 by 1976-77. In 1978, Cornell Chancellor Dale Corson described financial difficulties that the university experienced in the mid-1970’s after a period of rapid growth, noting that, “If we needed new faculty the increasing student body guaranteed an opportunity to appoint new members.” In retrospect, the number of Ithaca campus faculty has grown at an average annual compound rate of 3 percent from 1868-69 to 2006-07 while the student population has increased at 2.9 percent. There has always been a strong correlation between faculty and student numbers, although changes in each population have precipitated reactive growth in the other. Currently, there is a shared sense that Cornell should

not increase the undergraduate student body beyond its current size (which at roughly 13,000 on-campus students requires a first-time freshman enrollment of a little over 3,000—the number that can reasonably be accommodated in North Campus housing). Graduate and professional enrollments are viewed as having more elasticity, with expansion being generally limited by resources and space. The recent growth in the size of the faculty has been a reaction to increases in professional student enrollments and targeted additions to expand expertise in certain strategic disciplines, including computing and information science, biomedical engineering, and the life sciences. These adjustments represent a fine-tuning of the faculty-size model based on an assumption that the appropriate number of professors is, to paraphrase Derek Bok, exactly the number of faculty already employed.

### Gender and Racial/Ethnic Makeup

While Cornell was the first major eastern institution of higher education to participate in the “coeducation” of women and men, males have comprised the clear majority of the institution’s faculty members since its inception. As described above, there were timid (and sometimes begrudging) steps to hire female professors beginning in the late 1890’s, and the creation of the College of Home Economics (later transformed into the College of Human Ecology) provided a significant foothold for women in an otherwise male realm. Not until 1947, however, did a woman attain an appointment as a professor in the College of Arts and Sciences.<sup>8</sup> Although the Civil Rights movement and the second wave of feminism in the middle and latter parts of the twentieth century were transformative eras in the occupational attainments of women and minorities, the immediate impact of these movements on the composition of the university faculty was more gradual. The first African-American faculty member at Cornell, Thomas Sowell, was appointed in 1965. Women represented just 7.6 percent of all faculty members in 1973-74 and minorities accounted for 3.3

<sup>7</sup>“It is a mistake to expect the large numbers of students to come here who used to come. Cornell was then a fashion, a furore. The fashion has passed. To-day Harvard leads. In a few years Harvard will be left behind by some University established on some new idea.” – *William C. Russell, 1881.*

<sup>8</sup>Martha E. Stahr, in the Department of Astronomy.

## A FOCUS ON FACULTY

percent in 1974-75.<sup>9</sup> Further, the College of Human Ecology, with its roots in the field of home economics, held a disproportionate share of those appointments to women in 1973-74—49 percent—even though its faculty accounted for only 6.2 percent of the overall number of Ithaca campus professors.

As the graph at right shows, change since the 1970's has been continuous, although the proportion of women and minority faculty has yet to reflect their representation in the general population. Currently, two-thirds of Ithaca campus faculty are white and male, down from 84 percent in 1982-83. Minorities still represent only 14 percent of the overall faculty population. (See table below.) The modest pace of change partly reflects the longevity of faculty careers. Without growth in the size of the faculty, new faculty hires occur only when existing positions are vacated.

### Professorial Rank and Tenure

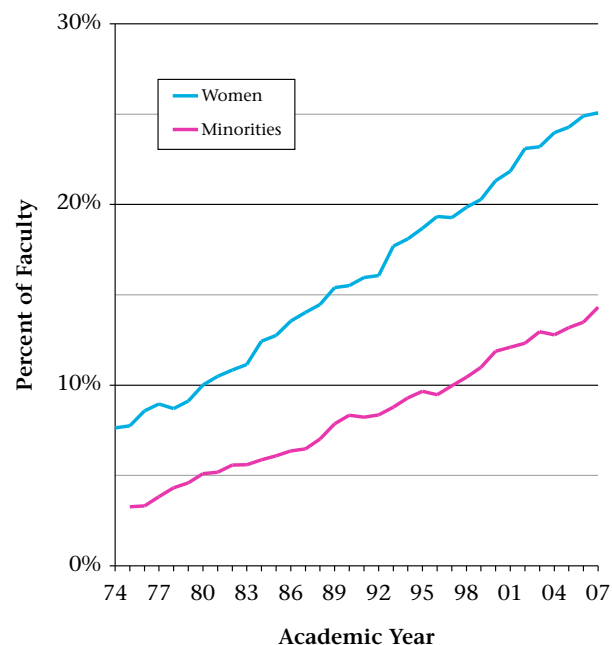
There are three main professorial titles: assistant, associate, and full professor. When Andrew D. White crafted his 1867 view of how Cornell should be organized, he conceived of only two such ranks: the professor or chair of a department and one or more assistants to help that chair. The assistant title was meant literally, and White foresaw a gradual growth in departments, and hence chairs and their assistants, over time:

As numbers [of students] increase, too, some departments will require assistants. In some departments one system must be pursued and the responsibility fixed on one man; it cannot therefore be divided. But when numbers are greatly increased, it will probably be necessary to appoint an assistant professor or instructor, who should be subject as regards their plan of instruction, to the head of the department. As any department develops also, it will be necessary to subdivide it, and increase the number of professorships in it. Thus, for

#### 2006-07 Racial/Ethnic Makeup of Faculty Ithaca Campus

	<u>Number</u>	<u>Percent of Total</u>
Asian	132	8.1%
Black	51	3.1%
Hispanic	41	2.5%
Native American	9	0.6%
White	<u>1,394</u>	<u>85.7%</u>
Total	1,627	100.0%

#### Percentage of Women and Minority Faculty Ithaca Campus



example, the department of Civil Engineering, would be separated into three or four new departments, each devoted to a special part of the work, and then must be added instructors in geometrical and topographical drawing, &c.

In White's mind there was little difference between an assistant professor and an instructor; both were there to help the chair carry out instructional duties. There was some expectation, however, that an assistant professor might demonstrate those qualities that would lead eventually to employment as a professor at Cornell or elsewhere in higher education.

The associate title has a more interesting and checked pedigree. As White's schema presupposed that there would be only one professor/chair per department of study, any addition to the slate of professor/chairs could be made only as increased enrollment warranted differentiation and specialization. White ran into an immediate problem, however, when he tendered to the trustees his first two faculty nominations in February 1867, proposing that one of the pair, William C. Russell, have a dual role. Professor

<sup>9</sup>Data on the gender and racial/ethnic makeup of faculty was not collected consistently on the Ithaca campus prior to 1973-74 and 1974-75 respectively.

Russell would be the chair of modern languages in his own right but had expertise and an interest in history. White's solution was to offer Russell a secondary appointment as an adjunct (soon thereafter called associate) professor of history. As Morris Bishop noted, this was the first use of the term "associate professor" in American higher education. Thus the associate title connoted an additional role for faculty who possessed expertise in more than one discipline. An associate professor—like a partner in a law firm—was a coequal of the professor/chair in a given department. While the associate title implied a peer-level relationship with the professor/chair, the institution began assigning the associate title to individuals who had no primary appointments as a professors/chairs in other departments (i.e., lacked the dual-role sense of Russell's appointment). The implicit pecking order created by the use of these three professorial levels was made evident when the trustees, in 1882, codified a list of approved academic job titles and included salary ranges for each faculty title:

- A. Resident Professors (with salaries of from \$2,000 to \$3,000).
- B. Associate Professors (with salaries of from \$1,500 to \$2,000).
- C. Assistant Professors (with salaries of from \$1,000 to \$1,500).

Cornell continued to use the associate professor title in these ways until 1896, when the trustees, acting upon the advice of President Jacob Gould Schurman, voted to abolish the title of associate professor, allowing it to expire in 1900.<sup>10</sup> They further directed that, "Persons holding the office at that time, if they continue in the service of the University, would become either Assistant Professors or Full Professors." There matters rested until 1939, when at the urging of Cornell's faculty, the trustees reactivated the dormant role of associate professor and began to clarify its relationship with the concept of tenure. Faculty tenure had recently become a national issue when The American Association of University Professors and the Association of American Colleges and Universities had issued a joint recommendation that all faculty appointments be made permanent after a probationary period of employment. Progress on the tenure topic

<sup>10</sup>Schurman called the rank of associate professor an "anomaly," bridging the "chasm" between the permanence of full professors, who had been granted tenure, and the inherently temporary nature of the assistant professor appointment, which while it might lead to full professor status, also might not. In his view, the associate title created an illusion of advancement and entitlement.

was interrupted by World War II, and it was not until 1948 that Cornell's trustees enacted legislation to formally guarantee tenure to associate and full professors. In granting these faculty rights the trustees noted that:

The University reserves the right to dismiss and discontinue the appointment of any member of its faculties on reasonable notice, and after giving such member an opportunity to be heard, for misconduct or failure to perform the duties required of the position he holds.

And as codified by the Dean of the Faculty:

The department, the chairperson, and the dean have the responsibility of weighing the different roles of each faculty member and evaluating the strengths and weaknesses of the candidates for tenure, taking into account the mission and needs of the department and the college. These include the interests of the unit and the university to promote racial, ethnic and gender diversity among the faculty. But regardless of how the department weighs the relevant factors in any particular case, no candidate may be granted tenure who does not meet the requirements for overall excellence.

Evidence of that excellence was once drawn almost exclusively from the quantity and quality of the tenure candidate's research and published scholarship, giving rise here and elsewhere to the catch phrase "publish or perish." The expectation that Cornell's faculty will be among the best scholars and researchers remains a linchpin of the tenure process, as it must for any research university. Over the past decade, there has been a growing emphasis as well on the crucial importance of excellence in teaching in the tenure review. In her March 2007 Academic State of the University Address, Cornell's Provost Bidy Martin remarked that she had,

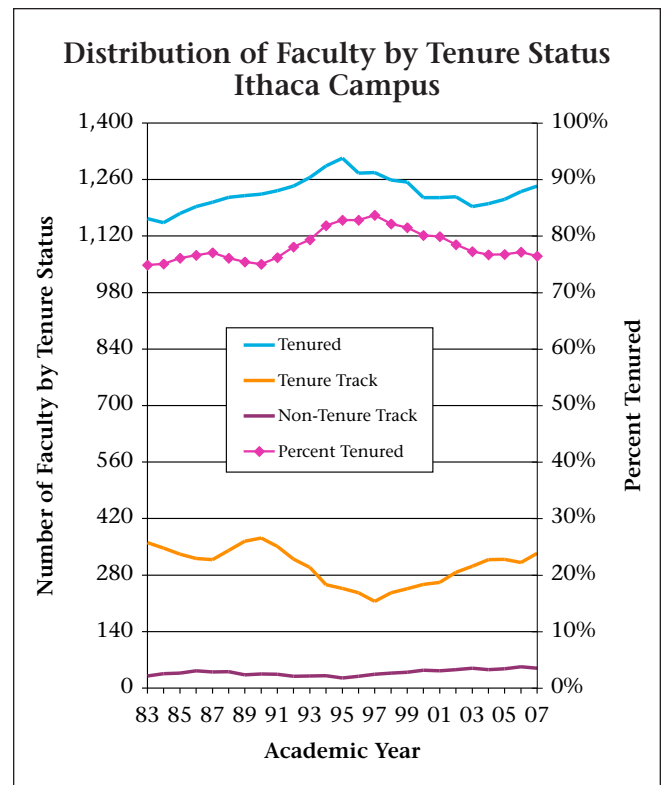
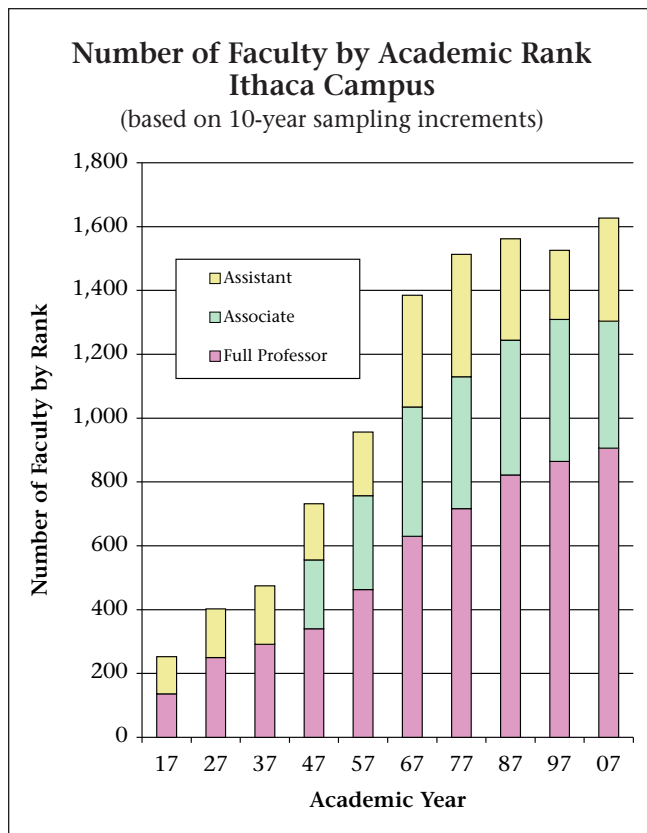
...discussed with the deans the possibility of making peer review of teaching a condition for tenure and promotion. I remain uncertain about whether that is the best approach to the goal I have articulated for us—that each department and program should build a culture of strong teaching that would include faculty discussion of curricular innovations, of pedagogy, and of what students are learning. Making peer review an expectation for tenure dossiers would seem to place the burden on junior faculty and turn the objective of building cultures into a culture merely of evaluation. I believe we need more discussion of these issues and will take responsibility for ensuring that those discussions occur.

At issue—to use Ernest Boyer's 1990 framework—is whether to make the review of the scholarship of teaching as rigorous (and as formal) in the tenuring process as the current review of the scholarship of discovery and integration.

## A FOCUS ON FACULTY

The effect of reintroducing the associate title can be seen in the graph below, which tracks the faculty by rank in ten-year samples and shows that a little over half of the assistant professor population was re-assigned in the 1940's to the associate title with tenure. (This change was followed by a surge in new faculty hires at the end of World War II.) The drop in the assistant professor population in the 1990's reflected the impact of the elimination of mandatory retirement discussed on page 23, among other factors. The decline in associate professors was largely an outcome of early retirement incentives offered to contract college faculty during a period of New York State budget cuts for those colleges. Over the past ten years, there has been an increase in the number of assistant professors in both the endowed Ithaca and contract colleges as resources have been redeployed to replenish faculty numbers in selected departments and programs in response to anticipated retirements.

Faculty rank and tenure status are highly related, as almost all associate and full professors have tenure and assistant professors do not. The degree with which an institution's faculty is tenured is basically determined by the ratio of those ranks. (See graph at right.)



## College and Disciplinary Groupings

As the number of faculty increased at Cornell, so too did the size and complexity of its academic structures. As described above, the university advertised itself as composed of nine colleges when it admitted its first students in 1868. In reality, there was just one college containing the entire faculty and nine separate courses of instruction. Cornell was a *university* in the sense of the *universe* of its course offerings, which ranged far beyond the typical classical fare of the day. With time and increases in both the student and faculty populations, these "colleges" coalesced into departments, some of which persist to the present day. Morris Bishop described the events that precipitated the creation of Cornell's colleges in the modern sense:

Until 1886-87 Cornell was ruled by a single faculty. In that year came the College of Law, with purposes and methods so particular that its professors met separately. From this precedent the professors in other fields argued that they were properly colleges with their own rights and privileges. The trustees therefore reformed the organization, and in 1896 decreed that Cornell University comprehends the Graduate Department, the Academic Department (or Department of Arts and Sciences), the College of Law, the College of Civil Engineering, the Sibley College of Mechanical Engineering and Mechanic

**2006-07 Distribution of Faculty by College  
Ithaca Campus**

	<u>Number</u>	<u>Percent of Total</u>
Agriculture & Life Sciences	385	23.7%
Architecture, Art & Planning	51	3.1%
Arts & Sciences	529	32.5%
Engineering	241	14.8%
Hotel Administration	41	2.5%
Human Ecology	90	5.5%
Industrial & Labor Relations	50	3.1%
Johnson School	55	3.4%
Law School	46	2.8%
Veterinary Medicine	133	8.2%
Centers/Programs	<u>6</u>	<u>0.4%</u>
Total	1,627	100.0%

Arts, the College of Architecture, and the College of Agriculture. “The New York State Veterinary College is administered by Cornell University, and its work is organically connected with that of the University.”

Since 1896, other schools and colleges have been added, spanning such diverse fields as business, education, forestry, medicine, and nursing. Some of these entities—such as the College of Forestry—have reverted to their departmental status or disappeared altogether; most have persisted. The current distribution of faculty by college is shown in the table above. Three colleges—Agriculture and Life Sciences, Arts and Sciences, and Engineering—currently employ 71 percent of all Ithaca campus professors. (In 1916-17, these three colleges represented 84 percent of all such faculty.)

**Educational Attainment**

As mentioned above, Cornell’s first two faculty members had master’s degrees. And while nine of the initial 26 faculty had doctorates, only two professors—Daniel Willard Fiske and George C. Caldwell—held Ph.D.s. (See table below.) Much has changed over the intervening decades, especially the gradual but almost universal dominance of the Ph.D. as a prerequisite to joining the faculty. By 1983-84, 86 percent of all faculty on the Ithaca campus held Ph.D. degrees. That number has since climbed to 90 percent, and the number of faculty possessing only bachelors or masters degrees continues to decline. The popularity of the Ph.D. in this respect springs from the fact that, as Chris Golde and George Walker have described, it is at its heart a research degree.

The doctorate should signal a high level of accomplishment in three facets of the discipline: generation, conservation, and transformation. A Ph.D. holder should be capable of *generating* new knowledge and defending knowledge claims against challenges and criticism, *conserving* the most important ideas and findings that are a legacy of past and current work, and *transforming* knowledge that has been generated and conserved by explaining and connecting it to ideas from other fields.

The Ph.D. has become congruent with the academic nature of a modern research university like Cornell—each defining the other.

**Faculty Age**

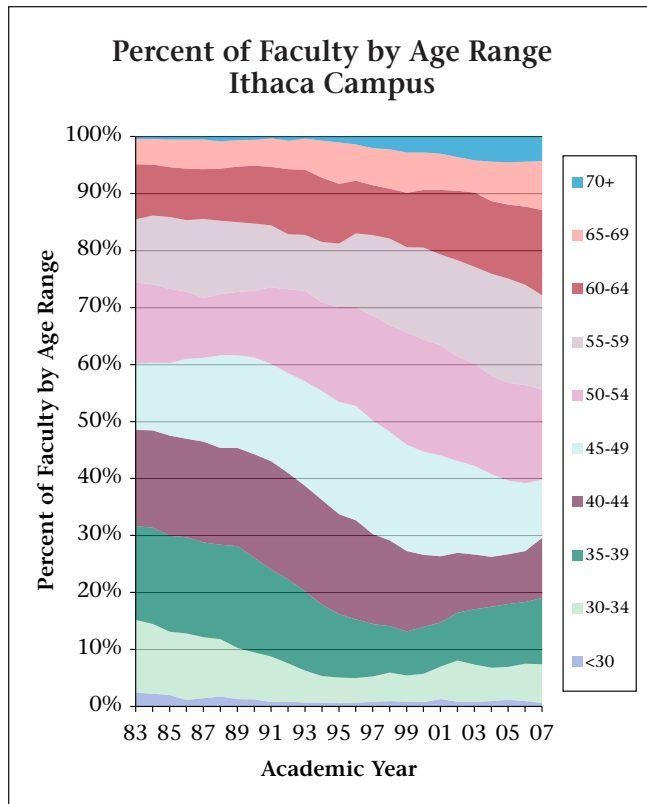
The distribution of faculty by age is greatly influenced by three factors: (a) mandatory retirement, (b) uni-

**Educational Attainment \* – Faculty – Ithaca Campus**

	1868-69		1983-84		2006-07	
	<u>Number</u>	<u>Percent of Total</u>	<u>Number</u>	<u>Percent of Total</u>	<u>Number</u>	<u>Percent of Total</u>
Ph.D.	2	7.7%	1,316	85.7%	1,461	89.8%
Other Doctoral	7	26.9%	35	2.3%	16	1.0%
First Professional	4	15.4%	69	4.5%	90	5.5%
Terminal Masters			22	1.4%	40	2.5%
Masters	9	34.6%	79	5.1%	15	0.9%
Bachelors	2	7.7%	11	0.7%	5	0.3%
None	<u>2</u>	<u>7.7%</u>	<u>4</u>	<u>0.3%</u>	<u>        </u>	<u>        </u>
Total	26	100.0%	1,536	100.0%	1,627	100.0%

\* Indicates the most advanced degree held by the faculty member among all degrees awarded.

## A FOCUS ON FACULTY



iversity hiring and tenuring practices, and (c) institutional policies that encourage or discourage voluntary retirement. The most profound of these has been the elimination of mandatory retirement.

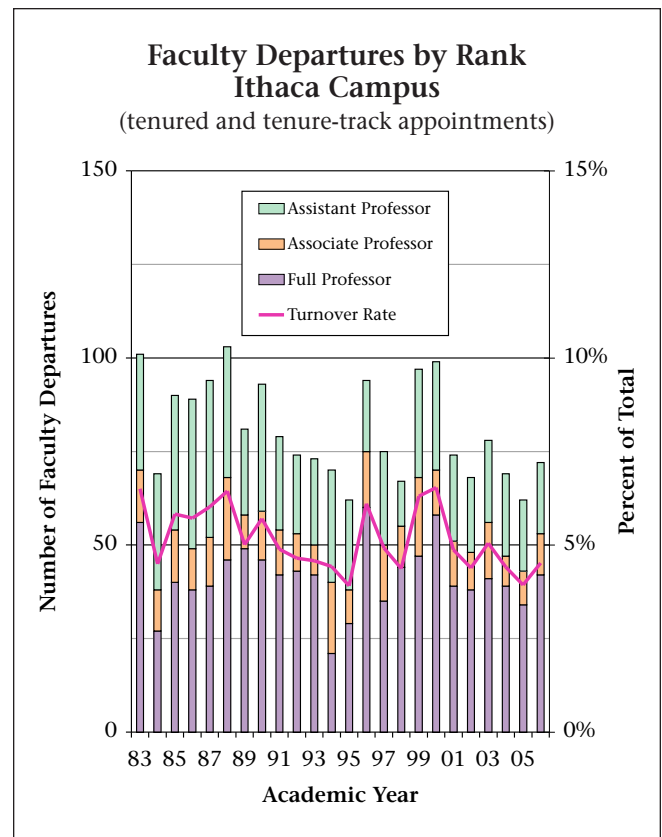
For many years, the normal age of retirement in the U.S. was set at 65, and employers were allowed to mandate retirement at this or other ages. Legal changes since have virtually eliminated mandatory retirement for most American workers (with the exception of a few job categories where ability to perform is demonstrably related to age). Most significantly, the Age Discrimination in Employment Act of 1967 (ADEA), generally prohibited the use of age as a basis for making hiring, firing, promotion, or compensation decisions, and generally eliminated mandatory retirement. A section of ADEA permitted postsecondary institutions to enforce mandatory retirement for faculty who reached the age of 70. This exemption was renewed in 1986 with a limitation that it would expire at the end of 1993. Since then, there has been no mandatory retirement provision for faculty.

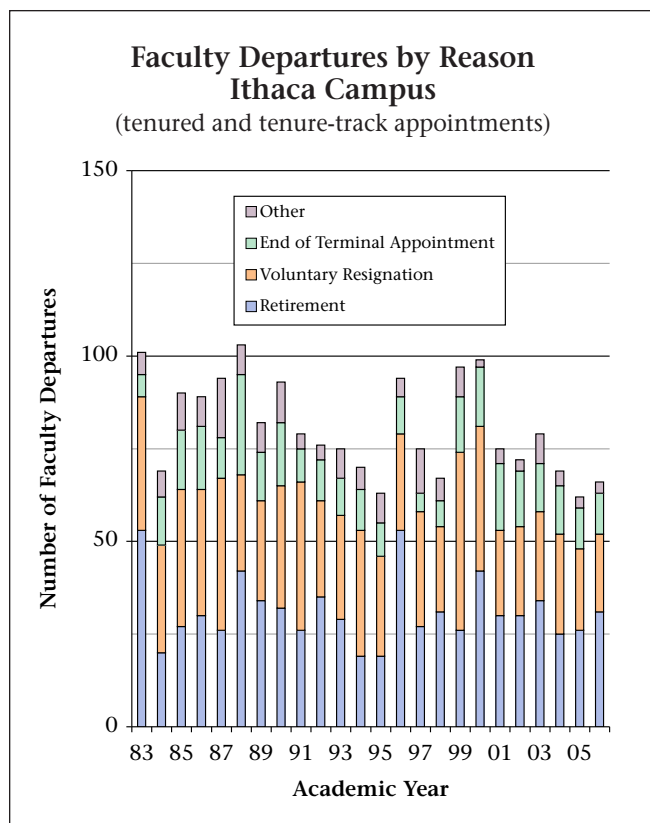
The effect of these legal changes can be observed in the age profile of the Ithaca campus faculty. (See graph above.) In 1982-83, 60 percent of Ithaca campus

faculty were under 50. Currently, less than 40 percent are, and the number of faculty 65 years of age or older has climbed from 4.8 percent to 12.3 percent. A factor in this change has been the increasing popularity of faculty entering into a phased retirement program, in which workloads are gradually reduced. Currently, 48 Ithaca campus faculty are on phased retirement. Overall, there has been a recent leveling off in the percent of faculty aged 70 and older, perhaps indicating that Cornell is arriving at a new equilibrium more reflective of individual, voluntary decisions to retire.

### Length of Employment at Cornell

An important aspect of tenured faculty employment at Cornell and elsewhere in higher education is the pattern of longevity at a single institution that is different from that experienced by most U.S. workers. Career persistence in a professorial appointment provides immense stability and continuity for both the faculty member and the institution. These benefits come at a price, however, as new members are sometimes at the forefront of academic advancement and disciplinary





evolution. A regular rate of faculty turnover, whether from retirements or voluntary departures, creates an essential inflow of fresh and essential talent. The graph at the bottom of page 23 shows the number of faculty departures by rank for both tenured and nontenured faculty at the Ithaca campus. Over the 24 years shown, an average of 81 professors, or 5.1 percent of each year's overall faculty population, left annually. The reasons for departure included retirement, voluntary resignation, and the end of terminal appointments, among other factors. (See graph above.) The attrition rate for assistant professors was highest, averaging 9.1 percent per year, and lowest for associate professors (at 3.1 percent). The departure rate for full professors was 4.8 percent, close to the overall mean. The institution averaged about 31 retirements of its Ithaca campus faculty annually over this period and another 30 voluntary resignations. The faculty who retired during this period had been in their tenure-track and tenured positions at Cornell an average of 29 years. (The total length of Cornell service was greater because some professors had earlier, nontenure-track appointments.) Two of the faculty who retired had been professors for over 51 years.

## Predicting Turnover

Until the demise of mandatory retirement mentioned above, it was relatively easy to estimate the retirement rate. However, faculty retirement patterns have since changed considerably. While many faculty continue to retire before age 70, and it is quite exceptional for faculty to work past the age of 80, only a minority of faculty retire upon reaching the milestone of their 70th year. In addition, potential changes in Social Security and health care policies and the investment performance of pension funds will also affect retirement decisions in coming decades. Finally, retirement incentive schemes seem to accelerate the retirements of those who are inclined in that direction, but fall considerably short of the effects of mandated retirement in inducing the disinclined to retire.

Given these limitations and caveats, Cornell's current faculty flow model predicts a continual rise in the average age of faculty, plateauing about ten years from now, with the number of professors aged 70 or greater peaking at about 95 individuals. The model also predicts a slight increase in newly hired tenured and tenure-track faculty, the total of which is expected to climb to 85 professors per year. Thus, about 600 professors, or 36 percent of the current faculty cohort, are expected to be replaced between now and 2015.

## FACULTY SUPPORT

In the broadest sense, faculty support takes two forms: direct compensation for salaries and benefits and assistance for the faculty member's academic program.

### Faculty Salaries

Faculty salaries have been the subject of numerous administrative and trustee analyses and reports. At issue are two concerns: (a) the range and absolute level of support (i.e., whether faculty can adequately support themselves and their families in a reasonable fashion in the local community) and (b) the relationship of Cornell's salaries with those of key competitors.

- In his 1867 organizational plan for the university, Andrew D. White proposed a faculty salary scale of \$1,750 to \$2,250 for resident full professors (about \$83,000 to \$106,000 in current dollars)



## A FOCUS ON FACULTY

and \$1,000 to \$1,750 for resident assistant professors (about \$47,000 to \$83,000 in current dollars). At the time there was no concept of employee benefits—the cost of health care, insurance, and retirement had to be borne from one’s salary.<sup>11</sup> Despite this auspicious beginning—these salary levels were sufficient to attract faculty from a variety of other colleges of the day—the university soon fell behind in the competitiveness of its salaries.

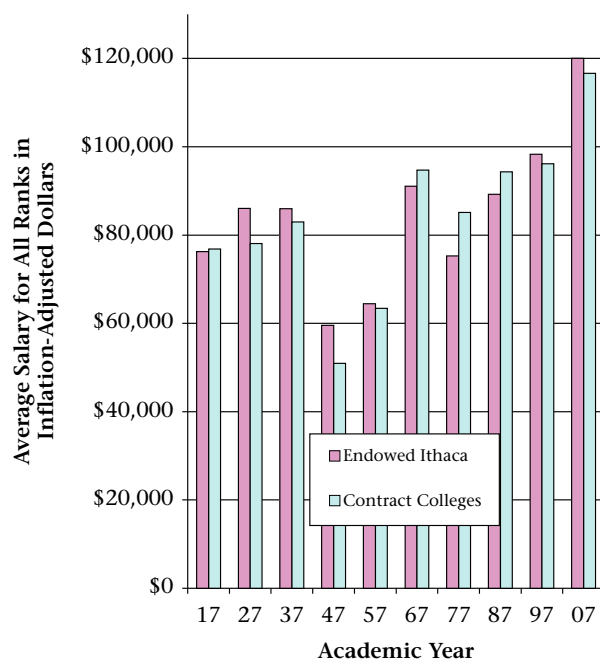
- As early as 1869, the faculty petitioned for general raises, arguing that the cost of living in Ithaca was high (and noting also that they were overworked).
- The first general faculty raises did not occur until 1873, five years after Cornell’s opening, with increases ranging from \$200 to \$250 (approximately \$10,400 to \$13,000 in current dollars). A similarly sized raise occurred in 1881, bringing the full professor rate to \$2,750. According to Morris Bishop, In 1885 a full professor received at Columbia \$5,000–7,500, at Hopkins \$5,000, at Harvard \$4,000, at Yale \$3,500, at Princeton \$3,000 and a house, at Virginia \$3,000, a house, and six acres of land, at Cornell \$2,750, and at Michigan \$2,200.
- By 1890, Cornell faculty—even prominent professors and department heads—were being paid at levels that were not substantially different from those of 20 years earlier. The combination of inadequate salaries and the lack of almost any provision for pensions was so severe that it caused Andrew Carnegie to create the first nation-wide faculty pension plan. Carnegie had joined Cornell’s Board of Trustees in October of that year, and at his first trustee meeting he was initiated into the economic fundamentals of higher education as raises for several faculty members were discussed and approved. As Carnegie later recounted:

Of all professions, that of teaching is probably the most unfairly, yes, most meanly paid, though it should rank with the highest. Educated men, devoting their lives to teaching the young, receive mere pittance. When I first took

<sup>11</sup>Morris Bishop described the case of Professor W. C. Cleveland who, “...died suddenly in January 1873, leaving his widow with forty-one dollars. His colleagues raised a subscription for her, though aware that it would probably go to settle claims against the estate. His engineering class gallantly offered to pay for the daughter’s education. White promised to continue his salary to the end of the college year out of his own pocket, but he made clear that a professor’s untimely death was his own responsibility and created no claim against the University.”

### Average Faculty Salaries by Division Ithaca Campus

(in inflation-adjusted, 2006-07 dollars, without correction for the difference in 9- and 12-month appointments)



my seat as a trustee of Cornell University, I was shocked to find how small were the salaries of the professors, as a rule ranking below the salaries of some of our clerks. ...To save for old age with these men is impossible. Hence the universities without pension funds are compelled to retain men who are no longer able, should no longer be required, to perform their duties.

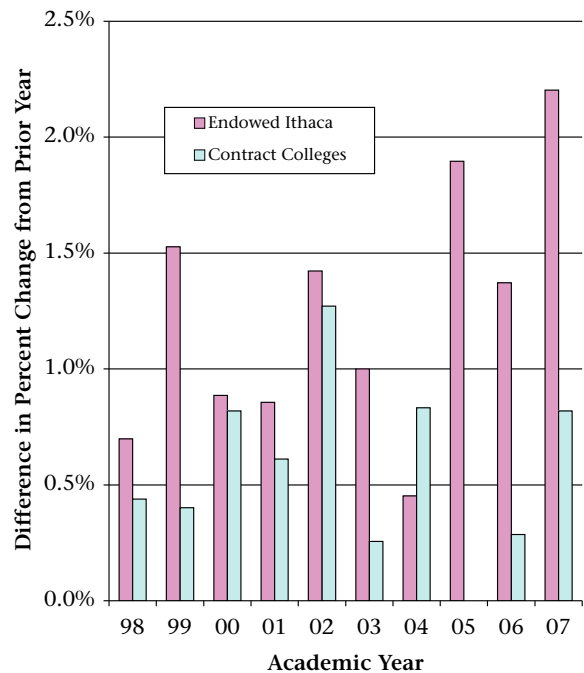
To address the lack of adequate retirement provision for faculty, Carnegie created a free pension system in 1905 for private higher education—the Carnegie Teachers Pension Fund, which was later transformed into the Teachers Insurance and Annuity Association of America (TIAA).

- By 1917, the average full professor salary on the Ithaca campus was \$3,125, and that of assistant professors averaged \$1,785 (about \$95,400 and \$54,500 respectively in current dollars). The overall average salary was \$2,505, or \$76,500 in current dollars. (See graphs above and at the bottom of page 26.) Growth in the cost of living brought about by World War I escalated industrial wages but not professorial salaries. As spiraling inflation devalued already low faculty pay rates, Cornell launched its first capital fund-raising

drive—the \$10 million *Semi-Centennial Endowment Campaign*—with the expressed goal of increasing funding for faculty. Undergraduates joined the effort, parading placards at a football game that read “Feed the Profs” and “A Prof Teaches on his Stomach.” Campaign gifts paired with several tuition increases permitted significant salary raises.

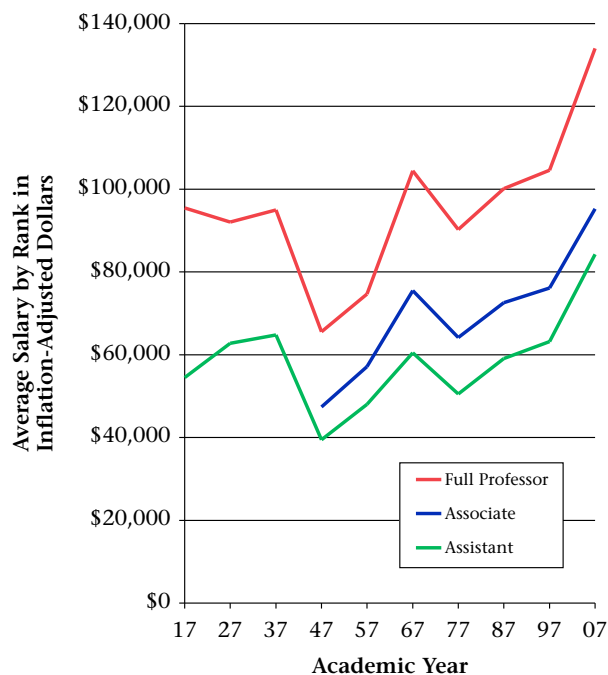
- World War II and the high inflation era of the 1970’s had similar, negative impacts on Cornell’s faculty salaries; depressing them relative to consumer prices and necessitating a gradual but protracted period of recovery simply to regain lost ground.
- Most recently, the average salary for endowed Ithaca faculty whose appointments continued from 2005-06 to 2006-07 increased 4.8 percent in 2006-07, to \$120,750, while the comparable average for contract college faculty grew 5.5 percent, to \$105,717.<sup>12</sup> The overall changes in average faculty salaries were 2.6 percent and 4.6 percent respectively for these two cohorts. That the overall annual change in faculty salaries should be less than that for the subset of continuing faculty

**Difference in Annual Change in Average Salaries for Continuing Versus All Faculty**  
(contract college salaries converted to a 9-month basis)



**Average Faculty Salaries by Rank Ithaca Campus**

(in inflation-adjusted, 2006-07 dollars, without correction for the difference in 9- and 12-month appointments)



makes sense because, in general, in each year some number of senior faculty at relatively high salaries retire and are replaced by a set of newly hired assistant professors at lower salaries. For example, the number of full and associate professors declined by 38 and 8 respectively in 2006-07 while the number of assistant professors increased by 54. The graph above illustrates this effect, showing the difference between the percent increase that occurred annually for continuing faculty versus all faculty for the past ten years. On average, salary increases of continuing faculty in the endowed Ithaca colleges were 1.2 percent more per year than the year-to-year change in overall average salaries would have indicated. The comparable figure for contract college faculty was 0.6 percent over the same time period.

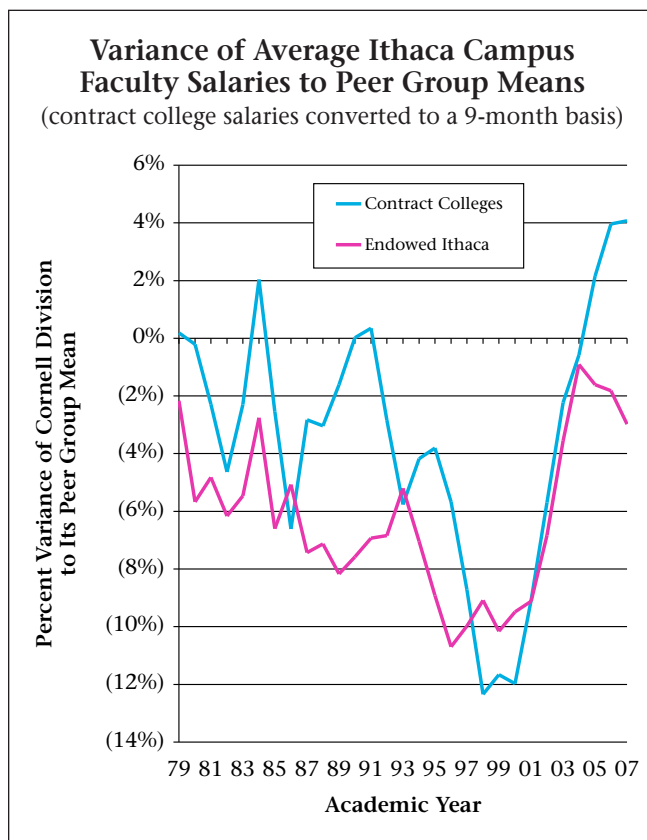
Faculty salaries become competitive: (a) at the point of hire, when an applicant may be considering competing offers; (b) at a point of retention, where an incum-

<sup>12</sup>This average is based on the conversion of 12-month appointments to a 9-month basis for contract college salaries.

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bent is being wooed by another institution; and (c) during the annual salary increase for all faculty, where the university's average faculty salary vis-à-vis its peers affects the institution's ability to attract and retain faculty. Faculty salaries increase in all three situations, the first two having small, incremental impacts and the third having a more significant effect.

- In the 1990's, concern was expressed that, while Cornell was making progress in faculty salary levels, it was losing ground to key competitors. In 1999, the Faculty Senate, the academic deans, and the university administration agreed to define subsets of these institutions to serve as benchmarks. (See Appendix F, page 35.) Cornell then established a goal to raise each division's average faculty salary level to its peer-group mean within a multi-year period. The graph below shows the change in Cornell's faculty salaries measured against the average of these reference groups.
- As of 2006-07, the endowed Ithaca and contract college faculty salary averages were 3 percent below and 4.1 percent above their respective peer-group means. Upon successful completion of this multi-



year effort, Cornell now enters a phase in which the high priority of improving faculty salary levels will be accomplished by using an approach that takes into account the unique circumstances and key competitors of each academic discipline. Resources will be identified and allocated to achieve college-specific salary goals.

### Nine- and Twelve-Month Appointments

Faculty salary analyses usually take into account (and correct for) the difference between nine-month and twelve-month appointments in order to make comparable comparisons of pay levels. The convention is that a faculty member on a twelve-month appointment enjoys one month of vacation and therefore works eleven months. Thus a twelve-month salary can be compared to a nine-month salary by reducing it to nine-elevenths of its full annual value. The rationale for this conversion stems from the concept that faculty on twelve-month appointments work more, and are therefore paid more, than those on nine-month appointments. Unfortunately, this distinction at Cornell is less than clear-cut.

- In the beginning, all faculty were appointed on the same, nine-month basis. Their salaries, however, were always stated on a "per annum" or "per year" basis, which they received in nine monthly installments. The logic of this arrangement can be seen in the 1918 Board of Trustee arrangement made for Professor Carl Becker, who took

...a leave of absence for the months October, November, December, to enable him to continue the work which he has been doing during the summer for the Committee on Public Information in Washington, and since he will be absent one-fourth of the year, he be paid three-fourths of his salary, *i. e.* \$3,000, to be paid in 9 monthly installments, beginning October 15.

Implied in this accommodation is that Becker's employment during the summer was part of his regular annual contract, else he would have been paid for half, not three-quarters, of his salary.

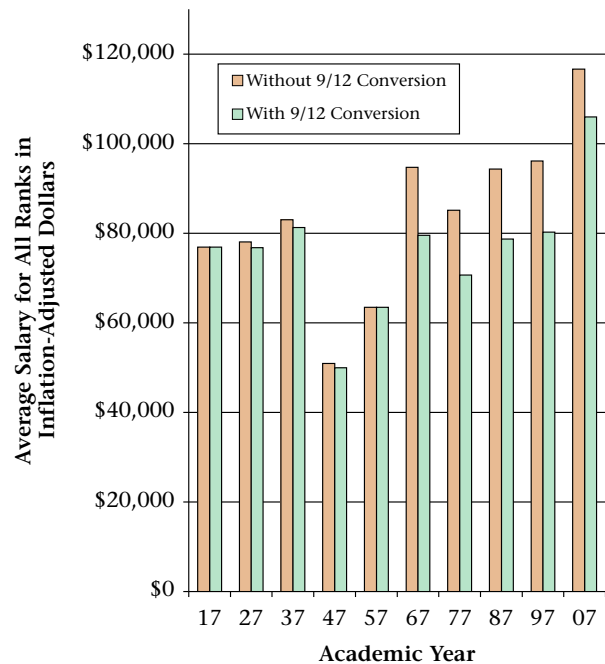
- Beginning in the 1920's, a few contract college administrative faculty were appointed for twelve rather than nine months. At the time, a twelve-month appointment was simply the case of an annual salary being paid in twelve installments rather than nine, presumably as a convenience. Salary levels of faculty with twelve-month ap-

pointments were not substantially greater than their nine-month peers. Generally, the twelve-month cohort represented less than 10 percent of all faculty through the 1950's and included a few professors in endowed Ithaca colleges.

- In the late 1950's, there was a concern that contract college faculty salaries were falling behind those of the State University of New York (SUNY), where some professors were being paid at higher rates on a twelve-month basis. (Cornell's four contract colleges were formally affiliated with SUNY when the latter formed in 1948.) An arrangement was made whereby SUNY would allocate additional funding to raise salaries above normal limits if Cornell would switch faculty appointments to a twelve-month basis. Most of the faculty in the Colleges of Agriculture and Life Sciences and Veterinary Medicine, but only part of the faculty in the College of Human Ecology, were converted. Very few of the faculty in the School of Industrial and Labor Relations (ILR) were changed. Since the incremental funding was part of general salary programs that were spread over several years, there was no requirement that a mechanical 11/9ths adjustment be made to each converted appointment at the moment of transformation. Instead, the salary increase dollars were awarded discretionally, and ILR, which largely did not make the switch, got its fair share of the funding. In some cases, individual faculty who remained on a nine-month appointment basis received larger pay increases than those being converted to a twelve-month basis.
- Today, while some faculty appointments within the contract colleges do take into account the nine-month/twelve-month distinction, with incrementally higher salary levels for the latter, Cornell has begun to deconvert the appointments of twelve-month faculty back to a nine-month basis with no corresponding decrease in annual pay—a process that is rendering the distinction between the two modes of appointment less than definitive.<sup>13</sup> And many faculty on nine-month appointments within the endowed Ithaca and contract colleges would argue that they work year round as professors, irrespective of the periodicity of their

<sup>13</sup>The fraction of contract college faculty on twelve-month appointments has declined from 92 percent in 1999-2000 to 51 percent in 2006-07.

**Average Faculty Salaries – Contract Colleges**  
(in inflation-adjusted, 2006-07 dollars)



appointments. The distinction remains important, even if inaccurate, as standard comparisons of academic-year faculty salaries between Cornell and all other institutions are made with converted data. The impact of making the conversion in the 1960's for contract college faculty can be seen in the graph above. Visible too is the effect of the more recent deconversion.

Since 1892, some faculty have been appointed every year to teach in Cornell's Summer Session. Not only does this practice continue today, but faculty are also sometimes paid extra for offering courses in other colleges at Cornell during the academic year. With the advent of substantial grant and contract funding during World War II, the federal government began to permit the recovery of a portion of faculty academic-year salaries from those sources. Also, faculty can be paid additionally during the summer from their grants and contracts commensurate with their effort on these projects. For many faculty, there is a general expectation that they pursue such lines of supplemental compensation, and institutionally provided start-up packages for new professors frequently include provision for summer support. These additional payments

**2006 Faculty Salaries – Ithaca Campus**

	Endowed Ithaca	Contract Colleges	Contract as a Percent of Endowed
9-Month Salaries	118,422	104,112	88%
Total Earnings	128,950	121,250	94%
Total Earnings as a % of 9-Month Salaries	109%	116%	

further blur the distinction between nine- and twelve-month salaries. When faculty are paid extra for teaching during the summer, they are clearly being compensated for an increased teaching workload. However, not all faculty with research grants and contracts utilize a portion of the available funding to pay their own salaries. It is a discretionary, not a mandatory, decision. Faculty who decline to charge their salaries to grants and contracts may still perform work on those research projects, even during summer months, as a form of cost sharing with the federal government. Summer earnings are clearly additional pay whether or not they represent additional work. The table above illustrates the impact of all forms of additional pay on average faculty salaries at the Ithaca campus for 2006, showing that in terms of total earnings the difference between average endowed Ithaca and contract college faculty is less than would be indicated by comparing just 9-month-adjusted, academic-year salaries.

**Employee Benefits**

The concept of employee compensation being composed of salary plus a package of employee benefits evolved gradually at Cornell. The university’s first faculty received salaries only, although some were housed, along with their families, in Cascadilla Hall (which Andrew D. White called, “...an ill-ventilated, ill-smelling, uncomfortable, ill-looking alms-house”).

- One of the first bona fide employee benefits was the provision of leases to professors to construct homes on university grounds. There were 42 such structures on the Ithaca campus by 1900, lining the side of East Avenue from the site of Baker Hall to the Engineering Quadrangle and clustered below Central Avenue. Gradually, most were razed to make room for academic structures, and the only

one remaining is Andrew D. White’s mansion.

- Another early benefit was free tuition for faculty dependents, which was granted for their children in 1869 and extended to faculty wives in 1883.
- The current system of one-year sabbatical leaves for professors after seven years of service was enacted in 1885. Faculty on leave were to be paid one-half of their normal annual salaries, and leaves had to be coordinated to ensure that course offerings were maintained for students.
- In 1884, the faculty petitioned for a salary raise, noting that they lacked pensions. A trustee drew up a scheme for pensions that would be funded by a mandatory contribution from faculty with no corresponding cost to the university. While this was being studied, Cornell awarded the first pension to a faculty member in the person of William D. Wilson, who was made Emeritus Professor with a retiring allowance of \$2,000 per year. Jacob Gould Schurman revived the pension discussion in 1895, suggesting that the university fund the majority of the cost, that faculty contribute four to five percent of their annual salaries, and that the retirement age be fixed at 65. The trustees took no actions on any of these plans until 1903, when William H. Sage donated \$150,000 (about \$7.7 million currently) for a pension fund. The Sage pension fund was augmented by Andrew Carnegie’s free pension system described above.
- While Cornell considered offering faculty access to medical insurance as early as 1954, the first university-subsidized health plan was not implemented until 1959. (Contract college faculty gained access to New York State funded health care insurance at about the same time.) Health insurance represented 2.4 percent of employee benefits costs in 1959-60; today, it accounts for 36 percent.
- Additional employee benefits introduced in the twentieth century include: Social Security and Medicare coverage; life, accident, dental, eye, auto, homeowner’s, long-term care, and unemployment insurance programs; workers compensation coverage; disability insurance and accommodations; access to childcare, employee assistance, and wellness programs; tax-advantaged retirement, medical, and child-care savings programs; and support for child adoptions, among other provisions. The university (or New York State, in the case of con-

tract college faculty) heavily or partially subsidizes some of these benefits, particularly health care. The costs of other programs, such as auto and long-term care insurance, are borne entirely by the faculty member, at partially discounted rates advantaged by being part of a group purchase.

## Endowed Professorships

An important component of faculty compensation is the provision of endowed professorships or chairs, which are assigned to prominent faculty in recognition of their academic leadership.

- The first endowed chair at Cornell was the Professorship of Hebrew and Oriental Literature and History, which the New York City financier Joseph Seligman proposed to endow in 1874. Cornell's *Register* of 1874 glowed with the prospect that the university would soon be able to offer courses in "Arabic, Syriac, and other cognate languages to the Hebrew, and that Semitic philology." A condition of Seligman's gift was that he would nominate the chair holder, and based on his wishes Felix Adler, a graduate of Columbia and the University of Heidelberg, was appointed. Morris Bishop described Adler as "...young, brilliant, and popular with the students, who called him 'Young Eagle.'" Adler managed to rile some of Cornell's faculty and local townspeople with his views on Scripture, and allegations were made that "...some eminent citizens were getting 'gloriously drunk' on the fine old wines proffered by Adler." According to Bishop, "After two years Adler was quietly dropped. His sponsor [Seligman] demanded an inquiry." In rebuffing Joseph Seligman in 1877, the trustees established one of their first guiding principles governing the receipt gifts for professorship endowments:

A communication from Joseph Seligman asking the reappointment of Prof. Felix Adler was read and, on motion of Mr. Halliday, the following resolution was adopted: RESOLVED, That in the future no Endowments of Professorships will be accepted by the University which deprive the Board of Trustees of the power to select the persons who shall fill such professorships.

- The next professorship (and the first to persist to the present day) was the Susan E. Linn Sage Professor of Ethics and Philosophy, given in 1890 by Henry W. Sage. The first chair holder was the Reverend

Charles Mellen Tyler, a pastor of the Congregational Church in Ithaca; the current chair holder is Professor Richard N. Boyd.

- Currently, there are 327 named professorships on the Ithaca campus, of which 43 are honorary titles (having no dedicated endowment support). Professorships are periodically and temporarily vacant due to faculty turnover and the careful process used to fill such important positions, including authorization by the Board of Trustees.
- While the university now requires a minimum gift of \$2 million to establish a professorship, the average book and market values of the 226 professorship endowments that currently have faculty appointments are \$1.2 million and \$3.2 million respectively. The mean annual payout from these endowments is \$103,692, while the cost of compensation (salaries plus benefits) for this set of professorships averages \$197,607. Unrestricted institutional resources make up the difference.
- In addition to the partial support of compensation costs, each chair holder receives a small research allowance that the professor may use for discretionary purposes.

## Other Forms of Support

Other forms of support, separate from those of direct compensation, play an increasingly important role in attracting and retaining the very best faculty. These modes of assistance include work opportunities for spouses and partners, funding for publications and travel to meetings, purchase of equipment and the provision or renovation of laboratory space, and support for technical staff and students. A typical start-up package may include all of the above as well as a signing bonus and a housing subsidy. Start-up packages in the sciences and engineering sometimes exceed \$1 million per new hire.

The provision of support for spouses and partners becomes more significant for rural campuses, like Cornell's, where there are limited opportunities for professional employment in the immediate region. Cornell has responded by creating jobs on campus, which are sometimes subsidized, or by helping to find employment through largely unsubsidized partnerships with local companies and organizations.

## CHALLENGES AND INITIATIVES

Cornell and its faculty face a number of challenges in the twenty-first century, many of them legacies from prior eras. Among these are the need to (a) provide an improved climate for work and personal life; (b) increase the gender and racial/ethnic diversity of the faculty and Cornell's academic leadership; and (c) ensure adequate financial and facilities support for academic programs, including library collections. The university is making progress on all three of these fronts.

In November of 2004, Provost Martin charged an Advisory Committee on Faculty Work Life "to examine the tenured and tenure-track faculty work life and working climate," with the request that the effort include "special emphasis on the experiences of women faculty." Going well beyond the conventional gender climate study, the conceptualization of that effort was to advance the understanding of faculty work lives in a broad sense.

- In the spring of 2005, researchers in the office of Institutional Research and Planning, working under the auspices of this committee, conducted a series of seven focus groups with men and women faculty of various ranks and from different disciplines, inviting them to speak on the quality of their work lives and the factors that shape their experiences. These focus groups, in turn, informed the development of the survey questionnaire.
- The Faculty Work Life Survey was administered to all tenured and tenure-track faculty members who were not in the first year of their contracts in the fall of 2005. Nine hundred and sixty-two faculty—65 percent of those invited to participate—responded to the web-based survey.
- Results from that survey document that while satisfaction with being a faculty member is high, there is also a gender difference: 48 percent of men on the faculty reported that they were "very satisfied," as compared to 35 percent among women. In addition, results from the survey have underscored that the gender difference in job satisfaction is closely linked to women's weaker sense of integration into the university: women were more likely to report that they felt ignored in their departments, were less satisfied with opportunities to collaborate with other faculty on campus,

and were less able to navigate the unwritten rules of being a faculty member. Integration matters to both men and women, but because women tend to feel less integrated, their satisfaction levels tended to be lower.

These findings will inform policies and practices aimed at maintaining excellence and commitment among an increasingly diverse faculty, and are already being heavily used by the newly created Advancing Cornell's Commitment to Excellence and Leadership center (ACCEL). ACCEL was established through an institutional transformation grant awarded by the National Science Foundation's ADVANCE program, which is focused on increasing the recruitment, retention, and promotion of women into leadership positions in engineering and the sciences.

- ACCEL sets forth four initiatives: a Recruitment Initiative to support the hiring of women; a Faculty Development Initiative, including faculty mentoring programs; a Climate Initiative focusing on the training of department chairs, search committees, and faculty more generally; and an Evaluation Initiative that includes quantitative studies on promotion and retention and a follow-up of the Faculty Work Life Survey.
- ACCEL has set the goal to achieve a 20 percent representation of women faculty in each science and engineering department. At present, only about half of the 51 science and engineering departments meet this 20 percent target. Through continuing support of the development of women at Cornell, the ACCEL center aspires that science and engineering faculty reach one-third women by 2015, the university's sesquicentennial.

An important work/life issue for faculty, staff, and students with children is access to day-care, for which there is a shortage in Tompkins County, especially for children below the age of three. Ideally, this child-care should be of high quality, conveniently located, flexible in hours of operation, and affordable. To address the scarcity of such care, Cornell is planning to construct a facility for use by members of the Cornell community. The project calls for a new building that can accommodate 158 children, including infants and toddlers. The project plan proposes utilizing Bright Horizons Family Solutions to design and operate the facility under contract with the university, beginning in the summer of 2008.

More recently, in her March 2007 Academic State of the University Address, Provost Martin addressed the issue of faculty diversity:

We will not be able to boast a world-class faculty when we have hired 600 new faculty in fifteen years, if that faculty is not diverse. To make this university worthy of our founder's vision and to sustain its quality, we need to attract and to keep a much broader mix of people from across the nation and the world, in short, to have Cornell reflect, understand, and embrace the extent of human diversity. Insofar as we fail to diversify our populations of students, staff, and faculty we leave talent on the table and we will lose our competitive edge as one of the world's great universities if we do not step up our efforts and refine our strategies. Let me emphasize only some of the things I think it is important to ensure:

1. that every department or hiring unit be required to build pools of women and underrepresented candidates well in advance and apart from authorization for a particular hire or search, that they not wait for a diverse pool of candidates to apply;
2. in order to make that possible, that every unit identify scholars or scientists, particular institutions likely to be training women or students of color; that they follow their careers, bring them to campus while still students or postdocs for talks, seminars, or visiting stints; and that they offer the forms of support that will prepare those prospective job candidates to succeed;
3. that we learn again to attend to unintended, unconscious biases that seem to lead, according to the best research, over and over to the assumption that the white male candidate is the right choice, even when qualifications are equal.

Along with efforts to increase overall faculty diversity, progress is being made in the area of faculty leadership. In 1982-83, only 4 percent of all leadership roles (deans, directors, chairpersons, vice provosts, etc.) were held by women and another 4 percent were held by minorities (all males at the time). Currently, women occupy 23 percent of all leadership positions and minorities (male and female) account for 11 percent.

Cornell continues to make investments in academic facilities and library collections. The dedication of financial resources for the former can best be understood in terms of the university's capital plan, which includes almost \$670 million in new academic facilities for the Ithaca campus plus an additional \$230 million in renovations of existing academic buildings. Among the new structures is the Life Sciences Technology Facility, a \$163 million building that will house faculty involved in biomedical and biological engineering, biophysics, plant functional genomics, com-

putational and statistical biology, and basic biology. Other major projects include the \$140 million Physical Sciences Facility; the \$80 million Animal Health Diagnostic Center; the \$55 million East Campus Research Facility; the \$63 million Gates Hall, which will house the Faculty of Computing and Information Science; the College of Architecture, Art and Planning's \$49 million Milstein Hall; and a \$45 million addition to Goldwin Smith Hall.

With 7.6 million printed volumes, 8.2 million microforms, 61,000 serial subscriptions, and 70,000 cubic feet of manuscript collections, Cornell's library collection is the eleventh largest in the nation among institutions of higher education. The university spends \$52 million annually on the library system, including \$15 million for library acquisitions. Looking to the future, the library system faces great challenges as the world of information evolves into ubiquitous cyberspace, with its expectations of unlimited and instantaneous access. Already, the university spends over a third of its acquisition budget for electronic materials, while the demand and the need for traditional paper-based books and manuscripts grows as well.

The university's recently announced \$4 billion fundraising drive—*Far Above... The Campaign for Cornell*—is designed to help address these challenges, among others, enabling "...Cornell to be the best research university for undergraduate education; set the standard for interdisciplinary collaboration in areas of critical social importance; make its approach to its public mission a model for higher education; and fully realize its role as land-grant institution to the world." The campaign has identified three fund-raising goals related directly to faculty:

*Endowed professorships*—to provide the long-term funding and prestige that are essential to recruiting and retaining top faculty and giving them the tools they need to succeed.

*Program and research support*—for projects and interdisciplinary initiatives across the university, such as the life sciences, biomedical engineering, the Society for the Humanities, and the Institute for Social Sciences.

Support for *collaborations* between faculty in Ithaca and researchers and clinicians at Weill Cornell Medical College—to drive medical breakthroughs and scientific advances.

In addition, funding plans for many of the facilities projects described above are partially predicated on gifts to be raised during the campaign.



## WHAT MAKES GREAT FACULTY?

Students and colleagues often comment that great faculty are known to be passionate about their academic interests and to share that enthusiasm widely. The author E. B. White '21 mentioned these aspects in his introduction to *The Elements of Style*, in which he described his former Cornell English professor, William Strunk:

Professor Strunk was a positive man. His book contains rules of grammar phrased as direct orders. ...“Omit needless words!” cries the author on page 23, and into that imperative Will Strunk really put his heart and soul. In the days when I was sitting in his class, he omitted so many needless words, and omitted them so forcibly and with such eagerness and obvious relish, that he often seemed in the position of having shortchanged himself—a man left with nothing more to say yet with time to fill, a radio prophet who had outdistanced the clock. Will Strunk got out of this predicament by a simple trick: he uttered every sentence three times. When he delivered his oration on brevity to the class, he leaned forward over the desk, grasped his coat lapels in his hands, and, in a husky, conspiratorial voice, said, “Rule Seventeen. Omit needless words! Omit needless words! Omit needless words!”

Cornell alumnus Raymond F. Howes '24 conveyed a similar image of Professor Edward B. Titchener:

Some of us used to wonder why E. B. Titchener always lectured in an academic gown. It wasn't the gown, of course, which filled every seat in the room every day, so that the dean was continually asking him how students confined to the Infirmary came to be listed as present. What made students cut other classes to hear him was the unfailing interest and flawless delivery of his lecturers on psychology. But the Oxford gown helped. “It confers the right to be dogmatic,” he said once, with almost perfect control of the smile at the corner of his lips. No one questioned the propriety of his wearing anything he pleased, or of being dogmatic if he liked.

Today's Cornell faculty may not be as dogmatic as faculty of 100 years ago, but they continue to exert profound influence. Examples include:

- *Annelise Riles*, law and anthropology. Riles was described by Timothy Webster, a law student interested in Asian law, as a “dynamo.” “In the classroom, her interdisciplinary training allows her to illuminate the law in ways few professors are able: as one fragment of a much larger social, cultural, theoretical and philosophical fabric.”
- *Ken McClane*, the W.E.B. DuBois Professor of Literature. During a visit to campus last semester, author Lorrie Moore, MFA '82, lamented having to teach a writing class populated by students who had just come from one of McClane's classes. “They would come in all excited and then slowly grow bored and then their eyes would glaze over,” Moore said. “He was such an inspiring teacher.” Kimari Johnson, M.F.A. '97, concurred. “He gets excited for people,” said Johnson. “I wrote a poem the other day and was wondering what Ken would say about it. He can get inside a poem and pull things out of it that a lot of people would never see. He's an excellent reader—of people and of poems.”
- *Walter LaFeber*, Andrew H. and James S. Tisch Distinguished University Professor. “Many of us became LaFeber addicts, taking his classes, becoming history majors—of American foreign policy, that is,” said John Wolff '90. “We'd pester him to mentor our honors theses, name our fish ‘Wally’ and hope one day that we'd be the ones calling on him for advice from our future perches in the State Department, White House, Pentagon, CIA, NSA or from wherever it was we were going to change the world.”

Morris Bishop described the nineteenth century Cornell as:

...a raw campus [that] was imbued with a mood of hope, with a sense of destiny. Many of the early faculty came to Ithaca, and many remained through difficult, uncomfortable years, because they were encouraged to do new things elsewhere forbidden, to shed conformity in their teaching and behavior, in short, to be themselves. They had the proud conviction that they were shaping great things to come. In this, of course, they were quite right.

Cornell's current faculty face obstacles as daunting as their forebears, although some challenges are different and many are drastically more complex. Yet the fundamental interaction between teacher and student remains unchanged, and the drive that causes a scholar to pursue relentlessly the answer to a particular question continues unabated. Faculty are drawn to this profession for love and desire—because in general it is exactly what they want to do in life. That euphoria combined with no small talent and a lifetime of training helps to create great faculty.

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## PICTURE CREDITS

- Pages 3, 9, 10, 11, 12, 13, and 15. Division of Rare and Manuscript Collections, Cornell University Library.
- Page 5. Liberty Hyde Bailey, 1891. Courtesy of the Liberty Hyde Bailey Hortorium, Department of Plant Biology, Cornell University.
- Page 14. Jay Saunders Redding. Courtesy of the Brown University Archives, Brown University.

# APPENDIX

# F

## AVERAGE NINE-MONTH FACULTY SALARIES SELECTED RESEARCH INSTITUTIONS

<u>Institution</u>	<u>86-87</u>	<u>Institution</u>	<u>96-97</u>	<u>Institution</u>	<u>06-07</u>
Stanford University *	\$56,374	Cal Tech *	\$91,451	Harvard University	\$138,666
Cal Tech *	56,250	Harvard University	89,874	Stanford University *	135,143
Harvard University	55,102	Stanford University *	88,924	Cal Tech *	131,737
UC–Berkeley †	53,397	Princeton University *	85,494	Princeton University *	129,707
MIT	52,784	New York University	85,447	Columbia University *	129,293
UCLA *	52,329	MIT	84,801	Univ. of Pennsylvania *†	129,283
Columbia University *	51,720	University of Chicago *	84,777	University of Chicago *	128,871
Princeton University *	51,548	Univ. of Pennsylvania *†	84,674	Yale University *	122,014
Yale University *	51,106	Yale University *	83,387	MIT	121,462
Univ. of Pennsylvania *†	51,070	Columbia University *	83,360	Northwestern Univ.	120,316
Carnegie Mellon Univ.	50,880	Northwestern Univ.	81,643	New York University	119,237
UC–San Diego *	50,867	Duke University	80,316	<b>Cornell (Endowed) *</b>	<b>118,422</b>
Georgetown University	50,165	Georgetown University	77,934	Duke University	117,151
Johns Hopkins Univ.	50,096	Carnegie Mellon Univ.	77,635	Dartmouth College	113,616
Rutgers University	50,044	Rutgers University	76,254	<b>Cornell (Ithaca Campus) 112,636</b>	
New York University	49,883	Univ. Southern Calif.	76,029	Georgetown University	112,160
University of Chicago *	49,648	University of Michigan *	75,635	Univ. Southern Calif.	111,886
University of Virginia	49,192	Johns Hopkins Univ.	74,525	Carnegie Mellon Univ.	108,530
Univ. Southern Calif.	49,022	<b>Cornell (Endowed) *</b>	<b>73,891</b>	Brown University	108,046
University of Michigan *	48,392	UC–Berkeley †	73,387	UC–Berkeley †	107,691
Duke University	48,339	Dartmouth College	72,972	UCLA *	107,102
UC–Davis †	48,189	UCLA *	72,567	University of Michigan *	106,884
<b>Cornell (Endowed) *</b>	<b>48,072</b>	University of Virginia	70,888	University of Virginia	104,969
Northwestern Univ.	48,054	U. of North Carolina †	70,730	<b>Cornell (Contract) †</b>	<b>104,112</b>
Ohio State University †	46,491	UC–San Diego *	70,478	U. of North Carolina †	103,965
University of Illinois	46,145	Brown University	70,466	Johns Hopkins Univ.	102,473
U. of North Carolina †	45,436	Ohio State University †	68,274	University of Maryland	101,999
<b>Cornell (Ithaca Campus) 45,310</b>		<b>Cornell (Ithaca Campus) 67,870</b>		Rutgers University	101,527
University of Maryland	45,057	Penn. State University †	67,845	UC–San Diego *	100,466
Brown University	44,895	University of Illinois	67,746	University of Texas	100,119
Dartmouth College	44,744	University of Maryland	67,226	University of Illinois	99,429
Purdue University	44,126	University of Texas	67,166	Penn. State University †	98,669
<b>Cornell (Contract) † 43,786</b>		Purdue University	66,698	Univ. of Minnesota †	96,873
Penn. State University †	43,274	UC–Davis †	65,834	Ohio State University †	96,322
Univ. of Minnesota †	43,241	Univ. of Minnesota †	64,376	UC–Davis †	94,185
Univ. of Wisconsin †	42,976	Univ. of Wisconsin †	62,757	Univ. of Washington	92,381
University of Texas	42,142	Michigan State Univ. †	62,629	Michigan State Univ. †	91,358
Univ. of Washington	41,213	<b>Cornell (Contract) † 61,655</b>		Texas A&M †	90,449
Texas A&M †	40,512	Univ. of Washington	61,070	Purdue University	90,154
Michigan State Univ. †	40,207	Texas A&M †	60,045	Univ. of Wisconsin †	88,578

- Notes:
- The average salary (excluding extra pay and summer compensation) for each institution (including Cornell's contract colleges) was computed by weighting the mean salary by academic rank for the number of endowed Ithaca faculty in those ranks. Twelve-month salaries were converted to a nine-month appointment basis.
  - Institutions defined as the peer comparison group for endowed Ithaca are marked with an asterisk (\*) while institutions defined as the comparable group for the contract colleges are marked with a dagger (†).