

Developing a Compensation Plan for Increasing Engineering Technology Faculty Salaries

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Abstract

Increasing salaries to attract, retain, and motivate faculty has always been a high priority for the Purdue School of Engineering and Technology at Indiana University-Purdue University Indianapolis (IUPUI). For the past 23 years, we have used various methods to present our case to the campus's central administration for the purpose of acquiring base funds to increase faculty salaries. During the 1980s, we were very successful in obtaining additional funds to increase faculty salaries. In the 1990's, however, financial changes occurred within the university that have made it harder for our school to obtain the needed additional base funds to bring our faculty salaries to the level of our peer institutions. We realize that there is a need to explore other avenues to reward faculty, especially in light of the fact that increases to base funding in higher education remains difficult to acquire.

In this paper, we outline the development of a compensation plan specifically designed to attract, retain, and motivate faculty. In order to do this, we will first look at the challenges and changes higher education faces pertaining to these aspects. We will then review both cash and non-cash options for compensating faculty. In addition, we will include the steps necessary for implementing a compensation plan over a given period of time and a discussion of overcoming obstacles for achieving the desired goal. This paper will be beneficial for deans and directors of engineering technology programs, and it should also be of interest to engineering technology faculty.

I. Changes and Challenges Facing Higher Education

Before discussing some of the specific strategies administrators can use to compensate faculty, it is important to address some of the salient changes and resulting challenges that higher education presently faces.

Higher education, as an industry, will be experiencing rapid growth throughout the next several years, largely due to the maintained and increased need for educational services, research capabilities, and public outreach, service, and community development opportunities. Despite this growth, however, higher education is far from attaining the stability that other industries so often assume. Presently, there are several factors that are contributing to the changes taking place in postsecondary institutions. All of these changes have a direct connection to and impact on what transpires in the teaching and learning process; all impact the nature of faculty work;

and all pose salient challenges for institutions as they seek to attract, retain, and motivate their faculty.

First, institutions of higher education are experiencing a shift in the demographic composition of their student population. Throughout the mid-1980s and well into the 1990s, the enrollment of traditional students, generally thought to be between the ages of 18-24, declined. Replacing this group, in many instances, were adult learners who came to campus as either delayed entrants or returning students. In the next several years, however, the number of traditional students is expected to increase, largely due to the “baby-boom echo.” At the same time, the demand from adult learners will continue to expand, as lifelong learning, updating of skills, and learning for enjoyment all become more widespread. These aspects combine to create campuses and classes that are increasingly comprised of an age-enrollment mix, consisting of both traditional students and adult learners. *The challenge, therefore, will be for faculty and administrators to design learning opportunities, development programs, and other activities that will simultaneously meet the personal, academic, and professional needs of both groups.*

Second, most institutions – especially public colleges and universities – increasingly operate in an environment of increased expectations and accountability from constituent groups. Students, parents, employers, accrediting agencies, and legislative bodies, to name just a few, are demanding higher quality in both the instructional process and in the documented and demonstrated learning outcomes of students. As a result, assessment, evaluation, and other instructional and programmatic improvement efforts have been initiated, all with the express purpose of providing more accurate information to stakeholder groups about what actually happens in a higher education setting. This will impact the teaching-learning process, as more emphasis is placed on what occurs at the classroom level. *The challenge, therefore, is for faculty and administrators to design assessment processes which take into consideration the reporting requirements of the institution to its external constituents, while protecting both the academic freedom of faculty and the diversity present in teaching and learning styles, as well as modes of learning assessment.*

Third, at a time when institutions are asked to be more accountable, they most are also increasingly being asked to do more with less. Resource constraints are a reality on campuses – public and private – and such constraints often limit what individual faculty can realistically initiate to improve their instructional practices in the classroom. In many universities, the expectation that faculty will secure funding from outside sources is a given. Most external funding, however, is generally earmarked for and designed to further specific modes of research – and it is rare that such funding opportunities center on pedagogic improvements to the teaching and learning process in higher education. *The challenge, therefore, is for administrators and faculty to be innovative in the face of resource constraints and to seek either internal or external funding opportunities that will enable students to be the beneficiaries of improved pedagogic practices in the classroom.*

Fourth, campuses require innovation in the classroom, especially given the continued emerging presence of technology in all aspects of society, including the teaching-learning process. Students demand to be taught about and with the latest technology; employers demand that graduates be able to effectively utilize technology; and society-at-large demands that its citizenry

be technologically literate and able to compete in an increasingly global marketplace. All of these factors conspire to make the use of technology in the teaching-learning process of paramount importance. Yet, in spite of the demands for and benefits of its use, several faculty members are still resistant to employ technology in their classes. *The challenge, therefore, is for administrators and faculty to seek ways in which technology can be appropriately utilized to further the instructional objectives of courses, programs, and curricula, all with the intent of making students, faculty, and administrators more technologically savvy and proficient.*

Fifth, on many campuses there is an ongoing discussion about the ways institutions seek to meet the often conflicting demands of its teaching, research, and service missions. More importantly, criticisms have been levied at several of the larger institutions that too much time, attention, and expertise have been devoted to research endeavors – at the expense of solid undergraduate teaching. In a time when accountability requirements from a variety of constituent groups is increasing and the academic preparedness of undergraduate students is decreasing, it is vital that institutions re-examine their commitment to, investment in, and development of strong undergraduate teaching. *The challenge, therefore, is for administrators and faculty to work together to articulate the balance of teaching, research, and service vis a vis the institution's mission and to align faculty workloads, reward systems, and development opportunities to support those initiatives.*

Finally, institutions of higher education increasingly find themselves operating in an environment characterized by heightened competition. Competition in this context refers not only to recruiting students (for which there seem to be a marked proliferation of proprietary schools), but also to the acquisition of research funds and faculty talent and expertise. In such a competitive environment, institutions must accurately define their mission and core competencies, and appropriately and aggressively position themselves to become the institution of choice for students, faculty and staff, and research funding. Failure to recognize the heightened competitive environment in which higher education institutions operate may result in top students and faculty being lured elsewhere. *The challenge, therefore, is for administrators and faculty to seek ways to align the mission, resources, and culture of the institution to become the choice institution not only for students, but also for faculty who will contribute to the fulfillment and advancement of the strategic initiatives of the institution.*

II. Developing a Compensation Plan

Before identifying a methodology for collecting data to allow informed decision-making, it is essential to understand the purposes of compensation plans. The *American Compensation Association*, the professional association aimed at promoting sound compensation management practices, identifies three central purposes of compensation programs: to *attract*, to *retain*, and to *motivate* employees.

Attracting the most talented employees who will contribute to the strategic initiatives of the organization is a concern every employer faces. This challenge is most salient for professional schools in institutions of higher education due to the competition for talent they face from business, industry, government, and community organizations. Therefore, compensation plans

must be designed to account for practices found in a variety of organizations – not just postsecondary institutions.

Retaining employees is also of strategic importance, especially for colleges and universities who wish to retain faculty with strong national reputations and successful externally funded research projects. Accordingly, compensation plans need to be designed to account for the meritorious contributions of individual faculty and not be based entirely upon arbitrary considerations such as length of employment with the institution.

In addition to attracting and retaining employees, compensation plans must motivate employees to continue contributing to the goals of the organization. In higher education settings, it is especially important for faculty to engage in ongoing professional development and to participate in the advancement of knowledge in their respective disciplines. How faculty members are compensated – including both cash and non-cash compensation – can serve as a form of extrinsic motivation that simultaneously meets personal and professional needs, while also contributing to the broader initiatives of the institution.

Compensation plans which seek to attract, retain, and motivate employees are, philosophically speaking, on the right track. Each position in an organization is compensated based on such factors as knowledge/skill, effort, responsibility, and working conditions. Therefore, positions requiring greater and/or specialized knowledge/skill, or positions requiring incumbents to work in high-hazard or undesirable working conditions, are compensated at a higher rate than other positions. Finally, considerations around internal equity and external consistency should also be noted.

Internal equity refers to how administrators view the value of certain positions within the institution. For example, it is readily assumed that full professors earn more than assistant professors, given the differences in rank and experience. It is perhaps more difficult to establish internal equity among positions that are at the same rank but in different disciplines. To what extent should mechanical engineering technology faculty be compensated differently than civil engineering technology faculty? To what extent should technical graphics faculty be compensated differently than interior design faculty? In most organizations, internal equity is expressed in terms of a job-worth hierarchy, in which jobs that are more highly valued by the organization are compensated more than those with less value are. For example, administrative assistants are compensated more than janitorial staff, because of the higher degree of value placed on the administrative assistant position.

IUPUI has recently conducted a pay equity study to identify whether any current faculty has been overlooked for salary considerations on the basis of race or gender. The study takes into account many parameters, such as length of employment, terminal degree dates, etc. The university has mandated that the academic units address the resulting problems, if any, during the next budget years to close the gap for the affected faculty.

External competitiveness refers to the extent to which positions within the institution are compensated based on the market rate for both the local labor market and the national norms for the industry and/or profession. Therefore, external competitiveness has implications for

institutions of higher education, which operate in labor markets where they are not the largest, most powerful employers in the area. In these instances, it is not acceptable for institutions to compensate based entirely on what higher education pays for positions. In order to attract, retain, and motivate top talent, institutions in urban and metropolitan areas, where they face stiff competition from other local employees, must align their compensation practices with those of leading private-sector organizations in the labor market.

III. Increasing Compensation -Making the Case

To build a sound case for acquiring additional funds for the purpose of increasing faculty salary base, salary comparisons of industry, other institutions, and professionals are needed. Examine national salary surveys, professional engineer salaries, and even recent undergraduate salary offers to build evidence of an under-compensated salary structure. In making comparisons, consider the size, type, and mission of the institution and school program.

The first step in the process of building your case is to do a thorough examination of your own school or programs. This involves examining the minimum, maximum, and average faculty salaries for all disciplines and ranks in your school or program. Then, make a comparison with like schools and programs either using national surveys and/or surveying a selected group of peer institutions.

There are national surveys for engineering technology education. The Engineering Workforce Commission (EWC), which is the research and publications branch of the American Association of Engineering Societies (AAES), biennially surveys the salaries of engineers in education. The latest edition to date is titled *Salaries of Engineers in Education 1996*¹. The EWC *Salaries of Engineering in Education* surveys the salaries of engineering and engineering technology faculty based on years since bachelors for all ranks. The EWC goal is to determine current levels of compensation for engineers in education and to measure trends over time. The EWC also provides a Personal Salary Profile especially designed for individual engineers. The profile takes into account levels of education, years of experience, supervisory status, geographic region, and type of industry. For a fee, it provides the individual with upper decile, upper quartile, median, lower quartile, lower decile, and mean salaries for a particular industry in a specific region. In addition, the EWC also published reports titled *Engineers' Salaries: Special Industry Report 1996*² and *Professional Income of Engineers*³.

*Engineering Technology Faculty Salary Survey*⁴, another national survey for engineering technology educators, has been conducted annually for the past 20 years by our school in cooperation with the Engineering Technology Council (ETC) and the Engineering Technology Division (ETD) of the American Society of Engineering Education (ASEE). The Engineering Technology Faculty Salary Survey provides salary data to participants in several formats: raw data by school code; summary of minimum, maximum, and average salaries by ranks; 13 year summary of the same data; averages by region; and averages by number of faculty.

The Engineering Workforce Commission of the American Society of Engineering Societies publishes *Engineers: A Quarterly Bulletin on Careers in the Profession*. The quarterly publication annually reports on the compensation of engineers.⁵

In addition to comparing your faculty salaries with national surveys, it is also important to look at national and local salaries of professionals within the specific industry or field of the faculty's expertise. This data can be found in local business newspapers or magazines. The school's or department's industrial advisors can also be a source for acquiring salary information from local industry. The comparison between industry and academia is critical because unlike some academic disciplines, most engineering technology educators have industrial experience and can easily return to industry if salaries in academia are too low. When salaries in industry are beyond the range of a school's faculty salary levels, the job of recruiting bright, new faculty into a school or program becomes extremely difficult, if not impossible. In some cases, schools are forced to offer new faculty higher salaries than current faculty, which can result in other problems.

Another factor to explore for building a case for salary compensation would be to review your undergraduate salary offers. The *National Association of Colleges and Employers (NACE) Salary Survey, April 1998*⁶ reports that the average salary ranges from \$35,705 to \$45,591 for engineering bachelor degrees and from \$52,190 to \$53,717 for engineering master degrees. Salary offers in the 90th percentile range from \$44,000 to \$50,000 for bachelors and from \$57,000 to \$66,000 for masters. Today, some salary offers to holders of bachelor degrees are equivalent or only slightly less than the current salaries of faculty members who have higher credentials and more years of experience. This can be a compelling argument for a case to support increasing your faculty salaries.

Today, institutions and schools are actively creating strategic plans to establish a mission, vision, shared values, responsibilities, expectations, and long term goals. In building a strong case to acquire additional faculty salary funds, make sure that your school mission, vision, or goals support your purpose of increasing salaries, and more importantly, link this motive to one or more of the institution's goals.

Your job as an administrator is to make the best possible case to the individuals who will ultimately decide whether to allocate funds to your school or program for the purpose of acquiring additional funds to increase faculty salaries. If, in fact, increasing your faculty salary levels is a key concern for your school or program, we suggest building an argument and presenting your concerns at every opportunity available. In other words, repeat your message clear, loud, and strong.

IV. Cash Compensation

Some institutions and/or schools have both base and cash funds. Base funds are those dollars that make up the base budget year after year. The base budget will normally increase slightly every year. Cash funds are temporary, and once spent, are gone. For the compensation of faculty, most administrators would prefer base funds; however, when base funds are not available to adequately increase faculty salaries, other ways of compensating or rewarding faculty should be considered.

Both base and cash funding can be used to support increases in faculty salaries. If base funding is short, perhaps a short-term solution would be to pay faculty with cash. Various ways of combining cash and base funds can be used to assist you in your efforts to increase your faculty's morale by showing appreciation for their hard work in terms of monetary rewards.

Cash bonuses established by the dean or program chair can be used to motivate faculty. Webster's definition of bonus is something given or paid in addition to the usual or expected.

We recommend that bonuses should be allocated based on goal accomplishment. Organizational goals are not normally achievable by one individual, so we also recommend that when considering bonuses, the team effort to achieve a desired goal should be rewarded equally and fairly. One theory used to explain the basic motivational concept in organizational behavior, the Equity Theory, indicates that individuals are concerned not only with the absolute amount of rewards for their efforts, but also with the relationship of the amount to what others receive.

V. Non-cash Compensation

There are many other ways to compensate faculty besides salary, bonuses, and rewards. Reducing faculty-teaching loads, which are normally heavy, might be highly valued by a faculty member. Release time to work on scholarly activities can also be seen as a reward which benefits both the faculty member and the school or program.

Special school grants can be established as a means of encouraging faculty to work on goals established by the school (i.e., innovative teaching grants, innovative research grants, innovative web course development grants, special assessment grants). Grant funds can be used as summer salary support, student support, release time support, etc.

In addition, special grants established for professional development opportunities for faculty, such as faculty travel to conferences, workshops, and seminars, can also be viewed as a valuable reward.

Financial incentive programs can be developed to encourage faculty to apply for grants and contracts. This is another way in which schools or programs can work towards their goals while encouraging faculty to participate in more scholarly activities. Our school's financial incentive program gives a portion of the indirect cost recovery funds to the principal investigator (PI) and the principal investigator's department. These funds are put into a special research and development account which then can be spent by the PI or the department as they see fit (i.e., travel, summer support, student assistants, etc). In addition, a major portion of salary savings, including benefits from grants and contracts, is returned to the department and faculty member research and development accounts.

VI. Rewards and Recognition Strategies

Recognition programs are an inexpensive way to show appreciation of faculty work. In contrast to most other motivators, recognizing the superior performance of a faculty member can cost little or no money. Recognition programs can take numerous forms. The best ones would use a

variety of forms to recognize individual and group accomplishments. Special occasions such as Honors Day or Faculty and Staff Convocations can be created to recognize these outstanding individuals.

Establishing special merit awards, incentive awards, or special opportunity awards are other ways to compensate faculty. Awards normally seen in academia honor excellence in research, teaching, service, and leadership. Since recognition is a potent motivator, we would recommend other awards be established (i.e., teamwork awards). Teamwork awards may include team members such as graduate or undergraduate students, research associates, and staff, such as technicians, professional administrators, and clerical staff. It is actually an excellent strategy to include the support group members in team award recognition since this encourages collaboration among different groups and tends to reduce the stress of rewarding one group of professionals, such as faculty, only. The use of appreciation letters, certificates and commendations are more examples of non-cash motivators.

VII. Taking Stock

Where do you go from here? First, assess your current compensation plan. If you don't have a plan, decide what your compensation goal for your school or program is. Review your institution's, school's, and department's mission and vision. See how your compensation goal aligns with the institution's goals.

Make salary comparisons with other institutions, professionals, and industry. Participate in national faculty salary surveys. Communicate with peer institutions and share faculty salary data. Use your industrial advisory boards to support your goal and assist you in finding salary information that will help build your case. Check your undergraduate salary offers. Focus on using the data that best demonstrates your salary needs.

Consider cash or non-cash compensation to supplement your faculty base increases. Develop special grants, faculty development opportunities, reduce teaching loads to encourage scholarly activities, and create incentive programs. Establish recognition programs and awards. Use appreciation letters, certificates and commendations to help motivate faculty, as well as staff.

Finally, building a case to convince higher administration that they should send extra dollars to your unit, school, or program can not be done overnight. You will need to continue to build your case and defend your position that it is in the institution's best interest to assist you as an administrator to attract, retain, and motivate your engineering technology faculty. The support of industries that hire your graduates is important. While you are working on building and defending your case, adopt some of the other non-cash compensation options mentioned in the paper. We would also like to encourage you to participate in our annual national engineering faculty salary survey.

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