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(corrected 10/30/09)

To: Richard Holder, Deputy Provost

From: Richard Coughlin, Department of Sociology

Subject: Voluntary faculty retirement incentives

This report presents the results of the exploratory research and data analysis I conducted from May-August 2009 related to the development of a policy for voluntary faculty retirement incentives.

I would like to acknowledge the following people for their helpful comments on various topics addressed in this report: Professors Craig White (Anderson School), Beverly Burris (Sociology), Richard Santos (Economics), David Brookshire (Economics), Don Coes (Economics), and Phil Ganderton (Economics). I take full responsibility for any errors in the analysis and recommendations.

I. Executive Summary

- Nationwide it is reported that increasing numbers of tenured faculty are choosing to work beyond the normal retirement age, resulting in a "graying" faculty; UNM faculty retirements have also declined in recent years

- Analysis of salary data and retirement benefits for UNM tenured faculty 59 years and older shows that it is feasible to offer a monetary incentive to move up retirement from one to three years that is equitable to the individual faculty member and which generates substantial budgetary savings for the University

- A tax-deferred incentive paid out in equal installments over 5 years would yield estimated savings from $5 million to $15 million in the first year, depending on how many faculty choose to accept the incentive. Over a three year period, estimated savings range from $11 million to $33 million

- Taxation of retirement incentives has significant implications for the cost of the program, so every effort should be made to design a program that has tax-deferred benefits

- A retirement incentive policy would facilitate renewal of the faculty through the recruitment of high-quality junior faculty and would help to advance the University's goal of diversifying the faculty

- As many as 300 assistant professor positions could be opened over three years by an effective retirement incentive program, with the actual number depending on how many faculty move up retirement and how soon vacated positions are filled

- Savings for the University occur only if faculty members elect to retire earlier than they would otherwise; incentives that are too small or are poorly designed run the risk of low participation with little or no long-term savings for the University

- Many faculty are apprehensive about retirement, most are not well informed about retirement issues, and nearly all would benefit from additional education about retirement benefits and advisement in weighing the costs and benefits of retirement.

- The most important factor influencing savings to the University is the proportion of eligible faculty who retire as a result of the incentive. Each tenured faculty member who moves up retirement by one year saves the University, on average, approximately $100,000 in the first year and $200,000 to $300,000 over three years

- A pro-active strategy is needed to effectively implement a retirement incentive plan. To maximize effectiveness, appointment of a faculty advocate responsible for outreach, peer advisement, and education is strongly recommended

II. The "graying" of the UNM faculty

Due to a change in federal law in the late 1980s, which ended mandatory retirement age for university faculty, many tenured faculty are choosing to work beyond—sometimes by many years— the normal retirement age. This has resulted resulting in a "graying" of faculties across the country, in which the age profile has become skewed toward older faculty. Moreover, the trend toward delayed retirement has been exacerbated over the past two years by the economic crisis and recession, which has added a significant dimension of uncertainty and anxiety to what is already often a difficult decision. Consequently, many universities are reporting a sharp drop in faculty retirements, in which faculty at or already above the normal age of retirement elect to continue to work.

UNM is no exception to this rule. Data provided by the Office of Faculty Contracts shows that as of May 2009 there are large numbers of full-time tenured faculty who are already above the normal age of retirement. In addition, there is an even larger cohort of faculty nearing retirement age who might be encouraged to retire early with appropriate incentives.

As shown in Table 1, there are 622 full-time tenured faculty at the main and branch campuses (excluding upper-level administrators on the main campus and all faculty in Health Sciences). Of these, 223 are at, above, or approaching normal retirement age. It is clear that older faculty members are disproportionately represented in tenured positions at UNM.

For example,

- 76 are currently 65 years or older (with $103,172 mean salary)

   Of which:

   - 58 are in the cohort 65-69 years (with $109,267 mean salary)
   - 9 are in the cohort 70-74 years (with $97,324 mean salary)
   - 9 are over 75 years ($87,245 mean salary)

- 147 are in the cohort 59-64 years (with $98,039 mean salary)

In addition, of full-time tenured faculty at or near retirement age (59 years and older):

- 82% are covered by the New Mexico Educational Retirement Board (ERB) plan; 18% are covered by other plans such as TIAA-CREF

- 63% are Male (with $108,492 mean salary)

- 37% are Female (with $84,724 mean salary)

- Although the data provided did not indicate race or ethnicity, impressionistic evidence suggests that minorities are underrepresented in these older age cohorts

III. Monetary retirement incentives

As a result of declining rates of retirement, many universities have implemented retirement incentive programs for tenured faculty. The AAUP reports that about one-half of colleges and universities nationwide have retirement incentive programs. The rate is highest among public research universities, which have taken a leading role in this area. This trend has accelerated over the past few years as a result of the economic crisis. It has been reported that some institutions with existing retirement policies have had to augment incentives to compensate for the dampening effects of the economic crisis.

Although resources did not permit a full survey of retirement incentive programs at other universities, data from the AAUP indicates a relatively wide range of monetary incentives across different institutions, from a low of less than one year's salary to a high of several years' earnings.

In this analysis the question of "how much incentive is enough" was approached from the standpoint of individual equity—that is, "fairness." A series of models was constructed to estimate how much would need to be contributed into a simple annuity to match the incremental cash benefit of one year's additional ERB credit, projected over an extended period of time. The core idea is that a faculty member should be able to receive a stream of income from a retirement incentive that is equal to the additional amount received from the ERB retirement plan, adjusted for the number of years retirement is advanced. In addition, the incentive should be able to deliver this income stream for the remainder of the faculty member's life (25 to 30 years is a reasonable estimate).

Although the examples reported below (and shown in Tables 2 through 4) are based on the ERB benefit plan, they should be broadly applicable to the smaller segment (18 percent) of senior faculty who are not covered by the ERB retirement plan.

The examples below are intended to be illustrative, and although every effort has been made to include an accurate representation of the variables, the results are only approximations. In interpreting the data, it is important to note various simplifying assumptions of the models:

- An annual salary of $100,000 is used as the baseline for a senior tenured faculty member (this is actually very close to the actual average salary)
- The costs to the university of the incentive are spread out over a five-year period (pursuant to the priority of achieving short-term budgetary savings)
- The projected increase in the value of the annuity matches the minimum cost-of-living adjustments of the ERB plan
- The retiree's courses would be covered on an interim basis (i.e., before a new assistant professor is hired) either by part-time faculty or graduate teaching assistants
- The retiree's salary is constant in the years immediately prior to retirement
- New tenure-track faculty would be hired at the assistant professor level with a base salary of $65,000 (plus 33 percent fringe benefits), and the cost of new hires would increase by 3 percent per year

The examples depict an "average" case in an attempt to provide a broadly accurate representation of how various incentives, under different tax conditions and rates of faculty participation, would impact the University's budget. The incentives in the examples are assumed to be approximately 65 percent (after taxes, if applicable, are deducted) of the faculty member's nine-month salary for each year retirement is moved up. This structure yields the best balance between equitable compensation for the faculty member and budgetary savings to the University.

A. Example 1: Incentives not subject to FICA and income tax deferred

This illustration shown in Table 2 assumes that the incentive is not subject to FICA or income tax. This assumption is probably not fully justified. Professor Craig White (Anderson School) reports that recent court rulings have determined that retirement incentives are subject to both employer and employee FICA taxes. Although this issue has not been completely decided, it would be prudent to include FICA taxation in projections involving monetary incentives.

B. Example 2: Incentives subject to FICA but income tax deferred

Table 3 shows the projections with FICA factored in. Although this raises the cost of the incentive, the impact on savings to the University is modest. This model represents the best alternative that is possible under current tax laws—although it requires that the incentives be delivered in a form that defers payment of state and federal income tax until such time as the funds are withdrawn by the retired person.

C. Example 3: Incentives with both FICA and income tax deducted

Monetary retirement incentives may also be subject to federal and state income taxes at the time incentive is offered (i.e., immediately on retirement). The income tax status of incentives involves somewhat complex interpretations of the tax code, and has been referred to Emma Rodriguez, Office of the University Counsel, for further analysis and advice.

Table 4 shows projections assuming both FICA and estimated income taxes deducted from the incentive. Although the cost to the university is significantly higher under these conditions, this approach could still yield large savings for the University. This model approximates paying the incentive as ordinary income.

IV. Non-monetary considerations

The non-monetary factors in faculty retirement decisions remain understudied. And unlike the purely financial considerations covered by the three examples described above, we can only speculate about other factors that play a role in the timing of faculty retirement. Impressionistic evidence suggests that a variety of considerations come into play: as loss of professional identity, loss of office space, reduced opportunities to engage in professional activities, health status, and various personal concerns all have been mentioned in conversations with senior colleagues at UNM.

This observation leads to two conclusions: (1) it is important that some degree of flexibility be built into a retirement incentive plan, particularly with respect to such things as the feasibility of continued opportunities to continue teaching on a part-time basis, access to office space, opportunity to complete research projects in progress, and participation in other aspects of university life after retirement; and (2) it is essential that a peer advisement function be established to assist prospective retirees in understanding, discussing, and evaluating the various non-monetary issues that might be possible to negotiate as part of a retirement package.

V. Budgetary implications

A tax deferred incentive paid out in equal installments over 5 years yields estimated savings from about $5 million to $15 million in the first year, depending on how many faculty choose to accept the incentive. If one-quarter of those eligible accept the incentive, first year savings will amount to about $5 million. If three-quarters participate, the first year savings could be as high as $15 million. These estimates assume that vacated positions are filled by part-time faculty and/or TAs for one year—typically the minimum time required to conduct a search for an assistant professor. Savings in faculty compensation could be further increased if replacement of retiring faculty is delayed by 2 to 3 years. However, these potential budgetary gains must be balanced against the University's needs to sustain healthy undergraduate and graduate programs.

Over a three year period, estimated savings range from $11 million to $33 million, again depending on the number of faculty who take advantage of the program. Over the full seven year cycle from the hiring of a new assistant professor to the tenure decision, total savings would be even greater.

It is important to note that total savings vary according to three main variables: (1) the rate of faculty participation in the incentive program; (2) the salary mix of retiring faculty; and (3) the length of time it takes to recruit new faculty. Estimated budgetary effects of these factors are summarized in Tables 5 to 8.

Additionally, there are specific ways in which the incentive policy might be implemented to achieve better overall results and deal more effectively with individual situations. Potential modifications include:

1. The option of mid-year (January) retirement could be offered or even encouraged as an alternative to the conventional retirement at the end of the academic year. Initially, mid-year retirements would allow the university to "capture" one-half year's salary in the current budget. Thereafter, the option of mid-year retirement might encourage some faculty to move up retirement by one semester rather than waiting until the end of the academic year

2. The time-frame for awarding incentives might be adjusted according to the faculty member's age and/or the number of years that retirement is moved forward. For example, for faculty over 70 years old incentives might be funded over a three-year

period instead of five years. For those under 65 years, the contributions might be extended to six or seven years. While neither of these adjustments would have much impact on the overall cost of the program—indeed, taken together they more or less cancel out one another's effects—such features might be perceived by faculty as being more equitable, thus improving the image of, and possibly the rate of participation in, the program.

3. A pro-active strategy could increase the take-up rate of the incentive plan. The single the most important factor influencing total savings to the University is the proportion of eligible faculty who retire as a result of the incentive. The potential benefits of maximizing faculty participation are clear: for example, each tenured faculty member who moves up retirement by one year saves the University, on average, approximately $100,000 in the first year and $200,000 to $300,000 over three years—even with a generous incentive given to the retiring faculty member and the timely recruitment of an assistant professor to fill the vacated position.

VI. Recruitment of new faculty

Positive results of increased retirements are not limited to salary savings for the university. Increased numbers of retirements will allow renewal of the faculty through the recruitment of high-quality junior faculty—a particular advantage for universities able to recruit faculty in the current academic labor market—and facilitate of the university's goal of diversifying tenure-track appointment in terms of gender, race, and ethnicity via these new recruitments.

The number of new faculty hiring opportunities that would be result from adoption of the retirement incentive model(s) is in the range of 300. Owing to the many variables and unknowns at the present time, this is only a rough estimate. The actual number of new faculty hires will depend on various factors, including:

- the number of faculty who choose to accept retirement incentives
- the length of time faculty positions remain unfilled
- the prioritization of new hires by the University vis-à-vis other institutional needs
- departments' success in recruiting new junior faculty

VII. Outreach and education

Informal research I have conducted over the past few months indicates faculty members are not well informed about retirement issues, many appear to be apprehensive about retirement, and nearly all would benefit from additional education about retirement benefits and advisement in weighing the costs and benefits of retirement. The reasons for this are not clearly identified, but there are several reasonable explanations. First, as a rule tenured faculty like their jobs and tend to want to remain in their positions for as long as possible. This leads to some aversion about making specific plans for retirement. Even for those nearing retirement, knowledge of the many financial details of retirement is limited—often extremely so. For example, many

faculty have only a general idea about how the ERB benefit plan operates, particularly with respect to the options for surviving spouse/partner benefits, the precise calculation of the net benefit (after taxes), and the rules governing cost-of-living adjustments. Although calculation of the simple benefit is straightforward (2.35% of the high five-year average times years of service), this is only the first step in gathering sufficient information for retirement planning. The calculation of tax effects, interaction with Social Security and other benefits, and the consequences of selecting among the three benefit options under the ERB plan, are time-consuming and can be quite challenging.

The decision to accept an incentive to retire earlier than planned adds a further complicating element to what is already a very sensitive issue for tenured faculty. Reports from other universities indicate that communications about retirement incentives are problematic when done through official channels such as with department chairs or deans. Faculty tend to be reluctant about divulging their thoughts and plans about retirement in a context that they feel might undercut their current position. Whether or not these concerns are well-founded, they may have real consequences for faculty who are already averse to making specific plans for retirement, and would likely exacerbate the existing problem of delayed faculty retirement.

Although assisting faculty with some of the simple questions about retirement planning is currently handled by Human Resources, some faculty have run into obstacles in this area. For example, recently a faculty member contacted Human Resources to review his retirement situation, and was informed that he could make an appointment only if he had already made the decision to retire. Whether or not this is standard policy, it highlights what perhaps is the most critical aspect of faculty retirement decisions: the need for active outreach, education, and peer advisement provided by an informed and neutral colleague, available to the prospective retiree free from arbitrary constraints over where, when, and how long questions about retirement need to be discussed.

Therefore, it is strongly recommended that the implementation of a retirement incentive policy including appointing a peer advocate drawn from the ranks of the senior tenured faculty with whom the range of issues relating to retirement may be discussed with the assurance of confidentiality. Selection of the right candidate for this position should, if possible, include input from the Faculty Senate leadership

VI. Comparison to the 1991-97 policy

It has been noted that the faculty retirement incentive policy in force from 1991-1997 produced only small savings. Although it is impossible to say why this is so, a likely explanation points to several basic flaws in the 1991-97 policy, including the following:

- Insufficient percentage of salary replaced (40 percent of salary up to a maximum incentive of $24,000)
- Reduction in the incentive for less than 20 years of service
- Lack of a specific deadline or time frame for retirement

- Lack of target group, allowing—even encouraging—faculty as young as 50 to retire and seek employment elsewhere
- Little or no outreach, education, or advisement offered to eligible faculty

The plan proposed here addresses each of these shortcomings and so should achieve much better outcomes, including substantially greater budgetary savings. It is, in short, a more coherent and logical plan compared to the previous policy.

Appendix

Guiding Principles

The following guiding principles were identified in a review of published studies conducted by the AAUP and others. It is clear that a voluntary retirement incentive program can realize costs significant savings in the short- to mid-term and serve as a useful tool for managing faculty resources. However, these benefits can be achieved only if the incentives are properly structured and implemented. The following principles were used in preparing this report.

- *The incentive program must be "win-win," benefiting both retiring faculty members and the university.* Faculty will benefit from a monetary reward for moving up the date of retirement. The university will benefit from cost savings beginning in the first year the program is established, enhancing the ability to recruit new faculty.

- *Incentives should be focused on changing the behavior of a target group*. Incentives should thus normally be limited to faculty who at or approaching normal retirement age (i.e., typically the cohort 59 years and older).

- *Incentives must be large enough to alter individual retirement decisions*. The goal should be to move up retirement by at least one semester, but ideally one, two, or even three years.

- *Incentives should be sufficient to offset individual "costs" and "unknowns" of retirement* such as (a) reduced income after retirement; (b) financial benefits of continuing to work; (c) cost of living adjustments missed for ERB plan retirees under age 65; and (d) various non-monetary consequences of retirement (e.g., loss of office space, travel funding, etc.)

- *Incentives should be predictable and stable.* "Stop-Go" programs lead faculty who miss one window of opportunity to postpone retirement in anticipation of another opportunity, even if this expectation is not entirely realistic. (The only exception to this rule may be at the start-up of a program.)

- *Incentives should be tailored as much as possible to individual circumstances.* The decision to retire is in many ways the flip side of the decision to accept (or decline) an offer of employment. A "one size fits all" retirement incentive program is likely to be both ineffective and more costly than necessary.

Table 1

Age Profile of tenured faculty near or above normal retirement age

Age	N=	% of all tenured faculty	Average salary
75+	9	4.0%	$87,245
70-74	9	4.0%	$97,324
69	8	3.6%	$75,068
67	8	3.6%	$96,571
66	19	8.5%	$95,318
65	23	10.3%	$126,474
64	14	6.3%	$103,368
63	25	11.2%	$84,158
62	28	12.6%	$113,176
61	19	8.5%	$99,298
60	26	11.7%	$91,944
59	35	15.7%	$98,155
Total	223		$99,897

Source: Office of Faculty Contracts (May 2009).

These data exclude upper-level administrators on the main campus and all Health Sciences faculty

Table 2

Illustration for $100,000 salary with retirement advanced 1 year
No FICA tax and income tax deferred

Year	(1) ERB benefit	(2) Annuity value	(3) Cost of incentive	(4) Salary savings with junior hire after 1 year	(5) Salary savings with junior hire after 2 years	(6) Salary savings with junior hire after 3 years	(7) Salary savings with no replacement
1	$2,350	$10,650	$13,000	$108,000	$108,000	$108,000	$108,000
2	$2,397	$21,466	$13,000	$33,550	$108,000	$108,000	$108,000
3	$2,445	$32,450	$13,000	$30,957	$30,957	$108,000	$108,000
4	$2,494	$43,606	$13,000	$28,285	$28,285	$28,285	$108,000
5	$2,544	$54,934	$13,000	$25,533	$25,533	$25,533	$108,000
6	$2,595	$53,489		$35,700	$35,700	$35,700	$121,000
7	$2,646	$51,964		$32,781	$32,781	$32,781	$121,000
8	$2,699	$50,357					
9	$2,753	$48,665					
10	$2,808	$46,885					
11	$2,865	$45,014					
12	$2,922	$43,049					
13	$2,980	$40,988					
14	$3,040	$38,828					
15	$3,101	$36,564					
16	$3,163	$34,195					
17	$3,226	$31,716					
18	$3,291	$29,124					
19	$3,356	$26,416					
20	$3,424	$23,588					
21	$3,492	$20,636					
22	$3,562	$17,557					
23	$3,633	$14,347					
24	$3,706	$11,000					
25	$3,780	$7,515					
26	$3,855	$3,885					
27	$3,933	$0					
28	$4,011	$0					
29	$4,091	$0					
30	$4,173	$0					
Total net savings				**$294,804**	**$369,254**	**$446,298**	**$782,000**

(1) Annual increase in ERB benefit for additional year(s) of work (2.35% for each year) assuming a 2% cost of living adjustment

(2) Value of simple annuity funded in five annual installments, minus the employee share of the FICA tax and yearly withdrawals equal to ERB benefit in column (1)

(3) Cost to the university of funding a net (after tax) incentive equal to about 65% faculty member's salary for each year retirement is moved up, plus employer share of FICA tax

(4) through (7) Total compensation savings to the university resulting from faculty member's retirement minus the cost of funding the retirement incentive and temporary or permanent replacement by an assistant professor recruitment

Table 2 (cont'd)

Illustration for $100,000 salary with retirement advanced 2 years
No FICA tax and income tax deferred

Year	(1) ERB benefit	(2) Annuity value	(3) Cost of incentive	(4) Salary savings with junior hire after 1 year	(5) Salary savings with junior hire after 2 years	(6) Salary savings with junior hire after 3 years	(7) Salary savings with no replacement
	$4,700	$21,300	$26,000	$95,000	$95,000	$95,000	$95,000
1	$4,794	$42,932	$26,000	$20,550	$95,000	$95,000	$95,000
2	$4,890	$64,901	$26,000	$17,957	$17,957	$95,000	$95,000
3	$4,988	$87,211	$26,000	$15,285	$15,285	$15,285	$95,000
4	$5,087	$109,868	$26,000	$12,533	$12,533	$12,533	$95,000
5	$5,189	$106,978		$35,700	$35,700	$35,700	$121,000
6	$5,293	$103,928		$32,781	$32,781	$32,781	$121,000
7	$5,399	$100,714					
8	$5,507	$97,329					
9	$5,617	$93,769					
10	$5,729	$90,027					
11	$5,844	$86,099					
12	$5,961	$81,977					
13	$6,080	$77,656					
14	$6,202	$73,129					
15	$6,326	$68,390					
16	$6,452	$63,432					
17	$6,581	$58,249					
18	$6,713	$52,832					
19	$6,847	$47,176					
20	$6,984	$41,273					
21	$7,124	$35,114					
22	$7,266	$28,693					
23	$7,411	$22,001					
24	$7,560	$15,029					
25	$7,711	$7,770					
26	$7,865	$0					
27	$8,022	$0					
28	$8,183	$0					
29	$8,346	$0					
30							
Total net savings				**$229,804**	**$304,254**	**$381,298**	**$717,000**

(1) Annual increase in ERB benefit for additional year(s) of work (2.35% for each year) assuming a 2% cost of living adjustment
(2) Value of simple annuity funded in five annual installments, minus the employee share of the FICA tax and yearly withdrawals equal to ERB benefit in column (1)
(3) Cost to the university of funding a net (after tax) incentive equal to about 65% of faculty member's salary for each year retirement is moved up, plus employer share of FICA tax
(4) through (7) Total compensation savings to the university resulting from faculty member's retirement minus the cost of funding the retirement incentive and temporary or permanent replacement by an assistant professor recruitment

Table 2 (cont'd)

Illustration for $100,000 salary with retirement advanced 3 years
No FICA tax and income tax deferred

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Salary savings with junior	Salary savings with junior	Salary savings with junior	Salary savings
Year	ERB	Annuity	Cost of	hire	hire	hire	
	benefit	value	incentive	after 1 year	after 2 years	after 3 years	with no replacement
1	$7,050	$31,950	$39,000	$82,000	$82,000	$82,000	$82,000
2	$7,191	$61,434	$39,000	$7,550	$82,000	$82,000	$82,000
3	$7,335	$91,364	$39,000	$4,957	$4,957	$82,000	$82,000
4	$7,482	$124,710	$39,000	$2,285	$2,285	$2,285	$82,000
5	$7,631	$158,573	$39,000	($467)	($467)	($467)	$82,000
6	$7,784	$154,113		$35,700	$35,700	$35,700	$121,000
7	$7,939	$149,411		$32,781	$32,781	$32,781	$121,000
8	$8,098	$144,460					
9	$8,260	$139,251					
10	$8,425	$133,776					
11	$8,594	$128,026					
12	$8,766	$121,993					
13	$8,941	$115,667					
14	$9,120	$109,039					
15	$9,302	$102,100					
16	$9,488	$94,840					
17	$9,678	$87,248					
18	$9,872	$79,315					
19	$10,069	$71,029					
20	$10,271	$62,381					
21	$10,476	$53,358					
22	$10,685	$43,949					
23	$10,899	$34,143					
24	$11,117	$23,926					
25	$11,339	$13,288					
26	$11,566	$0					
27	$11,798	$0					
28	$12,034	$0					
29	$12,274	$0					
30	$12,520	$0					
Total net savings				**$164,804**	**$239,254**	**$316,298**	**$652,000**

(1) Annual increase in ERB benefit for additional year(s) of work (2.35% for each year) assuming a 2% cost of living adjustment
(2) Value of simple annuity funded in five annual installments, minus the employee share of the FICA tax and yearly withdrawals equal to ERB benefit in column (1)
(3) Cost to the university of funding a net (after tax) incentive equal to about 65% of faculty member's salary for each year retirement is moved up, plus employer share of FICA tax
(4) through (7) Total compensation savings to the university resulting from faculty member's retirement minus the cost of funding the retirement incentive and temporary or permanent replacement by an assistant professor recruitment

Table 3

Illustration for $100,000 salary with retirement advanced 1 year
FICA tax deducted and income tax deferred

Year	(1) ERB benefit	(2) Annuity value	(3) Cost of incentive	(4) Salary savings with junior hire after 1 year	(5) Salary savings with junior hire after 2 years	(6) Salary savings with junior hire after 3 years	(7) Salary savings with no replacement
1	$2,350	$10,586	$15,064	$105,936	$105,936	$105,936	$105,936
2	$2,397	$21,337	$15,064	$31,486	$105,936	$105,936	$105,936
3	$2,445	$32,255	$15,064	$28,893	$28,893	$105,936	$105,936
4	$2,494	$43,342	$15,064	$26,221	$26,221	$26,221	$105,936
5	$2,544	$54,601	$15,064	$23,469	$23,469	$23,469	$105,936
6	$2,595	$53,149		$35,700	$35,700	$35,700	$121,000
7	$2,646	$51,618		$32,781	$32,781	$32,781	$121,000
8	$2,699	$50,003					
9	$2,753	$48,304					
10	$2,808	$46,517					
11	$2,865	$44,639					
12	$2,922	$42,667					
13	$2,980	$40,598					
14	$3,040	$38,430					
15	$3,101	$36,158					
16	$3,163	$33,781					
17	$3,226	$31,294					
18	$3,291	$28,693					
19	$3,356	$25,977					
20	$3,424	$23,140					
21	$3,492	$20,179					
22	$3,562	$17,091					
23	$3,633	$13,871					
24	$3,706	$10,515					
25	$3,780	$7,020					
26	$3,855	$3,380					
27	$3,933	$0					
28	$4,011	$0					
29	$4,091	$0					
30	$4,173	$0					
Total net savings				**$284,484**	**$358,934**	**$435,978**	**$771,680**

(1) Annual increase in ERB benefit for additional year(s) of work (2.35% for each year) assuming a 2% cost of living adjustment
(2) Value of simple annuity funded in five annual installments, minus the employee share of the FICA tax and yearly withdrawals equal to ERB benefit in column (1)
(3) Cost to the university of funding a net (after tax) incentive equal to about 65% of faculty member's salary for each year retirement is moved up, plus employer share of FICA tax
(4) through (7) Total compensation savings to the university resulting from faculty member's retirement minus the cost of funding the retirement incentive and temporary or permanent replacement by an assistant professor recruitment

Table 3 (cont'd)

Illustration for $100,000 salary with retirement advanced 2 years
FICA tax deducted and income tax deferred

Year	(1) ERB benefit	(2) Annuity value	(3) Cost of incentive	(4) Salary savings with junior hire after 1 year	(5) Salary savings with junior hire after 2 years	(6) Salary savings with junior hire after 3 years	(7) Salary savings with no replacement
1	$4,700	$21,172	$30,128	$90,872	$90,872	$90,872	$90,872
2	$4,794	$42,673	$30,128	$16,422	$90,872	$90,872	$90,872
3	$4,890	$64,509	$30,128	$13,829	$13,829	$90,872	$90,872
4	$4,988	$86,684	$30,128	$11,157	$11,157	$11,157	$90,872
5	$5,087	$109,202	$30,128	$8,405	$8,405	$8,405	$90,872
6	$5,189	$106,298		$35,700	$35,700	$35,700	$121,000
7	$5,293	$103,235		$32,781	$32,781	$32,781	$121,000
8	$5,399	$100,007					
9	$5,507	$96,608					
10	$5,617	$93,034					
11	$5,729	$89,277					
12	$5,844	$85,334					
13	$5,961	$81,196					
14	$6,080	$76,860					
15	$6,202	$72,317					
16	$6,326	$67,562					
17	$6,452	$62,587					
18	$6,581	$57,387					
19	$6,713	$51,954					
20	$6,847	$46,280					
21	$6,984	$40,358					
22	$7,124	$34,182					
23	$7,266	$27,742					
24	$7,411	$21,030					
25	$7,560	$14,040					
26	$7,711	$6,761					
27	$7,865	$0					
28	$8,022	$0					
29	$8,183	$0					
30	$8,346	$0					
Total net savings				**$209,164**	**$283,614**	**$360,658**	**$696,360**

(1) Annual increase in ERB benefit for additional year(s) of work (2.35% for each year) assuming a 2% cost of living adjustment

(2) Value of simple annuity funded in five annual installments, minus the employee share of the FICA tax and yearly withdrawals equal to ERB benefit in column (1)

(3) Cost to the university of funding a net (after tax) incentive equal to about 65% of faculty member's salary for each year retirement is moved up, plus employer share of FICA tax

(4) through (7) Total compensation savings to the university resulting from faculty member's retirement minus the cost of funding the retirement incentive and temporary or permanent replacement by an assistant professor recruitment

Table 3 (cont'd)

Illustration for $100,000 salary with retirement advanced 3 years
FICA tax deducted and income tax deferred

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				Salary	Salary	Salary	Salary
Year	ERB	Annuity	Cost of	savings with junior	savings with junior	savings with junior	savings
	benefit	value	incentive	hire after 1 year	hire after 2 years	hire after 3 years	with no replacement
1	$7,050	$31,758	$45,192	$75,808	$75,808	$75,808	$75,808
2	$7,191	$64,010	$45,192	$1,358	$75,808	$75,808	$75,808
3	$7,335	$96,764	$45,192	($1,236)	($1,236)	$75,808	$75,808
4	$7,482	$130,025	$45,192	($3,907)	($3,907)	($3,907)	$75,808
5	$7,631	$163,803	$45,192	($6,659)	($6,659)	($6,659)	$75,808
6	$7,784	$159,448		$35,700	$35,700	$35,700	$121,000
7	$7,939	$154,853		$32,781	$32,781	$32,781	$121,000
8	$8,098	$150,010					
9	$8,260	$144,912					
10	$8,425	$139,550					
11	$8,594	$133,916					
12	$8,766	$128,000					
13	$8,941	$121,795					
14	$9,120	$115,289					
15	$9,302	$108,475					
16	$9,488	$101,342					
17	$9,678	$93,881					
18	$9,872	$86,080					
19	$10,069	$77,930					
20	$10,271	$69,420					
21	$10,476	$60,538					
22	$10,685	$51,272					
23	$10,899	$41,612					
24	$11,117	$31,546					
25	$11,339	$21,059					
26	$11,566	$10,141					
27	$11,798	$0					
28	$12,034	$0					
29	$12,274	$0					
30	$12,520	$0					
Total net savings				**$133,844**	**$208,294**	**$285,338**	**$621,040**

(1) Annual increase in ERB benefit for additional year(s) of work (2.35% for each year) assuming a 2% cost of living adjustment

(2) Value of simple annuity funded in five annual installments, minus the employee share of the FICA tax and yearly withdrawals equal to ERB benefit in column (1)

(3) Cost to the university of funding a net (after tax) incentive equal to about 65% of faculty member's salary for each year retirement is moved up, plus employer share of FICA tax

(4) through (7) Total compensation savings to the university resulting from faculty member's retirement minus the cost of funding the retirement incentive and temporary or permanent replacement by an assistant professor recruitment

Table 4

Illustration for $100,000 salary with retirement advanced 1 year
FICA tax and income tax deducted

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Year	ERB benefit	Annuity value	Cost of incentive	Salary savings with junior faculty hire after 1 yr	Salary savings with junior faculty hire after 2 yrs	Salary savings with junior faculty hire after 3 yrs	Salary savings with no replacement
1	$2,350	$10,565	$24,210	$96,790	$96,790	$96,790	$96,790
2	$2,397	$21,294	$24,210	$22,340	$96,790	$96,790	$96,790
3	$2,445	$32,190	$24,210	$19,747	$19,747	$96,790	$96,790
4	$2,494	$43,255	$24,210	$17,075	$17,075	$17,075	$96,790
5	$2,544	$54,492	$24,210	$14,323	$14,323	$14,323	$96,790
6	$2,595	$53,038		$35,700	$35,700	$35,700	$121,000
7	$2,646	$51,504		$32,781	$32,781	$32,781	$121,000
8	$2,699	$49,887					
9	$2,753	$48,186					
10	$2,808	$46,396					
11	$2,865	$44,516					
12	$2,922	$42,541					
13	$2,980	$40,470					
14	$3,040	$38,299					
15	$3,101	$36,025					
16	$3,163	$33,645					
17	$3,226	$31,155					
18	$3,291	$28,552					
19	$3,356	$25,833					
20	$3,424	$22,993					
21	$3,492	$20,029					
22	$3,562	$16,938					
23	$3,633	$13,715					
24	$3,706	$10,356					
25	$3,780	$6,857					
26	$3,855	$3,215					
27	$3,933	$0					
28	$4,011	$0					
29	$4,091	$0					
30	$4,173	$0					
Total net savings				**$238,754**	**$313,204**	**$390,248**	**$725,950**

(1) Annual increase in ERB benefit for additional year(s) of work (2.35% for each year) assuming a 2% cost of living adjustment

(2) Value of simple annuity funded in five annual installments, minus the employee share of the FICA tax and yearly withdrawals equal to ERB benefit in column (1)

(3) Cost to the university of funding a net (after tax) incentive equal to about 65% of faculty member's salary for each year retirement is moved up, plus employer share of FICA tax

(4) through (7) Total compensation savings to the university resulting from faculty member's retirement minus the cost of funding the retirement incentive and temporary or permanent replacement by an assistant professor recruitment

Table 4 (cont'd)

Illustration for $100,000 salary with retirement advanced 2 years
FICA tax and income tax deducted

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
							Salary savings
Year	ERB	Annuity	Cost of	Salary savings with junior faculty	Salary savings with junior faculty	Salary savings with junior faculty	
	benefit	value	incentive	hire after 1 yr	hire after 2 yrs	hire after 3 yrs	with no replacement
1	$4,700	$21,130	$48,420	$72,580	$72,580	$72,580	$72,580
2	$4,794	$42,589	$48,420	($1,870)	$72,580	$72,580	$72,580
3	$4,890	$64,380	$48,420	($4,464)	($4,464)	$72,580	$72,580
4	$4,988	$86,510	$48,420	($7,135)	($7,135)	($7,135)	$72,580
5	$5,087	$108,983	$48,420	($9,887)	($9,887)	($9,887)	$72,580
6	$5,189	$106,075		$35,700	$35,700	$35,700	$121,000
7	$5,293	$103,008		$32,781	$32,781	$32,781	$121,000
8	$5,399	$99,775					
9	$5,507	$96,372					
10	$5,617	$92,792					
11	$5,729	$89,031					
12	$5,844	$85,083					
13	$5,961	$80,940					
14	$6,080	$76,598					
15	$6,202	$72,050					
16	$6,326	$67,290					
17	$6,452	$62,310					
18	$6,581	$57,104					
19	$6,713	$51,665					
20	$6,847	$45,986					
21	$6,984	$40,058					
22	$7,124	$33,876					
23	$7,266	$27,429					
24	$7,411	$20,712					
25	$7,560	$13,715					
26	$7,711	$6,429					
27	$7,865	$0					
28	$8,022	$0					
29	$8,183	$0					
30	$8,346	$0					
Total net savings				**$117,704**	**$192,154**	**$269,198**	**$604,900**

(1) Annual increase in ERB benefit for additional year(s) of work (2.35% for each year) assuming a 2% cost of living adjustment
(2) Value of simple annuity funded in five annual installments, minus the employee share of the FICA tax and yearly withdrawals equal to ERB benefit in column (1)
(3) Cost to the university of funding a net (after tax) incentive equal to about 65% of faculty member's salary for each year retirement is moved up, plus employer share of FICA tax
(4) through (7) Total compensation savings to the university resulting from faculty member's retirement minus the cost of funding the retirement incentive and temporary or permanent replacement by an assistant professor recruitment

Table 4 (cont'd)

Illustration for $100,000 salary with retirement advanced 3 years
FICA tax and income tax deducted

Year	(1) ERB benefit	(2) Annuity value	(3) Cost of incentive	(4) Salary savings with junior hire after 1 year	(5) Salary savings with junior hire after 2 years	(6) Salary savings with junior hire after 3 years	(7) Salary savings with no replacement
1	$7,050	$31,695	$72,630	$48,370	$48,370	$48,370	$48,370
2	$7,191	$63,883	$72,630	($26,080)	$48,370	$48,370	$48,370
3	$7,335	$96,571	$72,630	($28,674)	($28,674)	$48,370	$48,370
4	$7,482	$129,728	$72,630	($31,345)	($31,345)	($7,085)	$48,370
5	$7,631	$163,436	$72,630	($34,097)	($34,097)	($9,837)	$48,370
6	$7,784	$159,074		$35,700	$35,700	$35,700	$121,000
7	$7,939	$154,471		$32,781	$32,781	$32,781	$121,000
8	$8,098	$149,621					
9	$8,260	$144,515					
10	$8,425	$139,146					
11	$8,594	$133,503					
12	$8,766	$127,579					
13	$8,941	$121,365					
14	$9,120	$114,851					
15	$9,302	$108,028					
16	$9,488	$100,887					
17	$9,678	$93,416					
18	$9,872	$85,606					
19	$10,069	$77,447					
20	$10,271	$68,926					
21	$10,476	$60,034					
22	$10,685	$50,759					
23	$10,899	$41,089					
24	$11,117	$31,011					
25	$11,339	$20,515					
26	$11,566	$9,585					
27	$11,798	$0					
28	$12,034	$0					
29	$12,274	$0					
30	$12,520	$0					
Total net savings				**($3,346)**	**$71,104**	**$196,668**	**$483,850**

(1) Annual increase in ERB benefit for additional year(s) of work (2.35% for each year) assuming a 2% cost of living adjustment
(2) Value of simple annuity funded in five annual installments, minus the employee share of the FICA tax and yearly withdrawals equal to ERB benefit in column (1)
(3) Cost to the university of funding a net (after tax) incentive equal to about 65% of faculty member's salary for each year retirement is moved up, plus employer share of FICA tax
(4) through (7) Total compensation savings to the university resulting from faculty member's retirement minus the cost of funding the retirement incentive and temporary or permanent replacement by an assistant professor recruitment

Corrected 10/30/09

Table 5

Budgetary impact of incentive to advance retirement 1 year

Incentives subject to FICA with income tax deferred

Savings in first year

Faculty participation rate*

25 percent	$5,905,932
50 percent	$11,811,864
75 percent	$17,717,796
100 percent	$23,623,728

Savings over seven years

Faculty participation rate*	Years before position is filled			
	1 year	2 years	3 years	Not filled
25 percent	$15,859,983	$20,010,571	$24,305,774	$43,021,160
50 percent	$31,719,966	$40,021,141	$48,611,547	$86,042,320
75 percent	$47,579,949	$60,031,712	$72,917,321	$129,063,480
100 percent	$63,439,932	$80,042,282	$97,223,094	$172,084,640

*Proportion of the 223 tenured faculty 59 years or older as of May 2009

Table 5 (cont'd)

Budgetary impact of incentive to advance retirement 1 year

Incentives subject to FICA and income tax

Savings in first year

Faculty participation rate*

25 percent	$5,406,078
50 percent	$10,812,155
75 percent	$16,218,233
100 percent	$21,624,310

Savings over seven years

Faculty participation rate*	Years before position is filled			
	1 year	2 years	3 years	Not filled
25 percent	$13,310,536	$17,461,123	$21,756,326	$40,471,713
50 percent	$26,621,071	$34,922,246	$43,512,652	$80,943,425
75 percent	$39,931,607	$52,383,369	$65,268,978	$121,415,138
100 percent	$53,242,142	$69,844,492	$87,025,304	$161,886,850

*Proportion of the 223 tenured faculty 59 years or older as of May 2009

Table 6

Budgetary impact of incentive to advance retirement 2 years

Incentives subject to FICA with income tax deferred

Savings in first year

Faculty participation rate*

25 percent	$5,066,114
50 percent	$10,132,228
75 percent	$15,198,342
100 percent	$20,264,456

Savings over seven years

Faculty participation rate*	Years before position is filled			
	1 year	2 years	3 years	Not filled
25 percent	$11,660,893	$16,310,778	$20,106,684	$38,822,070
50 percent	$23,321,786	$32,621,555	$40,213,367	$77,644,140
75 percent	$34,982,679	$48,932,333	$60,320,051	$116,466,210
100 percent	$46,643,572	$65,243,110	$80,426,734	$155,288,280

*Proportion of the 223 tenured faculty 59 years or older as of May 2009

Table 6 (cont'd)

Budgetary impact of incentive to advance retirement 2 years

Incentives subject to FICA and income tax

Savings in first year

Faculty participation rate*

25 percent	$4,046,335
50 percent	$8,092,670
75 percent	$12,139,005
100 percent	$16,185,340

Savings over seven years

Faculty participation rate*   Years before position is filled

	1 year	2 years	3 years	Not filled
25 percent	$6,561,998	$10,712,586	$15,007,789	$33,723,175
50 percent	$13,123,996	$21,425,171	$30,015,577	$67,446,350
75 percent	$19,685,994	$32,137,757	$45,023,366	$101,169,525
100 percent	$26,247,992	$42,850,342	$60,031,154	$134,892,700

*Proportion of the 223 tenured faculty 59 years or older as of May 2009

Table 7

Budgetary impact of incentive to advance retirement 3 years

Incentives subject to FICA with income tax deferred

Savings in first year

Faculty participation rate*

25 percent	$4,226,296
50 percent	$8,452,592
75 percent	$12,678,888
100 percent	$16,905,184

Savings over seven years

Faculty participation rate*	Years before position is filled			
	1 year	2 years	3 years	Not filled
25 percent	$7,461,803	$11,612,391	$12,493,910	$34,622,980
50 percent	$14,923,606	$23,224,781	$24,987,819	$69,245,960
75 percent	$22,385,409	$34,837,172	$37,481,729	$103,868,940
100 percent	$29,847,212	$46,449,562	$49,975,638	$138,491,920

*Proportion of the 223 tenured faculty 59 years or older as of May 2009

Table 7 (cont'd)

Budgetary impact of incentive to advance retirement 3 years

Incentives subject to FICA and income tax

Savings in first year

Faculty participation rate*

25 percent	$2,696,628
50 percent	$5,393,255
75 percent	$8,089,883
100 percent	$10,786,510

Savings over seven years

Faculty participation rate*	Years before position is filled			
	1 year	2 years	3 years	Not filled
25 percent	----------	$8,021,533	$10,964,241	$26,974,638
50 percent	----------	$16,043,066	$21,928,482	$53,949,275
75 percent	----------	$24,064,599	$32,892,723	$80,923,913
100 percent	----------	$32,086,132	$43,856,964	$107,898,550

*Proportion of the 223 tenured faculty 59 years or older as of May 2009