Appendix Section 2

FUNDING THE UM PLAN

How is the University Defined Benefit Plan funded?

Over the long run, the normal cost of the retirement benefit averages 7.25% of payroll. This cost is based on providing full funding for the future retirement benefits of current participants and retirees based on the current plan design. The normal cost is established based on a set of assumptions for factors such as investment returns, mortality, turnover, and salary, to name a few (see ‘assumption’ section below). If the assumptions are met each year, the plan cost would never vary from 7.25% of payroll.

How critical is plan design in the determination of the normal cost?

Plan design drives most of the cost in that each employee is ‘earning’ a percent of their salary each year of service. In addition, in most cases, that percent of salary is on a growing salary base. As employees accrue years of service the plan liability increases. This is of course accounted for in the calculation of the normal cost as the actuary uses a set of assumptions to determine the length of service and salary upon termination, retirement or death.

Any changes to plan design would have a major effect on the normal cost of the plan. For example, employees often suggest various plan design enhancements such as lowering the retirement age or adding the option to purchase service credit at a reduced cost. Changes such as these would substantially increase the normal cost of the plan by increasing the liability of the plan now and in the future. Conversely changes that decrease the liability such as increasing the retirement age, would lower the normal cost.

Why does the University’s annual cost of the retirement plan vary from year to year?

Annually, the actuarial consultant determines the amount above or below the normal cost that is needed to fund the plan for the upcoming fiscal year. This is called the ‘required contribution’. The required contribution is determined annually by comparing actual experience (from payroll and investment data) to the assumptions. The assumptions do not change from year to year, but the actual experience may differ. The investment return assumption and actual experience have the most impact on the annual required contribution as described in the next section.

Historically, changes in actual experience beyond investment returns (e.g., mortality, turnover, salary, etc.) have been minimal and, therefore, resulted in minimal effects on the annual cost. Annually the actuarial consultant provides a letter documenting the required contribution and the reason for the change above or below 7.25%. These annual letters are available upon request.

What happens to the employee contributions to the retirement plan?

Employees began sharing in the funding of the retirement plan in 2009. The employee contributions fund part of the required contribution, and amount to about 1.23% of payroll. The impact of the employee contributions on the annual required contribution is shown in Table 1 below.
University and employees contribute to the *UM retirement plan trust fund* each payroll period. The employees pay 1-2% of their salary, depending on their salary level. The university pays the difference between the required contribution and the employee contribution. The monies deposited into the *UM retirement plan trust fund* cannot be used for any other purposes—the only exception is to return employee contributions to those NON-vested employees who request refunds upon termination. To date the retirement trust fund is approximately $2.4 billion.

**How do investment returns affect the required contribution each year?**

A key factor that determines the *normal cost* of the retirement plan is the assumption (see assumption section below) that the retirement trust fund investments will earn on average a return of 8% per year. However, from year to year the actual required contribution can vary significantly due to the fact that sometimes the annual investment returns are higher than 8% and sometimes they are lower. When the returns are significantly higher, the cost will be below 7.25% and when the returns are significantly lower, the cost will be above 7.25%. Over the last 10 years, the returns have ranged from positive 17.5% to negative 17%; subsequently the retirement plan cost as a percent of payroll has ranged from a low of 2.56% to a high of 8.69%. In today’s dollars, that would mean that the cost ranged from a low of $25.6 million to a high of $86.9 million. To avoid large swings in required contributions for a single year, positive and negative returns above and below the 8% assumed return are spread over five years and the unfunded liability is amortized over 20 years, as explained in the next section. Table 1 below shows the fluctuations in required contributions over the past 16 years and the projections for the next four years (2012-2015).

### Table 1: Past, Current and Projected UM Retirement Plan Contributions

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Employer Contributions</th>
<th>Employee Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>4.0%</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>4.2%</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>4.1%</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>4.0%</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>3.9%</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>3.8%</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>3.7%</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>3.6%</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>3.5%</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>3.4%</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>3.3%</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>3.2%</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>3.1%</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>3.0%</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>2.8%</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>2.7%</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>2.6%</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>2.5%</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>2.4%</td>
<td></td>
</tr>
</tbody>
</table>
Explain the 5-year ‘smoothing’ process and the 20-year amortization method used in determining the annual required contribution.

The required contribution includes two cost components: (a) the normal cost and (b) a 20-year amortization payment on the unfunded liability. The unfunded liability is the difference between the Actuarial Accrued Liability (Liabilities) and the Actuarial Value of Assets (Assets) in the retirement trust fund (see Table 2 below for past five years). The Assets are compared to the Liabilities as of the valuation date. Assuming the plan is underfunded (i.e., Assets are less than Liabilities) the amount of the underfunding would be amortized over 20 years. The required contribution is this 20-year amortization payment plus the normal cost. If the plan is over funded, then the amortization payment is subtracted from the normal cost. The comparison of the Assets to the Liabilities is done each year, so the amortization payment is recalculated each year.

**Table 2: Retirement Plan - Schedule of Funding Progress (in thousands)**

<table>
<thead>
<tr>
<th>Actuarial Valuation Date</th>
<th>Actuarial Valuation of Assets (a)</th>
<th>Actuarial Accrued Liability (AAL) (b)</th>
<th>Unfunded AAL/(Excess Funding) (b-a)</th>
<th>Funded Ratio (a / b)</th>
<th>Annual Covered Payroll (c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/1/2004</td>
<td>$2,075,032</td>
<td>$2,144,738</td>
<td>$69,706</td>
<td>96.7%</td>
<td>$753,266</td>
</tr>
<tr>
<td>10/1/2005</td>
<td>2,125,656</td>
<td>2,271,230</td>
<td>145,574</td>
<td>93.6%</td>
<td>795,758</td>
</tr>
<tr>
<td>10/1/2006</td>
<td>2,325,264</td>
<td>2,400,807</td>
<td>75,543</td>
<td>96.9%</td>
<td>846,884</td>
</tr>
<tr>
<td>10/1/2007</td>
<td>2,651,535</td>
<td>2,555,592</td>
<td>(95,943)</td>
<td>103.8%</td>
<td>891,648</td>
</tr>
<tr>
<td>10/1/2008</td>
<td>2,808,126</td>
<td>2,733,032</td>
<td>(75,094)</td>
<td>102.7%</td>
<td>954,430</td>
</tr>
<tr>
<td>10/1/2009</td>
<td>2,843,422</td>
<td>2,819,524</td>
<td>(23,898)</td>
<td>100.8%</td>
<td>970,060</td>
</tr>
</tbody>
</table>

Five-year smoothing is used in the annual determination of the Assets. Each year’s actual investment return has two components. The first component is the amount that represents the expected (assumed) 8% return for the year. This portion is reflected immediately in the Assets for the year. The second portion is the amount of actual investment return above/below the 8% expected return. This portion ("Excess/Deficit" return compared to the expected 8%") is referred to as the Investment Gain/Loss and is 'spread' or 'smoothed' over five years. In other words, only 20% of the Investment Gain/Loss is included in the current year Assets with equal portions included in each of the following four years.

For example, for the year ending 9/30/2010, the amount of the investment return reflected in the Assets is:

The 8% expected return for the year ending 9/30/2010

Plus:

20% of the Investment Gain/Loss for the year ending 9/30/2010

20% of the Investment Gain/Loss for the year ending 9/30/2009

20% of the Investment Gain/Loss for the year ending 9/30/2008

20% of the Investment Gain/Loss for the year ending 9/30/2007

20% of the Investment Gain/Loss for the year ending 9/30/2006
Describe each of the assumptions used in determining the normal cost of the UM retirement plan. How often are the assumptions reviewed, and what is the history on changes to the assumptions?

The normal cost is determined by predicting what will need to be funded for each participant in the plan. Based on accepted actuarial practice the normal cost is determined using the following assumptions.

- **Investment Return**: Funding a retirement system involves the accumulation of substantial reserves to pay benefits in the future. These reserves are invested and the rate of investment return has the greatest impact of all the assumptions used in the valuation.

- **Salary and Payroll Increases**: Because the benefits provided by the Plan are based on an employee’s final average compensation, increases in salaries are projected using an age-related salary scale. This scale is intended to project increases due to inflation, merit, promotions, longevity, etc.

- **Retirement Rates**: This assumption projects the percentage of eligible employees who will retire at each age.

- **Withdrawal Rates**: An assumed turnover rate is used in the valuation, reflecting withdrawals that may be made from the plan due to termination.

- **Disability Rates**: This involves an assumed percentage of employees who may become disabled.

- **Mortality Rates**: A mortality table is used to project the number of employees at each age who will die in active service, and also to determine the amount of the reserve required at the time of retirement to pay for benefits for the remainder of an employee’s lifetime.

- **Presence and Age of Spouse**: This assumption is made with respect to the proportion of married employees and the age difference between spouses.

Each assumption is set using accepted actuarial standards, and all assumptions are reviewed every five years. A report is produced and is available upon request. Even with asset smoothing, the assumption with the most impact on the normal cost and therefore on the annual required contribution is the investment return as shown in Table 3 below. There is much less volatility (gain/loss) from all the other actuarial assumptions combined and they tend to offset each other over time.
Table 3: Impact of Variation from Actuarial Assumptions

<table>
<thead>
<tr>
<th>Plan year ending October 1</th>
<th>Investment loss/gain using 5-yr smoothing</th>
<th>All other assumptions loss/(gain)*</th>
<th>Plan changes</th>
<th>Assumptions changes</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>$120,736,596</td>
<td>$(31,834,384)</td>
<td>$(7,976,708)</td>
<td>$(29,729,068)</td>
<td>$51,196,436</td>
</tr>
<tr>
<td>2008</td>
<td>244,402</td>
<td>20,604,105</td>
<td></td>
<td>20,848,507</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>(182,168,013)</td>
<td>(6,504,037)</td>
<td>17,186,535</td>
<td>(171,485,515)</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>(79,265,006)</td>
<td>9,234,550</td>
<td></td>
<td>(70,030,456)</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>62,063,511</td>
<td>5,189,514</td>
<td>8,614,742</td>
<td>75,867,767</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>103,672,176</td>
<td>3,147,919</td>
<td></td>
<td>106,820,095</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>(53,846,701)</td>
<td>28,909,467</td>
<td></td>
<td>(24,937,234)</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>275,952,113</td>
<td>(29,425,916)</td>
<td>47,326,410</td>
<td>293,852,607</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$247,389,078</td>
<td>$65,150,979</td>
<td>$(29,729,068)</td>
<td>$282,132,207</td>
<td></td>
</tr>
</tbody>
</table>

*Also include contribution loss/(gain) resulting from time difference/lag between Plan valuation date (October 1) and University’s fiscal year date (July 1).

**Table 4: Assumed Annual Salary Increase Rates**

<table>
<thead>
<tr>
<th>Age</th>
<th>Academic &amp; Administrative</th>
<th>Clerical &amp; Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>7.6%</td>
<td>6.7%</td>
</tr>
<tr>
<td>30</td>
<td>6.2%</td>
<td>5.3%</td>
</tr>
<tr>
<td>35</td>
<td>5.7%</td>
<td>4.7%</td>
</tr>
<tr>
<td>40</td>
<td>5.3%</td>
<td>4.3%</td>
</tr>
<tr>
<td>45</td>
<td>5.0%</td>
<td>3.9%</td>
</tr>
<tr>
<td>50</td>
<td>4.7%</td>
<td>3.9%</td>
</tr>
<tr>
<td>55</td>
<td>4.4%</td>
<td>3.7%</td>
</tr>
<tr>
<td>60</td>
<td>3.9%</td>
<td>3.5%</td>
</tr>
</tbody>
</table>

**Explain the salary assumptions used in determining the annual required contribution.**

The retirement plan benefits are based on *final average salary* so it is necessary to predict or anticipate what benefits will be paid to each active participant. To determine this prediction there are assumptions made about annual salary increases as well as other more substantial increases such as promotions. These assumptions lead to an *annual level percentage increase* earned in each year (for purposes of setting the annual required contribution) although in actuality the increases may be more sporadic. In performing the actuarial valuation, salary for each active participant needs to be projected for each year from date of hire to the expected dates of leaving University employment (termination/separation, disability, death, retirement). The actuarial salary increase assumption for both purposes is summarized at 5-year age intervals (there is an assumption at each age) and is shown in Table 4 below.
What is the stabilization fund and how does it work?

In FY 2008, the administration established a retirement plan stabilization fund as an additional strategy to smooth the impact of the fluctuating retirement plan costs on the university’s budget. The intent was to set the University budget based on the normal cost. Currently, the normal cost is 7.25% of payroll. The University cost should, on average, be the normal cost less the value of the Employee contributions. To address the anticipated increases in upcoming years’ required contributions, the University budgets for the normal cost, even though the Employee contribution offsets the required contribution. In years when the required University contribution to the retirement plan is less than 7.25%, the difference between the budgeted amount and the required University contribution is deposited in the stabilization fund; when the required University contributions to the plan are greater than 7.25% the extra amount needed can be taken from the stabilization fund. As of fiscal year end 2011, the university will have accumulated approximately $65.7 million in the stabilization fund, as shown in Table 5 below.

Table 5: Building the Stabilization Fund

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Total Required Contribution</th>
<th>University Required Contribution</th>
<th>University Budgeted Cost</th>
<th>Budgeted minus Required</th>
<th>Contributions (Charges) to Stabilization Fund</th>
<th>Stabilization Fund Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY08</td>
<td>7.98%</td>
<td>7.98%</td>
<td>7.98%</td>
<td>0.00%</td>
<td>16.5</td>
<td>16.5</td>
</tr>
<tr>
<td>FY09</td>
<td>5.87%</td>
<td>5.87%</td>
<td>7.00%</td>
<td>1.13%</td>
<td>10.9</td>
<td>27.6</td>
</tr>
<tr>
<td>FY10</td>
<td>6.12%</td>
<td>4.88%</td>
<td>7.00%</td>
<td>2.12%</td>
<td>20.9</td>
<td>49.2</td>
</tr>
<tr>
<td>FY11</td>
<td>6.97%</td>
<td>5.74%</td>
<td>7.25%</td>
<td>1.51%</td>
<td>15.1</td>
<td>65.7</td>
</tr>
</tbody>
</table>

1Beginning in FY10, the University Required Contribution is the Total Required Contribution minus the employee contribution.

2Beginning in FY09, the University Budgeted Cost is equal to the Normal Cost. The normal cost was 7% until FY2010, when it changed to 7.25%.

3Budget contribution minus required contribution is the percent of payroll contributed to the stabilization fund.

4The initial contribution to the Stabilization Reserve was $16.5 million. The stabilization fund balance includes cumulative contributions (charges) plus interest.

Why is the stabilization fund separate from the retirement trust fund?

One of the key reasons for a stabilization fund is to have resources readily available to counter the volatility of the financial markets. Also, these resources are invested in such a way as to minimize the impact of volatility in the financial markets on them. Therefore, they are invested for the short term in low return, low volatility investment instruments. In contrast, the investment horizon for the Retirement Trust Fund is much longer, and the asset mix is more diversified to manage the risk and maximize the return.
How long would the current stabilization fund resources last?

Every 1% increase/decrease in the total required annual contribution, as compared to the 7.25% normal cost of the retirement plan, has approximately a $10 million impact on the budget based on current payroll. The actuaries have projected that the required contribution for each of the next five years will be above 7.25% because of the significant downturn in investment returns in 2008 and the slow economic recovery. Table 6 shows (a) the projected cost (required contribution as a percent of payroll) and (b) the amount that would be needed from the stabilization fund to make up the difference in cost over 7.25%.

If the actuarial projections are realized and if the stabilization fund is used to cover the shortfall in its entirety, the fund would be depleted within the next four years. The decision of how much of the stabilization fund to use will be made annually taking into consideration projected required contributions and other budget issues.

Table 6: Projected Use of Stabilization Fund

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Total Required Contribution*</th>
<th>University Required Contribution¹</th>
<th>University Budgeted Cost ²</th>
<th>Budgeted minus Required³</th>
<th>Contributions (Charges) to Stabilization Fund ($ million)</th>
<th>Stabilization Fund Balance ($ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY12</td>
<td>8.55%</td>
<td>7.31%</td>
<td>7.25%</td>
<td>-0.06%</td>
<td>-.6</td>
<td>66.7</td>
</tr>
<tr>
<td>FY13</td>
<td>10.03%</td>
<td>8.78%</td>
<td>7.25%</td>
<td>-1.53%</td>
<td>-15.3</td>
<td>52.9</td>
</tr>
<tr>
<td>FY14</td>
<td>11.83%</td>
<td>10.57%</td>
<td>7.25%</td>
<td>-3.32%</td>
<td>-33.2</td>
<td>20.6</td>
</tr>
<tr>
<td>FY15</td>
<td>12.05%</td>
<td>10.78%</td>
<td>7.25%</td>
<td>-3.53%</td>
<td>-35.3</td>
<td>-0-</td>
</tr>
<tr>
<td>FY16</td>
<td>11.91%</td>
<td>10.63%</td>
<td>7.25%</td>
<td>-3.38%</td>
<td>-33.8</td>
<td>-0-</td>
</tr>
</tbody>
</table>

* Required Contributions for FY2012 and beyond are based on estimates prepared by the Segal Company in March 2010. Actual contribution rates for each fiscal year (July 1 through June 30) are defined during the preceding February or March, based on the retirement plan year that had ended on the prior September 30.

¹Beginning in FY10, the University Required Contribution is the Total Required Contribution minus the employee contribution.

²Beginning in FY09, the University Budgeted Cost is equal to the Normal Cost.

³Budget contribution minus required contribution is the percent of payroll used from the stabilization fund.

What is the impact of big cost spikes in plan, who pays and what other things are impacted?

The University budgets for the retirement plan costs based on the normal cost of 7.25%. As explained in the section above, when the cost is lower the University is able to put the additional funds in the stabilization fund. When the costs exceed the budgeted amount, the University must find additional funds for the retirement plan. Thus, cost spikes in the plan can cause a “ripple impact” in many areas of the University.

The Retirement Program is one component of the Total Compensation the University provides for faculty and staff. The core components of total compensation are salary
and employee benefits. Other ‘rewards’ such as work-life balance, personal recognition, and career development may be just as important, if not more important, to some employees, but are typically not included in calculations for Total Compensation. Together, all of these areas (total compensation and other rewards) are often referred to as Total Rewards, and are critical parts of the work experience that are attractive to employees and lead to an enhanced reputation in the marketplace.

An employer’s total rewards program seeks to accomplish the “big three” of critical employee talent: attraction, retention, and motivation. Admirable ideals, but tactical execution and balancing the cost of each program in the interest of the whole, is more challenging. When any one component of the program absorbs too much of the resource pool, it minimizes the resources available to the other programs. Beyond the employee/employer relationship, cost spikes in the plan can have an even broader impact on the organization. Students may be impacted through increased tuition, less financial aid, larger classes due to reduced funding available to hire faculty, outdated laboratories and classrooms and buildings in need of repair. The State does not adjust appropriations to the University based on benefit costs so, if there is no increase or a decrease in state funding when required contributions spike, either tuition goes up or other costs must be reduced.

**UM PLAN DESIGN**

**How does the UM DB plan compare to other DB plans in terms of plan design (e.g., retirement benefits and other features)?**

The UM plan design is a typical DB plan with a ‘hybrid feature’ (described below) in that employees earn a benefit based on their age and years of service. Each eligible year of service is a 2.2% benefit which accumulates without limit, and is payable at certain combinations of age and years of service. The plan has a typical ‘vesting period’ of 5 years. The UM plan design is fairly conservative, yet competitive. Features not present in the UM plan that result in higher costs for other plans include early retirement options, reduced cost for purchase of service credit, and automatic cost of living increases for retirees. A 2008 comparison of UM plans to 15 peer institutions showed that the UM plan is average (reference: Hewitt 2008 Benefit Index Study).

The UM Plan can be referred to as a ‘hybrid’ plan because it includes a feature called ‘minimum value accumulation’ (MVA) which provides a cash out or rollover option for vested employees who terminate prior to retirement eligibility. Table 7 below shows the MVA account value percent and amount for employees with a salary of $50,000 at various years of service.

**Table 7: Minimum Value Accumulation example by years of service**

<table>
<thead>
<tr>
<th>Years of service</th>
<th>MVA account value</th>
<th>MVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>27%</td>
<td>$13,500</td>
</tr>
<tr>
<td>10</td>
<td>61%</td>
<td>$30,500</td>
</tr>
<tr>
<td>15</td>
<td>103%</td>
<td>$51,500</td>
</tr>
<tr>
<td>20</td>
<td>155%</td>
<td>$77,500</td>
</tr>
</tbody>
</table>
The MVA can be compared to the lifetime benefit that would be received should the employee choose to defer the retirement benefit until they become eligible. Up to about age 48, the MVA is usually the higher benefit.

**How do Social Security benefits work with the UM plan?**

The UM DB plan is in addition to social security benefits. The salary replacement value for retirement planning is the combination of the individual’s Social Security, University pension and individual voluntary savings (i.e. 403(b) or 457 plans). Social security is a federal retirement plan that is governed by a separate set of criteria. Most employees are eligible for social security benefits at age 65 or 67 although reduced benefits may be available at age 62. Information about social security is available on the federal website at [http://www.ssa.gov](http://www.ssa.gov). Many experts say that a retiree should expect to need 70-80 percent of their income to maintain their current standard of living. For the average wage earner, Social Security replaces about 40 percent. According to a retirement replacement brief published by the SSA, a low earner at 65 would receive a benefit that replaced about 54 percent of prior earnings, while one who always earned the maximum that is taxed and counted for Social Security benefits would have a replacement rate of about 28 percent. Therefore, the combination of social security and UM DB benefits (for those eligible for full benefits) will differ by salary level.

**Can the current DB plan be altered enough for future employees to lower the risk/volatility to UM and still maintain a competitive DB Plan for future employees?**

One way to reduce contribution volatility is by changing the investment return assumption. The current return assumption is 8 percent (due to high investment in equities). In order to have a significant reduction in risk/volatility, the investment return assumption would need to be lowered to 6 percent or less (more fixed income investment). Taking this action would create an immediate increase in unfunded liability of $797 million, and a total increase in contribution requirements of 10.5 percent of payroll.

The only ways to offset this substantial increase in the plan costs are to lower the benefits substantially or increase the employee contribution. Either of those actions would make the plan much less competitive.

**In the interest of ensuring retirement adequacy for long-term, what portion of the employee population has a “full career” at UM?**

Full retirement from the UM Defined Benefit Plan may be taken at age 62, with 25 years of service, or at age 65 by vested participants. More than 60% of employees never become vested (receive 5 years of creditable service). Of those who do vest, about 40% will reach 20 years or more of service.

**What role does Retirement play in the recruitment of faculty and staff?**

Mercer Consulting conducted a study titled “Impact of Program Changes on Workforce Behavior” on behalf of the University of California (UC) that was released in March 2007. As a part of the study, Mercer surveyed employees of UC as well as conducted a literature review. The full report is available upon request. In general, retirement plans
do not appear to be a significant driver of attraction or retention, assuming the plans are at least average compared to similarly situated employers.

Explain income adequacy at retirement, including definition of ‘full career’, impact of social security at various income levels, and retirement age for physically demanding jobs.

Two studies are available upon request regarding income adequacy at Retirement. The first is a Social Security Brief published in 2007. While it is somewhat dated, it provides valuable information. The second is a presentation from Towers Watson just released in the past few weeks.

The Social Security Brief discusses 70 to 80 percent of prior income as the amount most cited by experts to maintain the same standard of living. Of this, social security will replace about 40 percent prior earnings for an average wage earner. A low earner can expect a benefit that replaces about 54 percent of prior earnings and a high wage earner about a 28 percent replacement rate.

The Towers Watson presentation cites retirement income needs in terms of number of years times annual pay. For example, the average full-career contributing employee needs 15.7 times their pay at age 65 in order to cover retirement expenses. It is unclear whether this provides a standard of living comparable with pre-retirement. Other useful information includes how various plan designs can help ensure participation, which in turn drives retirement savings adequacy. Finally, the information included addresses the topic of realistic retirement age. While actual experience shows that 74% of individuals retire by age 65, employee expectations differ in that 42% indicate that they do not expect to retire until after age 65, with 33% expecting to work until age 70 or longer.

**IMPACT ON CURRENT DEFINED BENEFIT PLAN IF CLOSED TO NEW PARTICIPANTS**

Will closing the UM Defined Benefit Plan to new participants impact the plan?

No. Closing the current plan to new employees (and offering a new plan, either a defined contribution or offering a pension plan with different benefits) does not impact the dollar funding/cost of the current plan for current employees. The cost of the current plan however as a percentage of only the ‘closed’ plan payroll is projected to be higher as a result of the amortization payment on the unfunded liability becoming an increasing percentage of the payroll for the closed group. As shown in Table 8 below, the ‘closed’ plan payroll will become increasingly smaller so the overall impact on the University budget is minimized.
If the UM DB plan is closed to new participants, does the reduction in the size of assets impact the ability to maintain the assumed investment return?

No, the size of the assets does not materially impact the investment return. The size of the retirement fund allows the University to hire individual managers to achieve the diversification that drives higher returns. In addition, because the retirement fund and the endowment fund are managed side by side, the University is able to negotiate lower fees for both. The University would likely continue to use individual managers until the size of the fund was about $100 to 200 million – many years in the future. At that point the University would likely switch to something such as the Common Fund, which has pooled multi-strategy funds that institutions can participate in and still receive the kind of returns currently achieved with only slightly higher fees.

Explain the impact of employee turnover on the plan funding, and how that is handled in a closed plan.

Closing the plan to new employees does not create additional costs for current employees. The annual cost to pay the anticipated benefits is determined separately/independently for each employee. Turnover is one of the assumptions used in determining the anticipated benefits and in the annual required contribution. Although the University has substantial turnover in the first five years (over 60% of employees never vest in the plan), this is already accounted for in the plan funding for each active employee. Turnover for current employees continues to occur as anticipated based on the employees’ tenure.
Will it be tempting for future administrators/board members to reduce funding for the closed plan, especially once there are only a few participants remaining in the plan?

While it may appear tempting, the point at which this is most likely to be considered is when the plan is comprised mostly of retirees receiving benefits. At this point the University has legal obligations to maintain funding without changing the benefits.
APPENDIX 3: ADDITIONAL DATA REQUESTED BY COMMITTEE MEMBERS

What is the difference in expected investment returns for DB vs. DC?
About 1% less return on a DC plan than a DB plan; the issue is not fees—it is risk tolerance and access to high risk/high yield options.

How many employees are currently using the Tax Deferred Plans (i.e., 403B, 457)?
Tables 12 and 13 below reflect the counts of University employees eligible to participate in a retirement plan and in Tax Deferred Investment (TDI) Plans.

The counts include a small number of UM employees who are covered under Federal Retirement plans (Civil Service and FERS) as well as UM employees covered under the State of Missouri Plan (MOSERS). While these employees are not technically participants in the University’s retirement plan, they are in positions covered by a defined benefit plan and are eligible to participate in the UM TDI Plans.

As expected, the percent participation is much greater at higher salary and age levels. However there are significant numbers of employees at the lowest salary levels and lower ages who take advantage of these additional retirement savings opportunities.

Table 12: TDI Plan Participation by Salary Ranges

<table>
<thead>
<tr>
<th>Salary Range</th>
<th>Distribution by Salary of Benefit Eligible Employees</th>
<th>Distribution by Salary of Benefit Eligible Employees Participating in TDI Plans</th>
<th>% of Benefit Eligible Employees Participating in TDI Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Than 20K</td>
<td>367</td>
<td>12</td>
<td>3.27%</td>
</tr>
<tr>
<td>20K - 29.9K</td>
<td>4,143</td>
<td>252</td>
<td>6.08%</td>
</tr>
<tr>
<td>30K - 39.9K</td>
<td>3,962</td>
<td>471</td>
<td>11.89%</td>
</tr>
<tr>
<td>40K - 49.9K</td>
<td>2,867</td>
<td>549</td>
<td>19.15%</td>
</tr>
<tr>
<td>50K - 59.9K</td>
<td>2,046</td>
<td>539</td>
<td>26.34%</td>
</tr>
<tr>
<td>60K - 69.9K</td>
<td>1,473</td>
<td>517</td>
<td>35.10%</td>
</tr>
<tr>
<td>70K - 79.9K</td>
<td>864</td>
<td>363</td>
<td>42.01%</td>
</tr>
<tr>
<td>80K - 89.9K</td>
<td>652</td>
<td>311</td>
<td>47.70%</td>
</tr>
<tr>
<td>90K - 99.9K</td>
<td>455</td>
<td>236</td>
<td>51.87%</td>
</tr>
<tr>
<td>100K &amp; Over</td>
<td>1,623</td>
<td>996</td>
<td>61.37%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>18,452</td>
<td>4,246</td>
<td>23.01%</td>
</tr>
<tr>
<td>Age Range</td>
<td>Distribution by Age of Benefit Eligible Employees</td>
<td>Distribution by Age of Benefit Eligible Employees Participating in TDI Plans</td>
<td>% of Benefit Eligible Employees Participating in TDI Plan</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>Below 25</td>
<td>645</td>
<td>18</td>
<td>2.79%</td>
</tr>
<tr>
<td>25 - 29.9</td>
<td>1,735</td>
<td>104</td>
<td>5.99%</td>
</tr>
<tr>
<td>30 - 34.9</td>
<td>1,995</td>
<td>236</td>
<td>11.83%</td>
</tr>
<tr>
<td>35 - 39.9</td>
<td>1,971</td>
<td>376</td>
<td>19.08%</td>
</tr>
<tr>
<td>40 - 44.9</td>
<td>2,157</td>
<td>462</td>
<td>21.42%</td>
</tr>
<tr>
<td>45 - 49.9</td>
<td>2,530</td>
<td>631</td>
<td>24.94%</td>
</tr>
<tr>
<td>50 - 54.9</td>
<td>2,721</td>
<td>769</td>
<td>28.26%</td>
</tr>
<tr>
<td>55 – 60</td>
<td>2,478</td>
<td>795</td>
<td>32.08%</td>
</tr>
<tr>
<td>60 &amp; Over</td>
<td>2,220</td>
<td>855</td>
<td>38.51%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>18,452</td>
<td>4,246</td>
<td>23.01%</td>
</tr>
</tbody>
</table>