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THE VALUE OF PHASED RETIREMENT

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ABSTRACT

This paper examines how phased retirement plans in higher education create value for both the institution and individual faculty, based upon evidence from the Survey of Changes in Faculty Retirement Policies and an in-depth case study of the University of North Carolina system. Faculty benefit by receiving improved opportunities for part-time work and by having the ability to make a smoother transition to retirement. The policy is clearly of great value to the 25 to 35 percent of UNC faculty who opt for phased over full retirement. The biggest payoff to the university is an increase in the odds that low-performing faculty will start the retirement process earlier. Universities also anticipate increased flexibility in managing faculty employment and compensation; phased retirement is most likely to be observed on campuses where a high percentage of faculty has tenure.

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Higher education faces a unique challenge in the coming years as faculty who are members of the baby boom generation near retirement. There will be one set of problems if the most senior faculty stay on too long and there will be a different set of problems if they all leave at once. With the elimination of mandatory retirement in 1994, universities and colleges are concerned about the possibility that many faculty will remain on the job past age 70. There are fears that this will have adverse consequences for teaching and research productivity and will lead to higher tuition to cover salaries and benefits. At the same time there is concern on many campuses that the age distribution of faculty is so heavily skewed toward the 50-and-over range that universities will face shortages in many fields by the end of this decade.

From a faculty perspective, there are serious challenges as well. Some faculty work longer than they would prefer simply because they are not yet eligible for full pension and Social Security benefits. The tenure system generally does not permit part-time work, making it difficult for older faculty to cut back on their work hours as they near retirement. In the private sector, many older workers take bridge jobs as they transition from full-time work into retirement. Although some faculty members have good options off campus, those in many disciplines will have difficulty finding opportunities to apply the teaching and research skills valued in academe to other types of work.

Phased retirement has been introduced on many campuses to help deal with these challenges. Under most phased retirement plans, faculty members resign their full-time position (and often give up tenure) in return for the right to

work half-time at half-salary for a given number of years. This paper examines how phased retirement creates value for both the university and the individual faculty member. The analysis begins in Section I with a summary of the theoretical arguments about how phased retirement should be able to help both sides of the academic labor market. The paper then turns to empirical evidence that sheds light on why universities and colleges offer phased retirement and why certain faculty accept it (and why others do not). To obtain some insights into the motivation for phased retirement, Section II analyzes the odds that a college or university will have a phased retirement policy. Are research universities more likely to offer phased retirement than four-year or two-year institutions? Are the odds of offering phased retirement linked to the age distribution of faculty? Section III is a detailed case study of the experience of the University of North Carolina (UNC) system with phased retirement. The discussion shows how many faculty opted for phased retirement, analyzes whether it accelerates or postpones full retirement, and summarizes evidence on its overall effectiveness from the perspectives of both faculty and management. Section IV concludes by summarizing which of the theoretical sources of value have been most important in practice.

I. SOURCES OF VALUE

Absent a phased retirement plan, tenured university professors have relatively few options for reducing their contracted work hours in the years before they retire. The tenure system at most universities does not allow for part-time

work on campus. Faculty can resign and contract to work for the university part-time, but such contracts are usually for no more than one year and, in a world where non-tenure track instructors provide teaching services at low cost, the financial terms of such contracts are often unattractive. Faculty with the capacity to consult or do research for the private sector or government could have attractive part-time opportunities off campus, but such opportunities may be extremely limited in some academic disciplines. Finally, even in today's wired labor market, jobs off-campus usually do not pop up after a few mouse clicks – search and negotiation costs have to be factored into any decision about whether seeking a part-time position is worth the effort.

Given these constraints, consider a phased retirement contract that allows a faculty member who has met certain age and years of service criteria to work half-time at half-salary. The value of such a contract is readily apparent for faculty who have greater earnings potential on campus than off. In purely financial terms, the promise to pay half a salary for part-time work is equivalent to an option to sell one's labor back to the university at that price. In the absence of phased retirement, faculty would have to either (1) negotiate on their own with department heads and deans when they retire to secure a commitment for part-time work or (2) look for work off-campus. To see the value of the phased retirement option, compare the hourly rate under each of these two choices to the hourly rate that faculty receive while working (which they also would receive under phased retirement). The financial option created by phased retirement will have no economic value for faculty who expect that they can negotiate a better

deal on their own with either the university or an off-campus organization. However, if the hourly rate on campus dominates the other two alternatives, then phased retirement provides greater earnings potential for individual faculty members.

In some situations, phased retirement will enable professors to earn more income while working fewer hours. This happens whenever the sum of one-half of the academic salary and all pension income exceeds the regular academic salary (or equivalently, if pension income exceeds one-half the academic salary). The ability to make more money and work less will be highly tempting to many, but such a combination does not automatically predict movement into phased retirement. When faculty near the age of eligibility for partial or full benefits under Social Security or a defined benefit pension, there is a tremendous incentive to work an extra year because annuity income increases considerably at those ages. In such a situation, there is an economic logic behind working full-time one more year, even if it means less income and more work than phased retirement.

Faculty covered by defined contribution pensions face considerable uncertainty about their pension income because the value of their pension hinges on outcomes in financial markets. Someone who fears that the value of the assets in his or her retirement account are likely to decline could choose to retire in order to lock in an annuity on favorable terms. Eligibility to receive pension income is generally tied to severance from the university. Phased retirement allows faculty to start receiving pension income while continuing to work, thereby

allowing them to make their labor supply and annuity receipt decisions with a greater degree of independence.

This discussion has emphasized financial benefits from phased retirement, but given the unique nature of academic labor markets, such a narrow focus would lead one to underestimate the true value of phased retirement for faculty. Most tenured faculty in their 50s and 60s have spent virtually their entire life in school. Phased retirement gives them extra time to collect information about retirement opportunities and potential bridge jobs outside academe before they exit the university. The psychological benefits of phased retirement will likely be substantial in many cases -- faculty receive access to colleagues and academic resources, the opportunity to continue to contribute in the classroom and in research, and the ability to still call themselves members of the faculty.

Even if phased retirement is a great deal for faculty, why should a university consider offering such a benefit? Half pay for half work may sound like a wash at first, but phased retirees will expect to continue to receive employee benefits, especially health insurance, along with their half-salary. So unless phased retirement can reduce labor costs along some other dimension or improve professor performance, one must question whether it has any value to universities.

The first question university chancellors and presidents should ask is what happens to faculty retirement rates? Phased retirement makes bridge jobs outside the university less attractive, leading faculty members seeking to reduce

work hours to stay with the university longer than they might have otherwise. However, it also creates an option for part-time work on campus where none previously existed, which will lead some faculty to enter phased retirement well before the time they would have fully retired. The one unambiguous effect of phased retirement is that it accelerates the date at which faculty start to cut back on their commitments to the university. It also is conceivable that under phased retirement they will stay on campus more years than they would have otherwise. For instance, a professor who might have fully retired at age 65 might choose to enter phased retirement at age 62 and work until age 67. Economic theory cannot predict whether the introduction of a phased retirement program will accelerate or decelerate the rate at which faculty totally sever their ties to the university. One would expect that faculty who have the option of phased retirement would start the retirement process earlier than those who do not have that option.

The second big question university leaders should ask is how will a phased retirement program affect the productivity mix of the faculty? The nightmare scenario is where top researchers use phased retirement as an opportunity to start a new business or an affiliation with another campus. The preferred scenario is where phased retirement gives unproductive faculty who have become jaded with academe but who are not yet eligible for full pension benefits a chance to exit gracefully. Phased retirement is most attractive to (1) faculty with the worst earnings opportunities off campus and (2) faculty who are least likely to be able to negotiate for themselves a satisfactory part-time salary

on campus after regular retirement. Assuming a positive correlation between productivity on campus and either a negotiated part-time wage on campus or the best wage opportunity off campus, this would imply that unproductive faculty would be more likely to enter phased retirement than highly productive faculty.

Given the manpower planning challenges facing university leaders that were noted in the introduction, phased retirement also will create value if it leads to improved personnel planning and economizes on adjustment costs associated with new hires and retirements. Under a formal phased retirement program, professors announce their intention to leave typically between two to five years in advance, a much longer time horizon than would be involved under regular retirement. This should improve succession planning and thereby reduce the odds of having unfilled positions or the likelihood of resorting to early retirement buyouts or layoffs. If provosts and deans decide to use the half-salary saved by phased retirement on non-tenure track instructors, there is the possibility of simple cost reduction as well.[1]

II. WHO OFFERS PHASED RETIREMENT AND WHY?

The most comprehensive source of information about phased retirement plans in higher education is the Survey of Changes in Faculty Retirement Policies (SCFRP), conducted in 2000 by the American Association of University

[1] Leslie and Janson (2004) offer a different perspective for the motivation of universities that offer phased retirement. Based on a series of interviews at different campuses, they conclude that universities start phased retirement because it "humanizes employee relations." They conclude that most of the benefits from phased retirement accrue to the individual faculty member, whereas the benefits to the institution appear less certain.

Professors with financial support from the TIAA-CREF Institute. The survey examined U.S. institutions of higher learning in all five Carnegie categories with 75 or more full-time faculty members. At the time of the survey, 27 percent of the responding institutions had a phased retirement program in place.[2] These programs had the following characteristics:

- Faculty in most programs (64 percent) must obtain administrative approval to participate.
- Most programs require faculty to reach minimum levels of age (75 percent) and years of service (73 percent) to be eligible for phased retirement. The modal age requirement is 55, but some programs are open to 50-year-olds whereas many others require participants to be at least 60. Programs typically require 10 or more years of service to be eligible.
- A minority of programs (21 percent) put a ceiling on age of eligibility, in most cases 62 or higher.
- Roughly two-thirds of the programs provide special financial benefits. In most cases the special benefit is full contribution to health insurance, although some institutions provide extra salary payments or extra retirement payments or credits.
- Most plans (60 percent) do not require professors to relinquish tenure before they enter phased retirement. Faculty members generally must lose their tenured status after three or five years in phased retirement.

[2] Ehrenberg (2003) summarizes the key features of the programs that were in place at that time.

One way to potentially better understand the motivation behind phased retirement plans is to compare the characteristics of universities which offer such plans to those which do not. It is reasonable to expect that the value of phased retirement to the institution should be a function of its mission. Doctoral institutions must be especially sensitive to the orderly replacement of aging faculty to be competitive for graduate students and research contracts. Presuming that phased retirement polices provide improved capacity to make long run plans for staffing, one would expect doctoral universities to be more likely to adopt such policies. In contrast, universities and colleges that focus on teaching, especially baccalaureate and 2-year institutions, have more flexibility in how they replace aging faculty members and thus may not value phased retirement as much. These patterns are borne out in the SCFRP data, as shown in Table 1. Phased retirement programs are most commonly observed among doctoral universities (35 percent). The percentage of masters and baccalaureate institutions with phased retirement plans is slightly lower (29 percent), whereas the percentage of two-year institutions is considerably lower (16 percent).

The age and tenure structure of the faculty also should have some bearing on the value of phased retirement to the institution. Colleges and universities with a high percentage of faculty who are near retirement have much more to gain from successfully managing the transition to retirement than those with relatively fewer faculty in their 50s and 60s. There is no systematic relationship between the age structure of the faculty and the adoption of phased retirement policies across the campuses in the SCFRP sample (Table 1). Phased

retirement policies are most prevalent among schools with 30 to 39 percent of faculty in the 55-and-over age bracket and least prevalent among schools with fewer than 30 percent of faculty in this age bracket, as expected. However, phased retirement policies are least common among schools with 40 percent or more of faculty in this age bracket, which runs contrary to expectations.

Holding age structure constant, tenure has an obviously large impact on the degrees of freedom the institution has available to manage an aging workforce. Institutions with a high percentage of tenured faculty have much less flexibility than those with relatively low percentages of tenured faculty. To the extent that tenured faculties are also highly compensated faculties, phased retirement plans also generate greater opportunities for cost savings. Empirically, there appears to be a strong relationship between the percentage of full-time faculty with tenure and the adoption of phased retirement policies. Table 1 shows that the percentage of schools with phased retirement steadily increases with the percentage of full-time faculty with tenure. Phased retirement policies are in place at only 16.5 percent of the schools where less than 40 percent of the faculty have tenure. In contrast, phased retirement is available at 25.3 percent of the schools where the tenure ratio is 40 to 49 percent, at 30.2 percent of the schools where the tenure ratio is 50 to 69 percent, and 33.7 percent of the schools where the tenure ratio is 70 percent or higher.

The fit between a phased retirement plan and the pension plan must be assessed carefully. Defined benefit plans are a poor fit with phased retirement for two reasons. First, the pension payment under defined benefit plans is a

function of final average salary, which means that a move to a half-time job on campus is also a move to as much as a 50 percent cut in one's pension (unless the retiree can start receiving the annuity upon entering phased retirement or a special exemption for phased retirees can be created in the benefit formula). Second, the formulas for most defined benefit plans are set up in such a way that the present value of the pension annuity is maximized at the time the individual becomes eligible for full retirement benefits. The pension-based incentives facing these individuals for retirement are extremely powerful and are likely to reduce the value of retirement-management policies to the university. Phased retirement plans are likely to be a better fit on campuses with defined contribution plans because they offer managers a mechanism to productively influence retirement decisions. The data in Table 1 show a strong relationship between type of pension plan and the adoption of phased retirement plans. Phased retirement is available at 38 percent of schools which exclusively have a defined contribution plan, versus 19 percent of schools which exclusively have a defined benefit plan.

Private colleges and universities are likely to have more degrees of freedom to adopt phased retirement plans than their public counterparts. Public colleges and universities tend to be less autonomous, facing some degree of oversight from state government. In some states, public institutions are part of a statewide system, which would have mixed effects on the odds of adopting a phased retirement plan. On the one hand, there would be greater transactions costs associated with adopting a new policy in a statewide system than a single

campus. On the other hand, a successful launch of a statewide plan would lead to earlier adoption on campuses that left on their own would not have adopted a plan. Further, private schools may have such an advantage in dealing one-on-one with individual faculty about their compensation and workloads that they may have little need for a phased retirement policy. In the SCFRP data in Table 1, there is very little difference in the odds of having a phased retirement plan between public and private institutions.[3]

The adoption of phased retirement policies is also likely to reflect the management style of the organization. Institutions that have decided to take active steps to manage the age structure of their faculty are likely to consider a variety of steps, rather than focus on a single policy. If true, one would expect campuses that have phased retirement policies to also have taken other steps, including seminars on retirement planning, financial incentives for early retirement, and targeted buyouts. These patterns are born out in the SCFRP data, as shown in Table 1. Phased retirement plans are available in 29.2 percent of the schools that offer retirement planning seminars or programs, in contrast to 11.6 percent of schools that do not offer such programs. Phased retirement policies are in place in 31.9 percent of the schools that offered financial incentives for retirement since 1995, versus 22.7 percent of the schools that did not offer such incentives. Phased retirement is available at 32 percent of the schools that offered buyouts to faculty since 1995 (either on a college-by-college

[3] Palmer, Flusche, and Johnson (2004) discuss the process through which a private university (Syracuse) adopted its phased retirement plan.

or case-by-case basis), in contrast to 24 percent of the schools that did not offer buyouts.

The simple comparisons made in Table 1 could be misleading. For instance, it is well known that the tenure ratio is much lower at baccalaureate and two-year schools than at doctoral and masters level institutions. Probit analysis is a tool that can be used to control for additional variables. It is very much like much like multiple regression analysis, except that is designed for situations where the dependent variable (odds of having a phased retirement program) is measured in binary categories (either you have a phased retirement plan or you do not have one). Table 2 reports the results of a probit analysis of the odds that a campus will have a phased retirement plan, using the variables from Table 1 along with number of full-time faculty. The number of full-time faculty is included in the analysis to determine whether there are economies of scale involved with developing and implementing phased retirement plans. If the costs of developing a phased retirement plan increase less rapidly with size than the benefits, one would expect that small schools would be less willing than large schools to adopt the plans.

In the probit analysis, three variables stand out as significant predictors of the odds that a campus will have a phased retirement plan. Institutions that exclusively offer a defined contribution plan have a 23 to 24 percentage point greater probability of offering phased retirement than schools that offer defined benefit plans. This reflects both the poor fit between defined benefit plans and phased retirement policies as well as the possible use of phased retirement for

strategic human resource management on campuses that only offer defined contribution plans.[4]

Schools with a large percentage of tenured faculty are much more likely to have phased retirement plans than schools with a relatively small percentage of tenured faculty. At the extreme, a school where all faculty have tenure would have a 38 to 40 percent greater chance of having a phased retirement plan than a school where none have tenure. Percentage of faculty with tenure is strongly correlated with Carnegie categorization, so the analysis was repeated by estimating separate probit models for each Carnegie class (these results are not reported in Table 2; they are available from the author upon request). The decrease in sample size makes these results more fragile, but percentage tenured was still statistically significant at or near the p=0.10 threshold in all levels of institutions except two-year institutions without faculty ranks. Note that whereas there is a significant relationship between the odds of offering phased retirement and percentage of faculty with tenure, there is no relationship between the odds of offering phased retirement and Carnegie class once one controls for percentage of faculty with tenure.[5]

Phased retirement plans are much more likely to be in place on campuses which followed a management strategy of actively managing faculty retirement.

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[4] Pencavel (2004) finds the same thing. His model differs in that phased retirement and other retirement policies are jointly determined, which leads him to use a different set of control variables.

[5] This can be easily explained by the strong correlation between Carnegie class and the tenure ratio. In Carnegie I institutions, if one takes simple unweighted averages across schools, 64 percent of faculty have tenure in the average school. This falls off to 54 percent in IIA, 46 percent in IIB, 45 percent in III, and 32 percent in IV.

Schools that have offered retirement planning seminars are 12 percent more likely to have phased retirement plans than schools that have not offered such seminars. Schools that have offered financial incentives for retirement before age 70 are 10 percent more likely to have phased retirement plans than schools that have not offered such incentives. There is no significant relationship between buyouts by college or individual and the odds of having a phased retirement plan. Public institutions have a 10 percentage point greater probability of having a phased retirement plan than private institutions. This effect is statistically significant at the 6 to 10 percent level, a bit below the standard threshold used in social science.

There was no evidence in the probit analysis of economies of scale in the offering of phased retirement plans. There also was no relationship between the age structure of the faculty and the odds of having a phased retirement plan. This conclusion was robust across a number of other measures of age structure (e.g., percentage above 60, percentage below 50).

To sum up, this discussion shows that phased retirement plans have not been cropping up on a random basis. There is clear evidence that campus leaders have carefully considered preexisting conditions such as type of retirement plan and the percentage of the faculty with tenure. The fact that campuses with a high percentage of faculty members with tenure are most likely to have phased retirement plans (as well as retirement planning seminars and offers of financial incentives for retirement)[6] implies that phased retirement is

[6] The percentage of faculty with tenure is 51.5 percent at schools with retirement planning workshops, versus 43.5 percent at schools without such workshops.

being viewed as a tool to give management more flexibility to manage a difficult-to-manage workforce.

III. PHASED RETIREMENT IN THE UNC SYSTEM

The percentage of faculty in the UNC system who are age 50 or higher has increased considerably in the 1980s and 1990s, following national trends.[7] In 1996 UNC President C.D. Spangler appointed a committee to study the possible need for early retirement programs. Because the university system was predicted to add 40,000 students in the first decade of the 2000s, the committee concluded that there was no need for an early-retirement program designed to reduce the number of faculty members above a given age threshold. Instead, they recommended that the UNC system consider a phased retirement program that would moderate the aging of the faculty without increasing costs.

The Board of Governors of the UNC system approved a five-year trial program in 1998 that permitted half-time work for half the final academic salary. No special payments or subsidies were provided for selection into the program. The purpose of the program was "to promote renewal of the professoriate in order to ensure institutional vitality and to provide additional flexibility and support for individual faculty members who are nearing retirement" (*UNC Policy Manual,* 300.7.2.1 [G]). The program had three major goals:

1. Better personnel planning – institutions will be able to better anticipate position openings and make replacement plans

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The tenure ratio is 52.6 percent on campuses that have offered financial incentives, versus 48.2 percent on schools that have not offered such incentives.

[7] This discussion borrows heavily from Ghent, Allen, and Clark (2001).

2. Enhanced recruitment and retention – an additional benefit to faculty should help in this regard
3. Increased quality of faculty – institutions will be able to fill faculty positions while retaining the skills and knowledge of experienced faculty

Each of the 15 campuses in the UNC system that grant tenure was required to implement a phased retirement program.[8] To be eligible for the program, faculty must be tenured. When the program was launched, faculty also had to be age 50 with 20 years of service or age 60 with 5 years of service at the same institution. The criteria are now 50 years of age with 5 years of service at the current institution. Each campus was allowed to select the length of the contract for its faculty; however, the program required a minimum length of one year and a maximum length of five years. Twelve of the 15 institutions chose a three-year phased retirement contract, two institutions chose a two-year contract, and one campus chose a five-year phased retirement contract. Although launched as a five-year pilot, the program is now permanently in place.

Individuals considering entering the program negotiate their half-time duties with their department chairs prior to accepting phased retirement. Duties could be performed evenly across both semesters or the individual could work full-time one semester and have no specific assigned duties the next semester. They may elect to start receiving pension benefits after entering phased retirement. If they begin their retirement benefits, they are eligible for the same health insurance as active employees. Since 1971, newly hired faculty in the

[8] The NC School of the Arts is also a member of the UNC system, but it does not award tenure.

UNC system had the ability to choose between the defined benefit plan designed for teachers and state employees or a variety of defined contribution plans. Faculty hired in earlier years are covered by the defined benefit plan.

Robert Clark, Linda Ghent and I have studied the phased retirement plan of the UNC system using the annual faculty censuses that each campus submits to the Office of the President. These are the employment records for all faculty employed as of September of the specified year. Information on each person includes age, hire date, rank, gender, race, tenure status, annual salary, and type of pension plan. The annual records are linked across years so we are able to determine whether an individual remains in his or her faculty position from one year to the next. The census data for the years 1994 until 2003 are employed in this study. The analysis is limited to faculty members who were eligible to enter the phased retirement program. This paper briefly summarizes the key findings of our earlier papers and then reports new evidence on the experience faculty and department heads have had with phased retirement.

In the three years prior to the introduction of phased retirement, the retirement rate from UNC institutions among eligible faculty age 50 averaged 8.7 percent (see Table 3). After the introduction of the new retirement program, the total retirement rate (full retirement plus phased retirement) increased to 10.4 percent in 1997-98, 11.3 percent in 1998-99, and 10.4 percent in 1999-2000[9]. The percentage of faculty selecting phased retirement was 3.2 in 1997-98, 2.3 in 1998-99, and 3.0 in 1999-2000. The full retirement rates were 7.2 percent in

[9] The retirement rates represent the percentage of eligible faculty in census year t who were retired in census year t+1.

1997-98, 9.0 percent in 1998-99, and 7.4 percent in 1999-2000. During these years, phased retirees represented between 20 and 31 percent of all retirements from the UNC system. In absolute numbers, about 70 faculty entered the phased retirement program each year while around 225 fully retired.

The percentage of faculty entering full and phased retirement began to decline in 2000-01, which is the same time that the stock market began to drop. From 1999-2000 to 2002-03 the full retirement rate had fallen by more than half to 3.3 percent. Over the same period, the phased retirement rate had fallen by a third to 2.0 percent. In the 2000s, phased retirement accounted for 35 percent of total retirement. In absolute numbers, 71 faculty entered the phased retirement each year in the 2000s while 130 fully retired.

Table 4 shows how phased and full retirement rates vary by age in the 1990s. In most years, the full retirement rate increases steadily with age, a pattern consistent with previous research. A similar pattern holds for phased retirement in 1997-98, with more faculty age 70 and over selecting phased retirement than full retirement. In 1998-99 and 1999-2000, the phased retirement rate rises with age through the early to mid-60s, but then declines. In all likelihood the very large response of the 70 and over group in 1997-98 reflects a constrained demand for phased retirement at the time it was implemented.

Ghent, Allen, and Clark (2001) and Allen, Clark, and Ghent (2003) conducted an analysis of how those entering phased retirement differed from those who continued working full-time and those who entered full retirement.

The following are the key findings of those two studies regarding the characteristics of those most likely to enter phased retirement:

- Those entering phased retirement were much more likely to be employed at masters and baccalaureate universities than at doctoral universities. This may reflect differences in teaching loads and a tendency to focus on teaching loads in negotiating duties under phased retirement. Faculty who teach eight courses a year can buy a lot more free time by going half-time than faculty who teach four courses a year. It is also possible that faculty on the doctoral campuses (NC State and UNC-Chapel Hill) have more opportunities for bridge jobs off campus.
- Faculty who are covered by the defined benefit plan are much more likely to enter phased retirement than those who selected defined contribution plans. This likely reflects the strong incentives to retire at the age of eligibility for full pension benefits, and may be influenced by Social Security as well. Reduced earnings during phased retirement do not adversely affect retirement benefits for faculty who elected the defined benefit plan.
- The odds of entering phased retirement by age map closely to the odds of entering full retirement by age; in both cases, there is are significant upswings in retirement odds at ages 62 and 65.

Faculty perspectives

Why do faculty enter phased retirement? The Office of the President of the UNC system conducted surveys of faculty in phased retirement in 1998 and 2003 to address this question. The reason given by most faculty (60 percent in the 1998 survey and 69 percent in the 2003 survey) is that they wanted to "gradually transition into retirement." Very few planned to "pursue other employment" (6 percent in 1998 and 1 percent in 2003), whereas a modest share planned to "pursue other interests" (18 percent in 1998 and 9 percent in 2003). The remainder cited other factors, including health, changing university policies (including post-tenure review), and inability to afford full retirement.

More insight can be obtained when one looks at how faculty entering phased retirement changed their allocation of time to university and other activities. Table 5 summarizes how faculty changed their on-campus workloads after entering phased retirement. The average number of courses taught per year dropped by 44 percent from 4.3 to 2.4. In most individual cases, faculty loads dropped by exactly 50 percent, but a few faculty had equal or even greater teaching loads, either because they were leaving administrative posts or because they cut back on time for research and service. Most faculty (60 percent) worked at the university both academic semesters.

Going beyond teaching, the biggest change in time allocation on campus involved a significant cutback on administrative activities. Among the 2003 phased retirees who responded to the survey, 32 percent had an administrative appointment. Across the entire sample, time allocated to administration fell from

24 percent on a full-time basis before phased retirement to 10 percent on a part-time basis after phased retirement. Faculty spent about the same percentage of their time on public service and extension activities before and after entering phased retirement. There was a slight increase in the percentage of time allocated to research, but total time allocated to research dropped significantly (28 percent of time on a full-time basis to 30 percent of time on a part-time basis).

With their on-campus workload reduced by 50 percent, how do faculty reallocate their time? Roughly two-thirds of the sample (67.7 percent) report spending more time in activities with friends, family, and community. A substantial share (42.7 percent) report spending more time "engaged in research or other creative or scholarly activities," spending 16.9 hours per week on such activities. Exactly one-third of the sample report spending more time on volunteer activities and family assistance, spending 7 hours a week. Only 22 percent report spending more time working for pay away off-campus (including self-employment) and these individuals spend 11.5 hours per week working. Phased retirees also spent more time on civic activities, taking classes, travel, and health care.

Faculty almost always begin receiving pension benefits upon entering phased retirement. In the 1998 survey, all faculty entering phased retirement started receiving benefits, whereas in 2003, 90.5 percent started receiving benefits. The decision to start receiving Social Security as well largely depends on age. In the 2003 survey, 42 percent started receiving Social Security and

those individuals were considerably older (68.7 years) than those who postponed Social Security or were ineligible (62.4 years).

In the 2003 survey, faculty were asked to estimate what percentage of their earnings in their last year of university employment was replaced by pension benefits (excluding Social Security). There was no small amount of noise in the responses, including a value of zero for a person who claimed to be in the defined benefit pension plan with 30 or more years of service. The raw mean response was a replacement rate of 39.2 percent. If one trims all cases from the sample where the estimated percentage was below five (almost all of which claim 25 years or more of service), the mean replacement rate becomes 46.0 percent.

Faculty in phased retirement came fairly close to maintaining their total level of income. For the average respondent in the 2003 survey, combined income from pensions, Social Security, and phased retirement equaled 90 percent of university earnings before entering phased retirement. Almost half (42 of 86 respondents) reported that they had replaced 100 percent or more of their income. The overwhelming majority (95 percent) said that their combined income was about what they expected before entering phased retirement.

With nearly the same income and a 50 percent reduction in work hours, one would expect most faculty entering phased retirement to be very satisfied with the arrangement. In 1998, 80 percent said they were pleased with phased retirement, 17 percent said they were somewhat pleased, and 3 percent said they were not pleased.

In 2003, 60 percent strongly agreed that they were “pleased with my participation in the Phased Retirement Program and would make the same decision again,” 33 percent agreed, 6 percent disagreed, and 1 percent strongly disagreed. In 1998, 89.7 percent said they would recommend the phased retirement program to their colleagues. In 2003, 59 percent strongly agreed that they “would recommend the Phased Retirement Program to my colleagues,” 30 percent agreed, 6 percent disagreed, and 5 percent strongly disagreed.

Despite high overall levels of satisfaction, some areas of contention were revealed in the 2003 survey. One set of comments focused on the loss of on-campus amenities, including a private office, access to parking, and ability to teach summer school. Others reflected a desire to continue in phased retirement over a longer time period (usually five years instead of three). Issues concerning health care coverage (including a plan that enabled employees to use pretax income to pay for healthcare) were raised by about 10 percent of the sample. Lastly, a few individuals seemed to have problems adjusting to a world in which they were no longer full-time faculty, as reflected by comments such as “It's the same thing as committing suicide” and “You will be taken advantage of constantly and consistently.”

Faculty currently working in the UNC system that are age 50 or above have a strong interest in pursuing phased retirement in the future. In a separate survey conducted in fall 2003, 36 percent of those responding said that they planned to enter phased retirement. This matches almost exactly with the ratio

of retiring faculty who entered phased retirement (as opposed to full retirement) so far in the 2000s.

Managerial perspective

The most basic question for top management in academe is whether phased retirement makes faculty leave earlier or stay longer. Table 3 showed an increase in the rate at which faculty left full-time employment after the introduction of phased retirement. With 2.8 percent of faculty entering phased retirement and a decline in the full retirement rate of 0.8 percent in the 1990s, one might reasonably infer that most of the people entering phased retirement would have continued working if the option had not been available. Ghent, Allen, and Clark (2001) examined this issue more rigorously using a probit analysis of data for the two years before and after the introduction of phased retirement. They rejected the hypothesis that there was a stable model that could explain both forms of retirement over this four-year period. In other words, the characteristics that predict entry into full retirement in 1995-97 do not predict entry into full and phased retirement in 1997-99. Ghent et al could not reject the hypothesis that there was a stable model of full retirement over the same period. Equivalently, the characteristics that predict entry into full retirement in 1995-97 predict entry into full retirement equally well in 1997-99. These results imply that phased retirees more closely resemble full-time workers than fully retired individuals.

With the 2003 survey of phased retirees, a more straightforward approach can be employed – simply ask the phased retirees what they would have done if

the plan had not been available. When asked if they had not chosen to enter phased retirement, the overwhelming majority (84 percent) said they would have continued to work full-time. Phased retirees say they would have worked an average of 3.6 more years if the program had not been available. On campuses where the phased retirement contract lasts three years, phased retirees say they would have worked full-time for 3.5 more years, versus 4.2 more years of full-time work on campuses where phased retirement contracts are five years.

One further consideration from a management standpoint is that not all phased retirees work part-time for the maximum time allowed. In the 2003 survey, 11 percent say they intend to fully retire before the end of their contract. Data on the actual duration of phased retirements are not available at this time.

Looking across all the evidence assembled, it is quite clear that phased retirement leads faculty to cut back on their workload well before the time they would have fully retired. To determine whether this is beneficial to the university, one must consider how this decreased contribution by senior faculty affects productivity and cost.

Allen, Clark, and Ghent (2003) explored the productivity issue by examining how two different measures of productivity were related to the relative odds of full retirement, phased retirement and continued full-time work. The first measure is the average pay increase received in the three previous years. This is the most logical proxy measure for performance in the late 1990s because faculty pay raises were based entirely on merit during that period. The other measure is academic rank. Among tenured faculty in a relatively senior age and

tenure bracket, full professors have been judged by their peers, department heads, and deans as more productive than associate or assistant professors.

The introduction of phased retirement increased the rate at which low performing faculty separated from the university. Consider two otherwise identical professors, one who received an average pay raise of eight percent and one who received an average pay raise of zero (the mean pay raise was 4 percent with a standard deviation of 4 percent, so this is not an unreasonable spread in the last half of the 1990s). Before phased retirement was introduced, there was a 6.0 percent chance that a professor receiving eight percent raises would retire. After the launch of phased retirement, the odds changed to a 5.9 percent chance of full retirement and a 1.7 percent chance of phased retirement, for a combined increase in retirement odds of 1.6 percent. Compare this to the case of a professor receiving no raises. Before phased retirement was available, this professor had a 12.0 percent chance of full retirement. After phased retirement the full retirement odds increased to 10.3 percent and the phased retirement odds were 4.3 percent, an overall retirement rate of 14.6 percent, an increase of 2.6 percent. Retirement probabilities went up for both, but they went up more for the least productive professors. There was a similar pattern in the change of retirement odds for full, associate and assistant professors.

The response of faculty to the introduction of phased retirement varied with the mission of the institution. Phased retirement generated a much greater response on campuses where the main mission is teaching than where the mission also included research. Allen, Clark, and Ghent (2003) found, controlling

for other factors, a phased retirement rate of 1.6 percent on the two Research I campuses. This is much higher than the rates elsewhere: 4.0 percent on doctoral campuses, 3.9 percent on masters campuses and 3.2 percent on baccalaureate campuses. This likely reflects the fact that phased retirement provides a greater increase in free time on campuses with heavy teaching loads. Full retirement rates also are lower in research-oriented than teaching-oriented campuses, possibly reflecting the greater concentration of PhDs who need to work additional years to fully leverage their investment in human capital.

What impact does phased retirement have on an academic department? So far the analysis points to earlier exits of faculty who are past their prime. But at the micro level of an academic school, college, or department, the full answer depends upon how many faculty elect to enter phased retirement, how much of their salary line gets returned to the unit, and how difficult these faculty are to replace. With only two to three percent of eligible faculty electing to enter phased retirement in any year, most units are likely to have no more than one or two persons on phased retirement at any point in time. When only one person in the unit enters phased retirement, the savings of half a salary generally is not enough to fund a new position -- and of course there is no guarantee that the salary savings will be returned to the unit. Looking across a school or college, deans have the opportunity to fund new hires in some departments, creating the opportunity for growth and renewal.

Even when funds are returned to the department, close substitutes for the services provided by tenured faculty are not always readily available. Some

campuses are located far away from metropolitan areas and have relatively few options for adjunct or part-time faculty. Substitutes are more likely to be available for faculty teaching courses taken by freshmen and sophomores than for courses taken by upperclassmen and graduate students. Adjunct faculty can help on the teaching dimension, but are unlikely to contribute to research and departmental service. The faculty survey indicated that time allocated to research declined by half. Time allocated to departmental service was not directly addressed in the faculty survey, but it is difficult to imagine that faculty in phased retirement would play as active a role as when they were working full-time. Presuming the service workload stays the same for the department, this means more work for everyone else.

To address these issues, the Office of the President of the University of North Carolina system conducted a survey of deans and department heads in the 1999-2000 academic year to learn about the impact of the phased retirement plan on each campus. The number of responses relative to the number of colleges and departments varied significantly across each campus, ranging from two at UNC-Charlotte to 42 at East Carolina University. At the two largest campuses (which have the most academic programs and departments), there were only ten responses at UNC-Chapel Hill and 38 at NC State. Because of this variation in responses across campuses, the survey results do a better job of highlighting issues than of measuring impact.

A total of 231 departments and colleges responded to the survey, of which 107 departments or colleges reported that faculty from their unit had entered

phased retirement. Across all campuses, 57 percent of the deans and department heads who had phased retirees reported that some of the salary savings were made available to their unit. This percentage varied widely across campuses, ranging between 21 and 100 percent. In units which lost a faculty member and failed to gain any resources, the department head or dean tended to have an unfavorable view of phased retirement. The issue that came up most frequently (mentioned on 26 responses) was the loss of resources for the collective work of the department, especially service on committees and advising graduate students. Changes in teaching assignments, larger classes, class cancellations, and greater use of non-tenure track faculty were also cited in the responses. The allocation of office space was another contentious issue (cited in 35 responses), as anyone in academic administration would expect.

Improved personnel planning is a major goal of the UNC system's phased retirement plan. When the survey asked the department heads and deans if "you believe PRP provides an additional management tool for planning," 59 percent responded affirmatively. Although this is quite close to the 57 percent who received released salary funds, there was no direct relationship across campuses between the answers to this question and to the odds of receiving salary release funding. Some department heads gave open-ended explanations for their response. Most of the comments were favorable and tended to note two key benefits from phased retirement: (1) it provides the department with more time to develop a hiring strategy (cited 41 times) and (2) released salary funds give the department head more degrees of freedom to meet staffing needs (cited

19 times). In nine cases, the respondents said that phased retirement encourages earlier retirement of less productive faculty. The unfavorable comment that came up most frequently was that phased retirement made planning more difficult by imposing constraints upon resources and creating uncertainty about when the position will be fully replaced. Such comments were most frequently made when the unit did not receive any released salary funding.

IV. CONCLUSION

This paper has examined the value created by phased retirement plans for both faculty members and the university that employs them. From the point of view of faculty, there are two payoffs from having access to a phased retirement program: (1) greater opportunities for part-time work on campus, including in many cases the capacity to earn more income while working fewer hours, and (2) the ability to make the transition to a new stage of life more gradually than permitted by the tenure system. Over the period of this study, phased retirees accounted for between 25 and 35 percent of all retirements, indicating that many faculty appreciate having more degrees of freedom in transitioning toward retirement. In the UNC system, the take-up rates for phased retirement were significantly higher on campuses with the heaviest teaching loads, reflecting the fact that phased retirement buys more free time in those situations.

From the perspective of the university, the biggest payoff from adopting a phased retirement plan is the increased odds that low performing faculty will start the retirement process earlier. The precise payoff depends on how these

individuals are replaced, but there is the opportunity for both cost savings and intellectual renewal. Cost savings arise from either pocketing the salary release or from replacing senior faculty with junior faculty or adjuncts. Given the conditions of excess supply prevailing in most academic labor markets, particularly among junior faculty, universities should expect to eventually fill these positions with highly capable new faculty.

According to a survey of deans and department heads, phased retirement is a useful tool for planning and management. Universities that have introduced phased retirement have carefully assessed the fit between this new policy and their current situation. Schools are much more likely to launch a phased retirement plan if they have a high percentage of tenured faculty, implying that the value of an additional management tool is greater in such a situation. Campuses with defined contribution plans are more likely to have phased retirement plans than those with defined benefit plans, which is what one would expect given the difficulties that come up with phased retirement under a defined benefit plan. However, in the case study of the UNC system, employees who had chosen to be covered by the defined benefit pension plan had much greater odds of entering phased retirement than those who had selected a defined benefit plan. Campuses with defined benefit plans would thus do well to develop some way to overcome the built-in conflicts between benefit formulas and the incentives for entering phased retirement, perhaps following the example of the UNC system. The main challenges associated with the introduction of phased

retirement have been at the college or departmental level where administrators must scramble to find substitutes until the phased retiree becomes fully retired.

This study has shown that a phased retirement program encourages faculty to start the transition to full retirement earlier than they would have in the absence of such a program. More years of data from the UNC system will be needed to assess whether phased retirees end up entering full retirement sooner or later than they would have otherwise. The survey data of faculty in phased retirement suggest that they enter full retirement earlier, but the answer to this question can be more rigorously ascertained with data on employment patterns before and after the introduction of phased retirement, including whether those entering phased retirement stay for the maximum time permitted.

It would be helpful to learn how phased retirement rates vary by academic discipline. Accelerated exit rates from academe can be better tolerated in disciplines with an excess supply of faculty than in those where new faculty are relatively scarce. The organizational structure of the various universities in the UNC system varied so much that it was impossible to explore this issue over all 15 campuses, but it would be feasible to conduct within-campus studies at some of the largest universities.

Table 1. Percentage of colleges and universities with phased retirement plans, by institutional characteristics

Sample mean	27.0
Carnegie class	
Doctoral	35.0
Masters	28.8
Baccalaureate	28.9
Two year with faculty ranks	14.1
Two year without faculty ranks	18.2
Percentage of full-time faculty age 55 and over	
Less than 30	27.6
30 to 39.9	32.2
40 or more	22.9
Percentage of full-time faculty with tenure	
Less than 40	16.5
40 to 49.9	25.4
50 to 69.9	30.2
70 or above	33.7
Retirement plan	
Defined contribution only	38.2
Defined benefit only	19.4
Both combined	17.4
Both alternatives	19.3
Public-private status	
Public institution	26.7
Private institution	27.3
Other retirement policies	
Seminars on retirement planning available	29.2
Seminars on retirement planning not available	11.6
Financial incentives to retire before age 70 offered since 1995	31.9
Financial incentives to retire before age 70 not offered since 1995	22.7
Buyouts on college-by-college or individual basis offered since 1995	31.6
Buyouts on college-by-college or individual basis not offered since 1995	24.2

Source: Survey of Changes in Faculty Retirement Policies

Table 2. Probit analysis of odds that a campus will have a phased retirement program

	Model without retirement policy variables	Model with retirement policy variables
Number of full-time faculty (in 1000s)	-0.001 (0.001)	0.000 (0.001)
Percentage age 55 or older	0.098 (0.184)	0.065 (0.184)
Percentage tenured	0.397** (0.126)	0.375** (0.128)
Defined benefit plan	0.027 (0.078)	0.018 (0.080)
Defined contribution plan	0.273** (0.061)	0.253** (0.063)
Combined plan	-0.025 (0.083)	-0.021 (0.083)
Carnegie class 1	0.028 (0.103)	0.035 (0.106)
Carnegie class 2A	-0.035 (0.087)	-0.040 (0.088)
Carnegie class 2B	-0.044 (0.088)	-0.057 (0.088)
Carnegie class 3	-0.039 (0.100)	-0.059 (0.096)
Public institution	0.104 (0.057)	0.095 (0.058)
Retirement planning seminars available		0.119* (0.051)
Financial incentives to retire before age 70 offered		0.104* (0.045)
Buyouts of colleges or Individuals offered		-0.012 (0.049)

Note: Table reports change in probability that campus will have a phased retirement plan associated with a change in the independent variable from 0 to 1 (except for line 1 which indicates the change in the odds of having a phased retirement plan resulting from an increase in faculty size of 1000). Standard errors are reported in parentheses.
* indicates statistically significant at p=0.05 level or greater
** indicates statistically significant at p=0.01 level or greater

Source: Survey of Changes in Faculty Retirement Policies

Table 3. Retirement rates for University of North Carolina system faculty, by year

Year	Phased retirement rate	Full retirement rate	Total retirement rate
1994-95	n.a.	8.7	8.7
1995-96	n.a.	8.7	8.7
1996-97	n.a.	8.8	8.8
1997-98	3.2	7.2	10.4
1998-99	2.3	9.0	11.3
1999-2000	3.0	7.4	10.4
2000-01	2.8	4.5	7.3
2001-02	1.7	4.1	5.8
2002-03	2.0	3.3	5.3

Source: UNC system annual faculty censuses, 1994-2003

Note: these retirement rates represent the percentage of faculty eligible for phased retirement who elected to either (1) enter phased retirement or (2) resign from the university.

Table 4. Retirement rates for University of North Carolina system faculty, by year and age group

Age Group	1994-95	1995-96	1996-97	1997-98 (total)	1997-98 (full)	1997-98 (phased)	1998-99 (total)	1998-99 (full)	1998-99 (phased)	1999-2000 (total)	1999-2000 (full)	1999-2000 (phased)
50-57	2.7	2.7	2.7	3.2	2.3	1.0	4.3	3.6	0.7	4.7	3.8	0.9
58-62	9.2	6.8	9.9	13.5	8.5	4.9	12.7	9.5	3.2	10.9	7.2	3.7
63-64	18.3	24.7	18.6	19.7	14.7	5.0	20.5	17.2	3.3	25.3	17.5	7.8
65	19.5	22.1	21.7	27.3	22.1	5.2	28.8	18.6	10.2	16.3	11.6	4.7
66-69	29.2	30.0	22.9	21.2	17.2	4.0	27.7	23.7	4.0	20.0	14.8	5.2
70+	41.7	12.0	30.8	29.5	13.6	15.9	35.0	30.0	5.0	17.0	10.6	6.4
Total	8.7	8.7	8.8	10.4	7.2	3.2	11.3	9.0	2.3	10.4	7.4	3.0

Source: UNC system annual faculty censuses, 1994-2000

Table 5. Faculty workload on campus, before and after entering phased retirement

	Before phased retirement	After phased retirement
Mean number of courses taught	4.3 (2.8)	2.4 (1.7)
Mean percentage of time allocated to other activities:		
Research	27.6 (26.8)	29.6 (36.2)
Public Service/Extension	7.4 (12.7)	7.3 (18.4)
Administration/Institutional Service	24.2 (30.0)	9.9 (18.8)
Other assignments	16.4 (21.9)	13.8 (24.9)

Source: Survey of UNC Phased Retirement Program Participants.

Note: Standard deviations are reported in parentheses.

REFERENCES

Allen, Steven G.; Robert L. Clark; and Linda S. Ghent, (2003), "Phasing Into Retirement," National Bureau of Economic Research Working Paper No. 9779.

Ehrenberg, Ronald G. (2003), "The Survey of Changes in Faculty Retirement Policies," http://www.aaup.org/Issues/retirement/retrpt.htm.

Ghent, Linda S.; Steven G. Allen; and Robert L. Clark (2001), "The Impact of a New Phased Retirement Option on Faculty Retirement Decisions," *Research on Aging*, Vol. 23, No. 6, November 2001, pp. 671-693.

Leslie, David W., and Natasha Janson (2004), "To Phase or Not to Phase: The Dynamics of Choosing Phased Retirement in Academe," manuscript, College of William and Mary.

Palmer, John L.; Michael A. Flusche; and Myra Z. Johnson (2004), "Faculty Recruitment, Retention, and Retirement: A Case Study of Selected Human Resource Policy Activities at Syracuse University," manuscript, Syracuse University.

Pencavel, John (2004), "Faculty Retirement Incentives by Colleges and Universities," manuscript, Stanford University, Department of Economics.