Attachment 1

University of California Retirement Plan

ACTUARIAL VALUATION REPORT AS OF JULY 1, 2016

Segal Consulting

Segal Consulting

100 Montgomery Street, SUITE 500 San Francisco, CA 94104
T 415.263.8200 www.segalco.com

November 3, 2016

Mr. Dwaine B. Duckett
Vice President, Human Resources
University of California
1111 Franklin Street, 5th Floor
Oakland, California 94607

Dear Vice President Duckett:

We are pleased to submit this funding Actuarial Valuation Report as of July 1, 2016 for the University of California Retirement Plan ("UCRP" or "Plan"). It summarizes the actuarial data used in the valuation, determines total funding policy contribution rates for the 2017-2018 Plan Year and analyzes the preceding year's experience.

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. The census and financial information on which our calculations were based was provided by the UC HR Staff. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for those measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

The actuarial calculations were completed under the supervision of John Monroe, ASA, MAAA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion the assumptions as approved by the Regents are reasonably related to the experience of and future expectations for the Plan.

We look forward to reviewing this report at the November 2016 Regents meeting and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By:

Paul Angelo, FSA, MAAA, EA, FCA
Senior Vice President & Actuary

John Monroe, ASA, MAAA, EA
Vice President & Actuary

AT/bqb

SECTION 1

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SECTION 2

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SECTION 1: Executive Summary for the University of California Retirement Plan

Purpose

This report has been prepared by Segal Consulting to present a valuation of the University of California Retirement Plan ("UCRP" or "Plan") as of July 1, 2016. The valuation was performed to determine if the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Plan,
- The characteristics of covered active members, terminated vested members, retired members, disabled members and beneficiaries as of July 1, 2016,
- The assets of the Plan as of June 30, 2016,
- The funding policy adopted by the Regents,
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding member terminations, retirement, death, etc.

Significant Issues in Valuation Year

CONTRIBUTIONS

Reference: Pgs. 10-11

- The total funding policy contribution rate decreased somewhat from 28.44% of covered payroll to 27.99% of covered payroll. The decrease in the total funding policy contribution rate was mainly due to the effect of the increase in total payroll on the Unfunded Actuarial Accrued Liability (UAAL) amortization rate, offset to some extent by an investment loss on the actuarial value of assets. This total funding policy contribution rate is for the 2017-2018 Plan Year and applies to the non-laboratory segment of UCRP (i.e., campuses, medical centers and Hastings College of Law). Contributions for the laboratories are subject to the terms of the University's contracts with the Department of Energy (DOE). More information on the various UCRP segments can be found in Section 1, page vii. Unless otherwise noted, results shown in this report are for all of UCRP.

Reference: Pg. 23

- In June 2016, the Plan received a contribution of $96 million, representing the first of three annual installments from State Prop 2 Funds, to be used for the purpose of paying down the UAAL. This contribution is reflected in the results shown in the valuation report. The next two annual installments for the 2016-2017 and 2017-2018 fiscal years are anticipated to be $171 million each and will be reflected in future actuarial valuations after they are received.

Significant Issues in Valuation Year (continued)

Reference: Pg. 51

- For the Plan Year beginning July 1, 2016, the University contribution rate is 14% of covered compensation for the non-laboratory segment of UCRP while the rate for most members is 8% of covered compensation (less $19 per month). Member rates are subject to collective bargaining for represented employees. For years in which the actual contributions are less than the total funding policy contributions, future actuarial losses are generated that will lead to increases in future total funding policy contributions. Appendix A contains projections that illustrate the effect of such actuarial losses on both future total funding policy contributions and future funded status.

Reference: Pg. 23

- In November 2015, the Regents delegated to the President of the University authority and discretion to fully fund the Actuarially Determined Contribution (ADC) for the non-laboratory segment of the Plan during fiscal years 2015-2016 through 2017-2018. For UCRP the ADC is the total funding policy contribution less expected member contributions. A transfer of $564 million from the UC Short-Term Investment Pool (STIP) to UCRP was made in November 2015. The $564 million represents an amount that along with other contributions results in full funding of the ADC for 2015-2016. The transfer is reflected in the results shown in this valuation report.

ASSETS

Reference: Pg. 7

- During the 2015-2016 Plan Year, the rate of return on the market value of assets was approximately -2%. Based on a partial recognition of this return as well as prior investment experience, the rate of return on the actuarial value of assets was 6.0%, which is less than the expected return of 7.25% for 2015-2016 (based on the July 1, 2015 valuation).

Reference: Pg. 4

- The total unrecognized investment loss as of July 1, 2016 is about $3.06 billion as compared to a $1.29 billion unrecognized gain in the previous valuation. This investment loss will be recognized in the determination of the actuarial value of assets for valuation purposes over the next few years. This means that, even if the Plan earns the current assumed rate of investment return of 7.25% per year (net of investment expenses) on a **market value** basis, then the deferred losses will be recognized over the next few years as shown in the footnote on Chart 6.
- This actuarial valuation report as of July 1, 2016 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan.

Significant Issues in Valuation Year (continued)

FUNDED RATIO

Reference: Pgs. 12-13, 25

- The Plan's funded ratio on an actuarial value basis increased from 81.7% as of July 1, 2015 to 82.6% as of July 1, 2016. This increase in funded ratio is mainly a result of the contributions funding the total funding policy contribution offset to some extent by the investment loss on the actuarial value of assets. On a market value basis, the Plan's funded ratio decreased from 83.6% as of July 1, 2015 to 78.2% as of July 1, 2016 due to the investment loss on the market value of assets. The Plan is in an underfunded position as the actuarial accrued liability exceeds the actuarial value of assets by $12.1 billion. Information on the funded ratio and unfunded actuarial accrued liability for each UCRP segment can be found on page vii.

CHANGE IN PLAN PROVISIONS

Reference: Pg. 52

- In March 2016, the Regents approved new retirement options, including a new tier ("2016 Tier") of UCRP benefits for employees hired (or in some cases rehired) on or after July 1, 2016, which will limit pensionable salary, mirroring the cap on pensionable pay for State employees under the 2013 California Public Employees' Pension Reform Act (PEPRA). New employees hired on or after July 1, 2016 will have the choice to enter the 2016 Tier (the "Pension Choice" option, which also includes supplemental benefits in the Retirement Savings Program for eligible faculty and staff) or a defined contribution plan with an employer contribution (the "Savings Choice" option). For members who elect the defined contribution plan, the University would maintain a 6.0% contribution rate on pensionable salary up to the Internal Revenue Code (IRC) limit to go towards paying down the unfunded liability of UCRP.

Reference: Pg. 42

- The 2016 Tier has been reflected in this valuation by including the plan provisions applicable to that new tier. However, the 2016 Tier has no impact on the valuation results since there were no 2016 Tier members as of July 1, 2016. Future valuations will include results for the 2016 Tier based on actual membership in that tier.

FUTURE EXPECTATIONS

- The unrecognized investment losses of $3.06 billion represent about 6% of the market value of assets. Unless offset by future investment gains or other favorable experience, the future recognition of the $3.06 billion in market losses is expected to have an impact on the Plan's future funded ratio and future total funding policy contributions. This potential impact may be illustrated as follows:
  - If the deferred losses were recognized immediately in the actuarial value of assets, the funded percentage would decrease from 82.6% to 78.2%.

    For comparison purposes, if all the deferred gains in the July 1, 2015 valuation had been recognized immediately in the July 1, 2015 valuation, the funded percentage would have increased from 81.7% to 83.6%.

Significant Issues in Valuation Year (continued)

- If the deferred losses were recognized immediately in the actuarial value of assets, the total funding policy contribution would increase from 27.99% of covered payroll to 30.34% of covered payroll.

  For comparison purposes, if all the deferred gains in the July 1, 2015 valuation had been recognized immediately in the July 1, 2015 valuation, the total funding policy contribution rate would have decreased from 28.44% of covered payroll to 27.20% of covered payroll.

Reference: Pgs. 56-70

- Appendix A presents projected valuation results for the non-laboratory segment of UCRP based on contributions already approved by the Regents ("approved contributions" which exclude future transfers from STIP or State Funding except as noted) versus the total funding policy contributions. The scenarios vary 2016-2017 investment returns and the growth in the active member population over time. Under all projections, except one (Scenario #2, low near term investment returns with approved contributions), our longer term projections show that the current assets combined with projected future contributions and investment earnings are expected to be sufficient to pay all future expected benefits for <u>all</u> plan members (both current and future). Under Scenario #2 with approved contributions, because of the 0% return assumed for 2016-2017, future assets are expected to be sufficient to pay only future expected benefits for <u>current</u> plan members. Payment of a portion of the benefits for future plan members is expected to require additional contributions to be made in the future.

DEMOGRAPHIC EXPERIENCE

Reference: Pgs. 15-16

- Overall, the number of active members increased by 3.8% from 123,768 as of July 1, 2015 to 128,513 as of July 1, 2016. The Plan has 70,077 members currently receiving benefits, an increase of 4.1% from 2015. Total monthly benefits in pay status increased by 7.1%, to a level of $237 million. There are also 81,595 terminated members in the Plan who are entitled to future benefits. Within this group of terminated members there are 34,624 terminated vested members who are entitled to a deferred or immediate vested benefit and 41,127 terminated nonvested members who are entitled to a refund of member contributions or payment of their Capital Accumulation Provision (CAP) balance. There are also 5,844 members that transferred to the LANS or LLNS defined benefit plans who will be entitled to a CAP balance payment from UCRP after they separate from employment with LANS or LLNS.

Reference: Pg. 25

- The actual average increase in salary for UCRP members that were active in this valuation and the previous valuation was 5.1%. When compared to the average assumed increase of approximately 4.5% (based on the 2015 valuation), this produced a small actuarial loss due to salary increases more than expected.

Summary of Key Valuation Results

	2016 ($ in 000s)	2015 ($ in 000s)
Total funding policy contributions:		
Percentage of payroll[1]	27.99%	28.44%
Estimated annual dollar amount[2]	$2,992,384	$2,843,357
Funding elements for Plan Year beginning July 1:		
Normal cost (beginning of year)	$1,860,181	$1,759,880
Percentage of payroll (beginning of year)	17.54%	17.73%
Percentage of payroll (middle of year)	18.16%	18.36%
Market value of assets (MVA)	$54,164,531	$55,055,447
Actuarial value of assets (AVA)	57,228,542	53,762,286
Actuarial accrued liability (AAL)	69,305,423	65,841,255
Unfunded/(Overfunded) actuarial accrued liability on AVA basis	12,076,881	12,078,969
Unfunded/(Overfunded) actuarial accrued liability on MVA basis	15,140,892	10,785,808
Funded ratio on actuarial value basis (AVA / AAL)	82.6%	81.7%
Funded ratio on market value basis (MVA / AAL)	78.2%	83.6%
Demographic data for Plan Year beginning July 1:		
Number of retired members and beneficiaries[3]	70,077	67,321
Number of vested terminated members[4]	81,595	75,165
Number of active members	128,513	123,768
Average covered compensation (actual dollars)	$92,424	$89,578

(1) *Total funding policy contributions are for the Plan Year starting one year after the date of the actuarial valuation. The total funding policy contributions shown are for the non-laboratory segment of UCRP and exclude contributions for the Lawrence Berkeley National Laboratory Segment, the Lawrence Livermore National Laboratory Retained Segment and the Los Alamos National Laboratory Retained Segment of UCRP. Page vii shows those contributions by each segment. The Normal Cost plus interest on the July 1, 2016 UAAL represents 25.71% of covered payroll.*

(2) *Based on estimated covered payroll of $10,690,905 (also in thousands) for the 2017-2018 Plan Year and $9,997,740 for the 2016-2017 Plan Year. Actual contributions are set by the Regents and will be made based on actual payroll.*

(3) *Excludes deferred retirees and deferred beneficiaries who are entitled to future benefits.*

(4) *Includes terminated nonvested members due a refund of member contributions or CAP balance payment and members that transferred to the LANS or LLNS defined benefit plans who will be entitled to a CAP balance payment from UCRP after they separate from employment with LANS or LLNS.*

FIVE-YEAR HISTORY OF TOTAL FUNDING POLICY CONTRIBUTIONS AND FUNDED STATUS

Effective with the July 1, 2008 valuation, a funding policy was adopted that determines total funding policy contributions based on the Plan's normal cost adjusted by an amortization of any surplus or underfunding.

The total funding policy contribution rate is effective for the Plan Year starting one year after the date of the actuarial valuation and applies to the non-laboratory segment of UCRP. The total funding policy contribution rate for the 2017-2018 Plan Year is based on this valuation and is 27.99% of payroll.

For the Plan Year beginning July 1, 2016, the University contribution rate is 14% of covered compensation for the non-laboratory segment of UCRP while the rate for most members is 8% of covered compensation (less $19 per month).

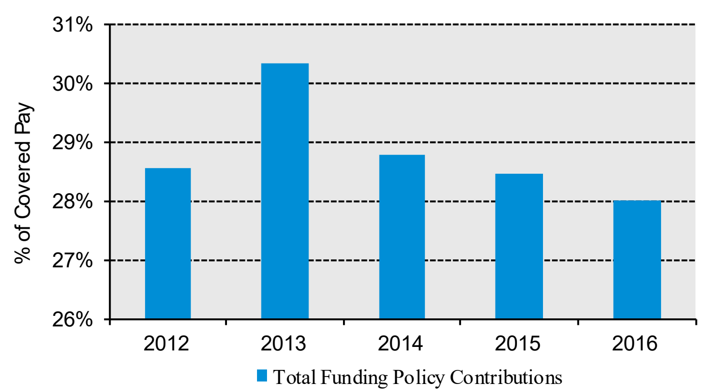
The Plan's funded percentage (actuarial value of assets divided by actuarial accrued liability) over the past five years is shown below:

Plan Year Beg. 7/1	AAL $ in Billions	AVA $ in Billions	Funded Percentage
2012	$54.6	$43.0	79%
2013	57.4	43.6	76
2014	60.4	48.3	80
2015	65.8	53.8	82
2016	69.3	57.2	83

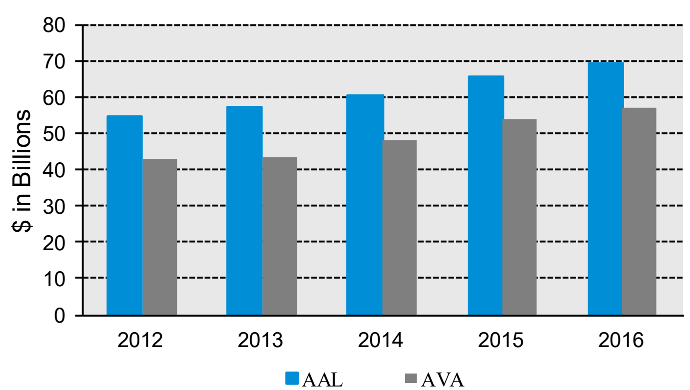
The actuarial accrued liability has shown a steady increase over the five-year period. Prior to 2014, the actuarial value of assets remained relatively level as prior investment losses were recognized and contributions had recently restarted. From 2014 to 2016, the actuarial value of assets mainly increased due to the recognition of prior investment gains and contributions that have approximately funded the total funding policy contribution.

The first graph shows a five-year history of the total funding policy contributions (non-laboratory segment of UCRP). The second graph shows the five-year history of the funded status – actuarial accrued liability versus the actuarial value of assets.

Five-Year History of Total Funding Policy Contributions Based on July 1 Actuarial Valuation Date



Five-Year History of Actuarial Accrued Liability and Actuarial Value of Assets for Plan Years Beginning July 1



Summary of UCRP July 1, 2016 Valuation Results by Segment ($ in 000s)

	Total UCRP	Campus and Medical Centers[1]	Lawrence Berkeley National Laboratory (LBNL)	Lawrence Livermore National Laboratory (LLNL)	Los Alamos National Laboratory (LANL)
Normal Cost (beginning of year)	$1,860,181	$1,811,445	$48,736	$0	$0
Market value of assets (MVA)	54,164,531	46,128,942	2,039,427	3,302,301	2,693,861
Actuarial value of assets (AVA)	57,228,542	48,738,401	2,154,769	3,489,110	2,846,262
Actuarial accrued liability (AAL)	69,305,423	59,870,968	2,257,466	3,942,906	3,234,083
Unfunded/(Overfunded) actuarial accrued liability on AVA basis	12,076,881	11,132,567	102,697	453,796	387,821
Unfunded/(Overfunded) actuarial accrued liability on MVA basis	15,140,892	13,742,026	218,039	640,605	540,222
Funded Ratio on AVA basis (AVA/AAL)	82.6%	81.4%	95.5%	88.5%	88.0%
Funded Ratio on MVA basis (MVA/AAL)	78.2%	77.0%	90.3%	83.8%	83.3%
Estimated Covered Payroll for 2016-2017 Plan Year	$10,607,630	$10,329,377	$278,253	$0	$0
Estimated Covered Payroll for 2017-2018 Plan Year	10,978,897	10,690,905	287,992	0	0
Total funding policy contributions[2]					
Percent of payroll[3]		27.99%	N/A	N/A	N/A
Estimated dollar amount in 000s		$2,992,384	N/A	N/A	N/A
Required Contractual Contributions[4]					
Percent of pay or dollar amount in 000s		N/A	11.9%	$145,049	$128,042

(1) *Includes Hasting College of Law*

(2) *All total funding policy contributions are based on valuation results as of July 1, 2016. Please see Section 2, page 10 for more detailed information on this calculation.*

(3) *The total funding policy contributions shown for the campus and medical centers and LBNL segments are for the Plan Year beginning July 1, 2017. Actual contributions for these two segments will be set by the Regents.*

(4) *The contributions shown for the LLNL and LANL Retained Segments are required (subject to available funding by the National Nuclear Security Agency (NNSA)) for the Plan Year beginning July 1, 2016 under the terms of the University's contracts with the Department of Energy, and are due by February 28, 2018. They are not included in the asset values shown above. The Contractual Contributions shown for the LBNL segment are based on the actual employer contribution rate of 14% of payroll adjusted by the funded ratios of the campus and medical centers segment and the LBNL segment. It is effective for the Plan Year beginning July 1, 2017 and the estimated annual dollar amount of the contribution is $34,271 (also in thousands). The LBNL segment UAAL contribution rate on behalf of new hires in the defined contribution plan ("Savings Choice") effective July 1, 2017 is 3.9% of pay up to the IRC limit.*

Note: Results may not add due to rounding.

Important Information about Actuarial Valuations

In order to prepare an actuarial valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report (as well as the plan summary included in our funding valuation report) to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the University of California (UC). Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by UC.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The valuation is prepared at the request of UC. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If UC is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.

- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Plan should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

SECTION 2: Valuation Results for the University of California Retirement Plan

A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographics of covered members, including active members, vested terminated members, retired members, disabled members and beneficiaries.

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B and C.

A historical perspective of how the participant population has changed over the past ten valuations can be seen in this chart.

CHART 1

Member Population: 2007 – 2016

Year Beginning July 1	Active Members	Terminated Vested Members[(1)]	Retired Members, Disabled Members and Beneficiaries[(2)]	Ratio of Retirees to Actives
2007	118,885	59,056	47,682	0.40
2008	114,242	64,566	50,171	0.44
2009	115,745	54,883	51,653	0.45
2010	114,928	55,037	53,902	0.47
2011	115,568	60,903	56,296	0.49
2012	116,888	67,318	58,934	0.50
2013	118,321	73,589	61,715	0.52
2014	120,568	78,229	64,191	0.53
2015	123,768	75,165	67,321	0.54
2016	128,513	81,595	70,077	0.55

(1) *Includes terminated nonvested members due a refund of member contributions or CAP balance payment and members that transferred to the LANS or LLNS defined benefit plans who will be entitled to a CAP balance payment from UCRP after they separate from employment with LANS or LLNS.*

(2) *Excludes deferred retirees and deferred beneficiaries who are entitled to future benefits.*

Active Members

Plan costs and liabilities are affected by the age, service credit and covered compensation of active members. In this year's valuation, there are 128,513 active members with an average age of 44.6 years, average service credit of 9.2 years and average covered compensation of $92,424.

Inactive Members

In this year's valuation, there were 81,595 terminated members. Within this group of terminated members there are 34,624 members with a vested right to a deferred or immediate vested benefit and 41,127 terminated nonvested members who are entitled to a return of their member contributions or a distribution of their CAP balance. There are also 5,844 members that transferred to the LANS or LLNS defined benefit plans who will be entitled to a CAP balance payment from UCRP after they separate from employment with LANS or LLNS.

These graphs show a distribution of active members by age and by service credit. In Chart 3 there are 332 members who have 40 or more years of service credit.

CHART 2

Distribution of Active Members by Age as of July 1, 2016

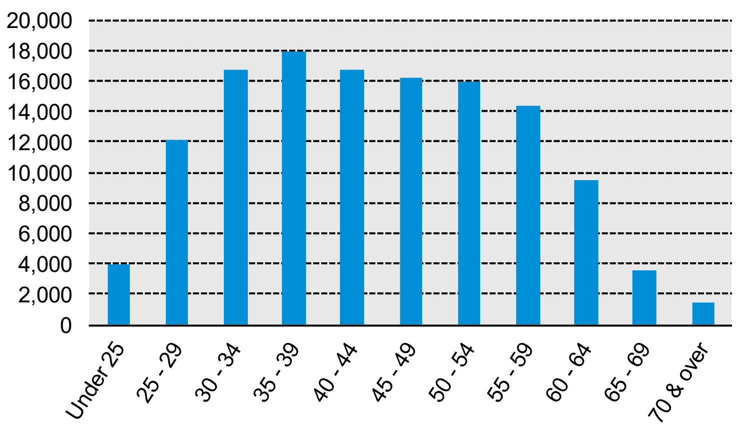
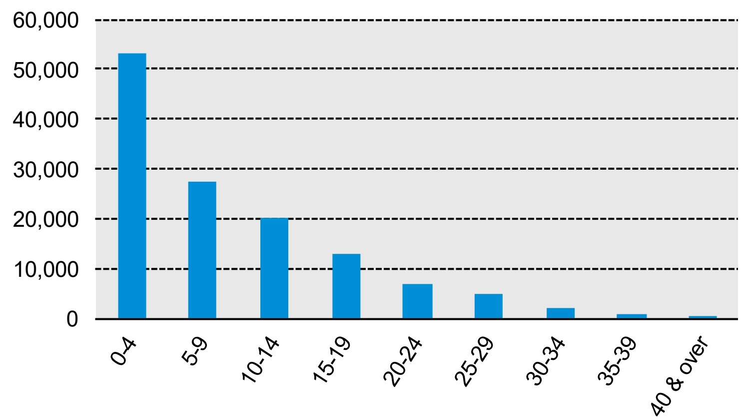


CHART 3

Distribution of Active Members by Service Credit as of July 1, 2016



Retired Members, Disabled Members and Beneficiaries
As of July 1, 2016, 60,178 retired members (excludes 4 deferred retirees), 1,519 disabled members and 8,380 beneficiaries (excludes 112 deferred beneficiaries) were receiving total monthly benefits of $236,575,569.

These graphs show a distribution of the current retired members, disabled members and beneficiaries based on their monthly benefit and age.

CHART 4

Distribution of Retired Members, Disabled Members and Beneficiaries by Monthly Benefit as of July 1, 2016

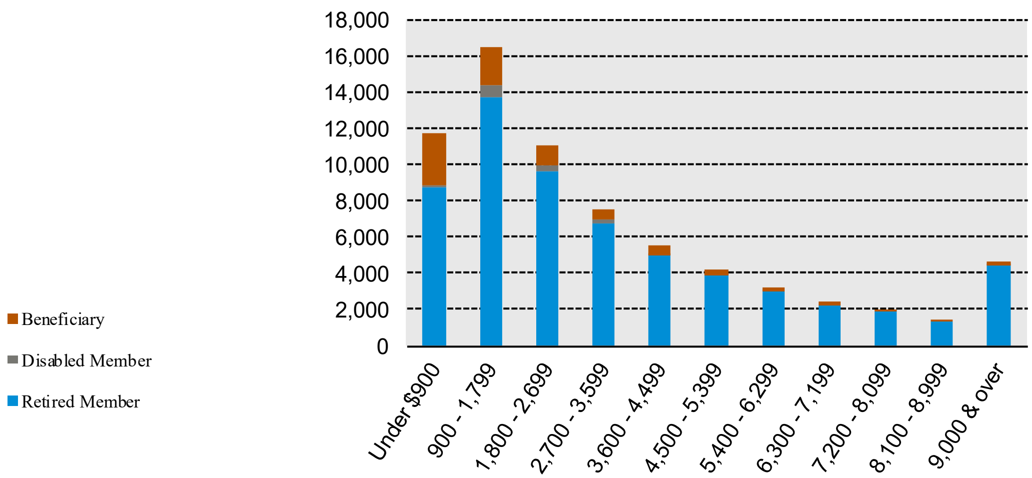
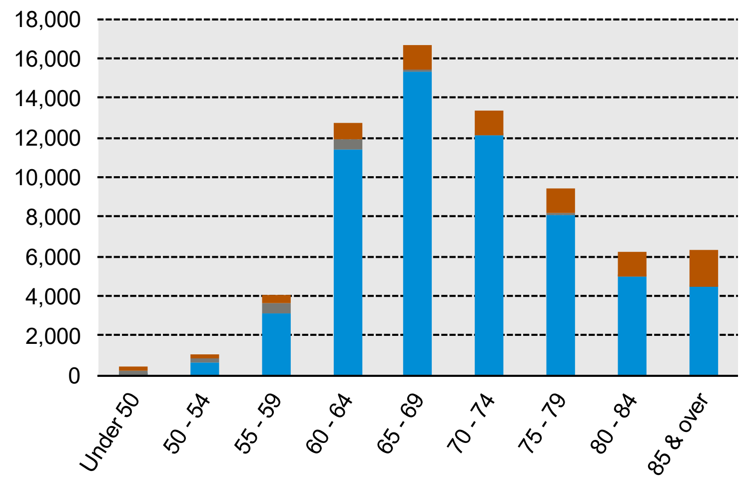


CHART 5

Distribution of Retired Members, Disabled Members and Beneficiaries by Age as of July 1, 2016



B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both contributions (net of administration expenses) and investment earnings (net of investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information for UCRP, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits D and E.

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Regents have approved an asset valuation method for UCRP that smoothes market value investment gains and losses over a five-year period. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset values and the plan costs are more stable.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 6

Determination of Actuarial Value of Assets for Year Ended June 30, 2016 ($ in 000s)

	From	To	Total Actual Market Return (net)	Expected Market Return (net)	Investment Gain/(Loss)[1]	Deferred Factor	Unrecognized Return[2]
	7/2011	6/2012	$115,864	$3,133,623	$(3,017,759)	0.0	$0
	7/2012	6/2013	4,833,339	3,086,770	1,746,569	0.2	349,314
	7/2013	6/2014	8,009,979	3,379,298	4,630,681	0.4	1,852,272
	7/2014	6/2015	1,993,802	3,969,206	(1,975,404)	0.6	(1,185,243)
	7/2015	6/2016	(1,104,655)	3,995,788	(5,100,443)	0.8	(4,080,354)
1.	Total Unrecognized Return[3]						$(3,064,011)
2.	Market Value of Assets						54,164,531
3.	Actuarial Value of Assets (Item 2 – Item 1)						$57,228,542
4.	Actuarial Value of Assets as a Percentage of Market Value (Item 3 ÷ Item 2)						105.7%

(1) *Total return minus expected return, both on a market value basis.*

(2) *Recognition at 20% per year over 5 years.*

(3) *Deferred return as of June 30, 2016 recognized in each of the next four years:*

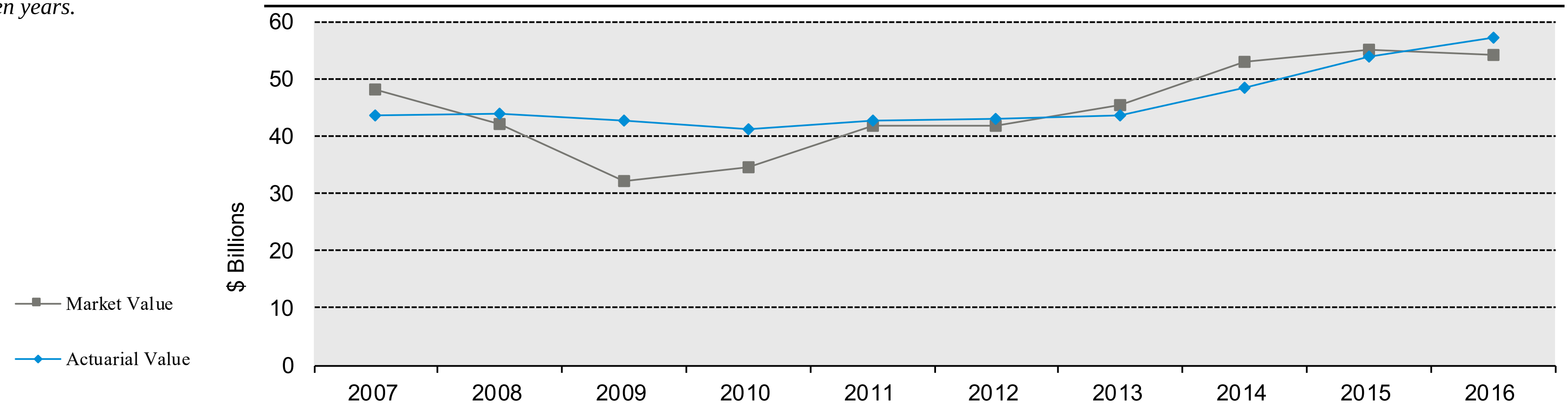
(a) Amount Recognized during 2016/2017	$(139,720)
(b) Amount Recognized during 2017/2018	(489,033)
(c) Amount Recognized during 2018/2019	(1,415,169)
(d) Amount Recognized during 2019/2020	(1,020,089)
	$(3,064,011)

Both the actuarial value and market value of assets are representations of the Plan's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial value of assets is significant because UCRP's liabilities are compared to the actuarial value of assets to determine what portion, if any, remains unfunded or overfunded. Amortization of any unfunded or overfunded liability is an important element in determining future contribution rates.

This chart shows the change in the actuarial value of assets versus the market value over the past ten years.

CHART 7

Market Value of Assets vs. Actuarial Value of Assets for Years Ended June 30, 2007 – 2016



C. ACTUARIAL EXPERIENCE

To calculate contribution rates, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution rate will decrease from the previous year. On the other hand, the contribution rate will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution rates to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution rate is adjusted to take into account a change in experience anticipated for all future years.

The components of the total loss of $0.5 billion are shown below. The net experience loss from sources other than investments and contributions was 0.1% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

CHART 8

Actuarial Experience for Year Ended June 30, 2016

		($ in 000s)
1.	Net gain from contributions more than expected under funding policy	$244,132
2.	Net (loss) from investments[1]	(649,517)
3.	Net (loss) from salary increases greater than assumed	(34,940)
4.	Net (loss) from other experience[2]	(40,057)
5.	Net experience (loss): (1) + (2) + (3) + (4)[3]	$(480,382)

(1) *Details in Chart 9.*
(2) *See Section 3, Exhibit F. Does not include the effect of Plan or assumption changes, if any.*
(3) *Non-laboratory segment amount is an actuarial experience loss of $450,296*

Investment Rate of Return
A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on UCRP's investment policy. For valuation purposes, the assumed rate of return was 7.25% for the 2015-2016 Plan Year (based on the July 1, 2015 valuation). As shown below, the actual rate of return on the actuarial value of assets for the 2015-2016 Plan Year was 6.04%.

Since the actual return for the year was less than the assumed return, the Plan experienced an actuarial loss during the year ended June 30, 2016 with regard to its investments, when measured based on the actuarial value of assets. The amount of this loss is derived below.

This chart shows the gain/(loss) due to investment experience.

CHART 9

Market and Actuarial Value Investment Experience for Year Ended June 30, 2016

	Market Value ($ in 000s)	Actuarial Value ($ in 000s)
1. Actual return	$(1,104,655)	$3,252,517
2. Average value of assets[1]	55,114,317	53,821,156
3. Actual rate of return: (1) ÷ (2)	(2.00%)	6.04%
4. Assumed rate of return	7.25%	7.25%
5. Expected return: (2) x (4)	$3,995,788	$3,902,034
6. Actuarial gain/(loss): (1) – (5)	(5,100,443)	(649,517)

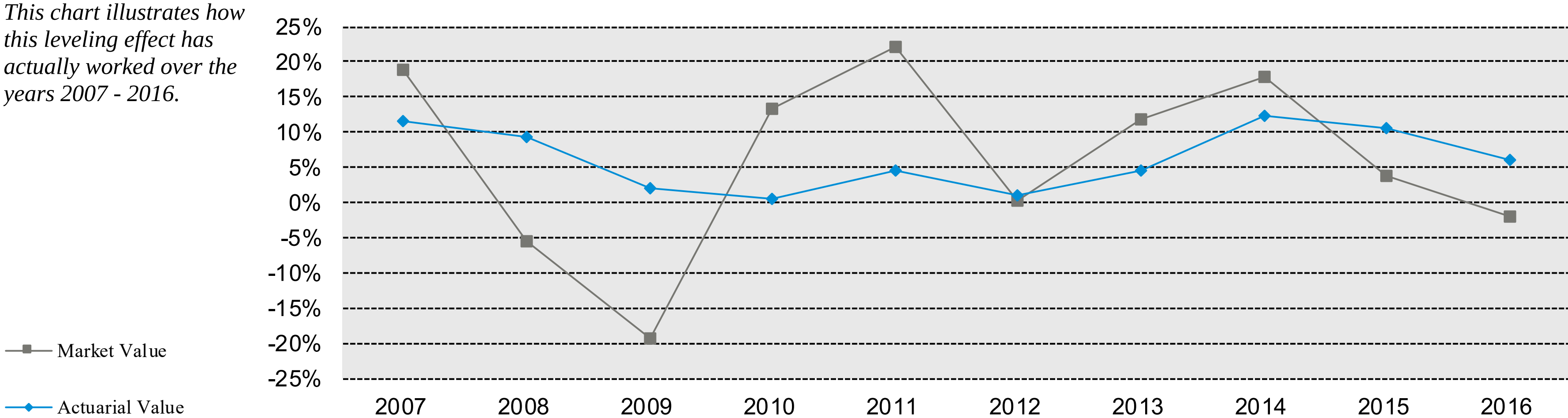
(1) *Assumes that non-investment cash-flows (i.e., benefit payments, contributions, and administrative expenses) all occur at mid-year on average. The exception is that State Funding is assumed to occur at the end of the year.*

In the preceding subsection B we described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this method is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs. This effect is clear in the chart below, where the year-to-year returns on actuarial value are less volatile than the returns on market value.

CHART 10

Market and Actuarial Rates of Return for Years Ended June 30, 2007 - 2016

This chart illustrates how this leveling effect has actually worked over the years 2007 - 2016.



Other Experience
There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the members,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net loss from this other experience for the year ended June 30, 2016 amounted to $75 million which is 0.1% of the actuarial accrued liability. Of this amount, $35 million was due to salary increases greater than assumed.

D. TOTAL FUNDING POLICY CONTRIBUTION

Effective with the July 1, 2008 valuation, a funding policy was adopted that determines total funding policy contributions based on the Plan's normal cost adjusted by an amortization of any surplus (overfunding) or underfunding, with contributions starting for the Plan Year beginning July 1, 2009.

The total funding policy contribution is based on various amortization periods for different components of the UAAL as of July 1, 2016 as shown in Section 3, Exhibit H. It reflects the changes to amortization periods adopted by the Regents effective with the July 1, 2015 valuation. The amortization periods for amortization bases established in valuations prior to 2015 were not affected.

The calculation of the total funding policy contribution rates for the current and prior valuation are shown below.

This total funding policy contribution rate applies to the non-laboratory segment of UCRP (i.e., campuses, medical centers and Hastings College of Law). Contributions for the laboratories are subject to the terms of the University's contracts with the Department of Energy. For more information on the various UCRP segments please see Section 1, page vii. For more details on the UCRP funding policy please see Section 4, Exhibit IV.

The chart shows the calculation of the total funding policy contribution for the non-laboratory segment of UCRP.

CHART 11
Total Funding Policy Contribution (Non-Laboratory Segment of UCRP)

	Actuarial Valuation Date			
	July 1, 2016 ($ in 000s)		July 1, 2015 ($ in 000s)	
	Amount	% of Payroll	Amount	% of Payroll
1. Normal cost (beginning of year)	$1,811,445	17.54%	$1,712,887	17.73%
2. Actuarial value of assets	48,738,401		45,533,323	
3. Actuarial accrued liability	59,870,968		56,433,239	
4. Unfunded/(Overfunded) actuarial accrued liability	11,132,567		10,899,916	
5. Amortization of Unfunded/(Overfunded) actuarial accrued liability[(1)]	980,164	9.49%	939,758	9.73%
6. Total funding policy contribution rate, before timing adjustment: (1) + (5)		27.03%		27.46%
7. Total funding policy contribution rate, adjusted for timing[(2)]		27.99%		28.44%
8. Estimated total funding policy contribution amount[(3)]	$2,992,384		$2,843,357	

(1) *Layered amortization of unfunded actuarial accrued liability (UAAL). See Section 3, Exhibit H for more details.*

(2) *Total funding policy contribution includes an adjustment to account for contributions made throughout the year. No additional adjustment is included to account for contributions not starting until the beginning of the next Plan Year.*

(3) *The total funding policy contributions shown are for the non-laboratory segment of UCRP and are based on estimated covered payroll of $10,690,905 (also in thousands) for the 2017-2018 Plan Year and $9,997,740 for the 2016-2017 Plan Year. Actual contributions are set by the Regents and will be made based on actual payroll.*

The total funding policy contribution rates as of July 1, 2016 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4 and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Total Funding Policy Contribution Rate

The chart below details the changes in the total funding policy contribution rate for the non-laboratory segment of UCRP from the prior valuation to the current year's valuation.

The chart reconciles the total funding policy contribution rate from the prior valuation to the rate determined in this valuation.

CHART 12

Reconciliation of Total Funding Policy Contribution Rate from July 1, 2015 to July 1, 2016

Total Funding Policy Contribution Rate as of July 1, 2015	28.44%
Effect of contributions more than those determined under funding policy as of July 1, 2015	-0.17%
Effect of investment loss	0.50%
Effect of losses on individual salary increases greater than assumed	0.03%
Effect of increase in total payroll on UAAL amortization rate	-0.65%
Effect of lower normal cost of 2013 Tier and Modified 2013 Tier	-0.19%
Effect of other experience[1]	0.03%
Total change	-0.45%
Total Funding Policy Contribution Rate as of July 1, 2016	27.99%

[1] *Includes effect of differences in actual versus expected experience including mortality, disability, withdrawal and retirement experience.*

E. FUNDED RATIO

A commonly reported piece of information regarding the Plan's financial status is the funded ratio. These ratios compare the actuarial value of assets and market value of assets to the actuarial accrued liabilities of the Plan as calculated. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors. The chart below depicts a history of the funded ratio for the Plan. Chart 14 on the next page shows the Plan's schedule of funding progress for the last ten years.

The funded status measures shown in this valuation are appropriate for assessing the need for or amount of future contributions. However, they are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations. As the chart below shows, the measures are different depending on whether the actuarial or market value of assets is used. The chart below depicts a history of the funded ratios for the Plan.

CHART 13

Funded Ratio (Plan Year Beginning July 1)

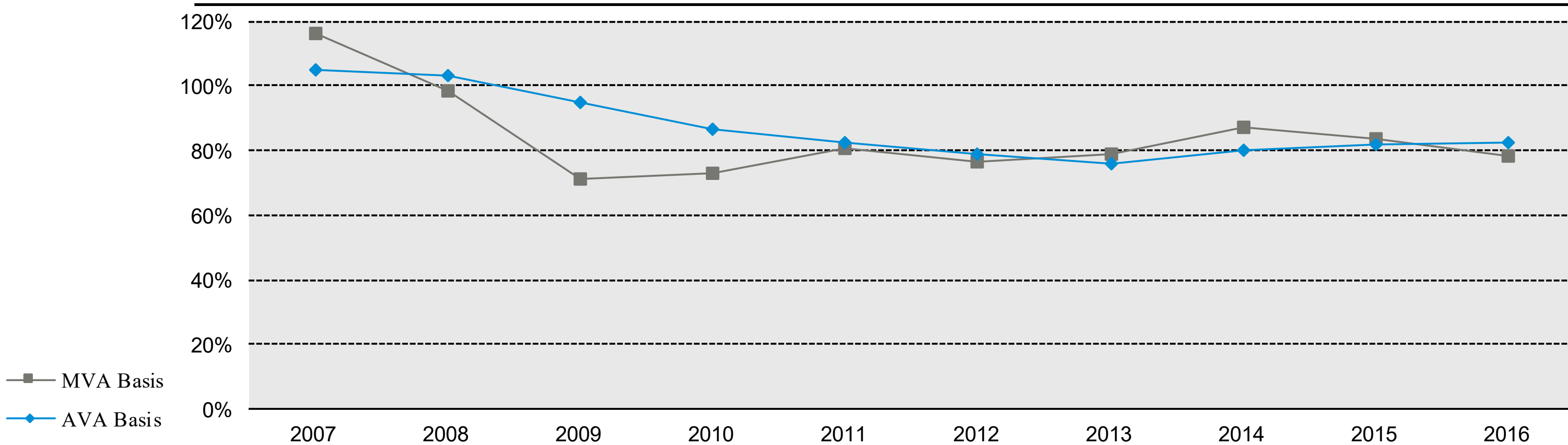


CHART 14

Schedule of Funding Progress ($ in 000s)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Projected Covered Payroll (c)	UAAL as a Percentage of Projected Covered Payroll [(b) - (a)] / (c)
07/01/2007[1]	$43,433,936	$41,436,576	$(1,997,360)	104.8%	$7,612,726	(26.2%)
07/01/2008	43,840,272	42,576,822	(1,263,450)	103.0%	7,468,809	(16.9%)
07/01/2009	42,798,773	45,160,525	2,361,752	94.8%	7,873,694	30.0%
07/01/2010	41,195,318	47,504,309	6,308,991	86.7%	7,995,421	78.9%
07/01/2011	42,757,271	51,831,306	9,074,035	82.5%	8,163,021	111.2%
07/01/2012	42,965,028	54,619,620	11,654,592	78.7%	8,598,114	135.5%
07/01/2013	43,572,353	57,380,961	13,808,608	75.9%	8,836,498	156.3%
07/01/2014	48,327,981	60,417,177	12,089,196	80.0%	9,299,817	130.0%
07/01/2015	53,762,286	65,841,255	12,078,969	81.7%	9,927,833	121.7%
07/01/2016	57,228,542	69,305,423	12,076,881	82.6%	10,607,630	113.9%

(1) *Beginning in 2007, covered payroll is reduced to anticipate members who leave active status during the year.*

F. VOLATILITY RATIOS

Retirement plans are subject to volatility in the level of total funding policy contributions. This volatility tends to increase as retirement plans become more mature.

The Asset Volatility Ratio (AVR), which is equal to the market value of assets divided by total payroll, provides an indication of the potential funding policy contribution volatility for any given level of investment volatility. A higher AVR indicates that the plan is subject to a greater level of funding policy contribution volatility. This is a current measure since it is based on the current level of assets.

For UCRP, the current AVR is about 5.1. This means that a 1% asset gain/(loss) (relative to the assumed investment return) translates to about 5.1% of one-year's payroll. Since UCRP amortizes actuarial gains and losses over a period of 20 years, there would be a 0.5% of payroll decrease/(increase) in the total funding policy contribution for each 1% asset gain/(loss).

The Liability Volatility Ratio (LVR), which is equal to the Actuarial Accrued Liability divided by payroll, provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. This is because, over an extended period of time, the plan's assets should track the plan's liabilities. For example, if a plan is 50% funded on a market value basis, the liability volatility ratio would be double the asset volatility ratio and the plan sponsor should expect contribution volatility to increase over time as the plan becomes better funded.

The LVR also indicates how volatile contributions will be in response to changes in the Actuarial Accrued Liability due to actual experience or to changes in assumptions.

For UCRP, the current LVR is about 6.5. This is about 27% higher than the AVR. Therefore, we would expect that funding policy contribution volatility will increase over the long-term.

This chart shows how the asset and liability volatility ratios have varied over time.

CHART 15

Volatility Ratios for Years Ended June 30, 2009 – 2016

Year Ended June 30	Asset Volatility Ratio	Liability Volatility Ratio
2009	4.1	5.7
2010	4.3	5.9
2011	5.1	6.3
2012	4.9	6.4
2013	5.1	6.5
2014	5.7	6.5
2015	5.5	6.6
2016	5.1	6.5

SECTION 3: Supplemental Information from the Valuation of the University of California Retirement Plan

EXHIBIT A

Table of Plan Coverage

i. Active Members

Category	Year Beginning July 1: 2016	Year Beginning July 1: 2015	Change From Prior Year
1976 Tier members:(1)			
Number	88,154	96,278	-8.4%
Average age	48.2	47.3	N/A
Average service credit	12.6	11.7	7.7%
Total covered compensation	$8,768,926,657	$9,100,880,932	-3.6%
Average covered compensation	$99,473	$94,527	5.2%
2013 Tier members:(2)(3)			
Number	25,450	17,710	43.7%
Average age	37.6	36.9	N/A
Average service credit	1.8	1.4	28.6%
Total covered compensation	$1,963,479,842	$1,279,376,802	53.5%
Average covered compensation	$77,150	$72,240	6.8%
Modified 2013 Tier members:(2)(4)			
Number	14,510	9,385	54.6%
Average age	34.9	34.3	N/A
Average service credit	1.5	1.2	25.0%
Total covered compensation	$1,104,024,437	$667,092,289	65.5%
Average covered compensation	$76,087	$71,081	7.0%
Safety members:			
Number	399	395	1.0%
Average age	42.3	42.1	N/A
Average service credit	9.8	9.7	1.0%
Total covered compensation	$41,210,571	$39,526,007	4.3%
Average covered compensation	$103,285	$100,066	3.2%
All active members:			
Number	128,513	123,768	3.8%
Average age	44.6	44.8	N/A
Average service credit	9.2	9.4	-2.1%
Total covered compensation	$11,877,641,507	$11,086,876,030	7.1%
Average covered compensation	$92,424	$89,578	3.2%

(1) *Includes 6 members with Tier Two Benefits and 437 members whose 1976 Tier service is not coordinated with Social Security.*

(2) *Includes multi-tier members earning future Service Credit under this tier.*

(3) *Includes 13 members whose 1976 Tier service is not coordinated with Social Security.*

(4) *Includes 1 members whose 1976 Tier service is not coordinated with Social Security.*

EXHIBIT A

Table of Plan Coverage
ii. Nonactive Members

Category	Year Beginning July 1[1] 2016	2015	Change From Prior Year
Terminated vested members:			
Number	34,624	34,166	1.3%
Average age	49.3	49.3	N/A
Total monthly benefit[2]	$54,660,432	$52,751,825	3.6%
Average monthly benefit	$1,579	$1,544	2.3%
Terminated nonvested members:[3]			
Number	46,971	40,999	14.6%
Average member refund and CAP balance	$5,994	$5,635	6.4%
Retired members:			
Number in pay status[4]	60,178	57,581	4.5%
Average age	71.2	71.0	N/A
Total monthly benefit	$214,368,236	$199,887,086	7.2%
Average monthly benefit	$3,562	$3,471	2.6%
Disabled members:			
Number in pay status	1,519	1,620	-6.2%
Average age	58.0	57.7	N/A
Total monthly benefit	$3,052,405	$3,138,977	-2.8%
Average monthly benefit	$2,009	$1,938	3.7%
Beneficiaries (includes Eligible Survivors, Contingent Annuitants, and Spouses/Domestic Partners):			
Number in pay status[5]	8,380	8,120	3.2%
Average age	74.4	74.3	N/A
Total monthly benefit	$19,154,928	$17,845,186	7.3%
Average monthly benefit	$2,286	$2,198	4.0%

Note: Monthly benefits shown include temporary Social Security Supplement

(1) *CAP balances total $1.189 billion as of July 1, 2016 and $1.208 billion as of July 1, 2015 for all members.*

(2) *Benefit is calculated based on assumed retirement age (age 60 as of July 1, 2016 and July 1, 2015 for all Tiers) or current age if later.*

(3) *For July 1, 2016, includes 5,844 members that transferred to the LANS or LLNS defined benefit plans who will be entitled to a CAP balance payment from UCRP after they separate employment with LANS or LLNS. For July 1, 2015, 6,156 members were included.*

(4) *Excludes 4 deferred retirees as of July 1, 2016 who are entitled to future benefits.*

(5) *Excludes 112 deferred beneficiaries as of July 1, 2016 who are entitled to future benefits. For July 1, 2015, 114 deferred beneficiaries were excluded.*

EXHIBIT B

Active Members and Average Covered Compensation as of July 1, 2016
By Age and Service Credit

i. All Active Members

		Service Credit								
Age	**Total**	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & over**
Under 25	3,937	3,928	9	- -	- -	- -	- -	- -	- -	- -
	$47,942	$47,952	$43,720	- -	- -	- -	- -	- -	- -	- -
25 - 29	12,134	11,063	1,050	21	- -	- -	- -	- -	- -	- -
	62,734	62,828	62,014	$49,356	- -	- -	- -	- -	- -	- -
30 - 34	16,774	11,390	4,509	856	19	- -	- -	- -	- -	- -
	78,286	78,704	79,093	68,884	$59,432	- -	- -	- -	- -	- -
35 - 39	17,915	9,273	5,298	2,787	552	5	- -	- -	- -	- -
	87,944	86,554	93,852	83,782	75,582	$90,730	- -	- -	- -	- -
40 - 44	16,730	5,839	5,028	3,762	1,776	318	7	- -	- -	- -
	94,890	89,474	101,102	99,337	87,286	86,051	$92,303	- -	- -	- -
45 - 49	16,227	4,145	3,858	4,156	2,683	1,070	305	10	- -	- -
	97,859	90,995	96,070	103,459	104,452	96,466	85,193	$72,244	- -	- -
50 - 54	15,926	3,235	3,072	3,318	2,963	1,845	1,184	294	15	- -
	99,900	91,525	94,456	98,584	108,308	116,466	96,104	90,653	$94,318	- -
55 - 59	14,389	2,293	2,326	2,514	2,469	1,889	1,793	824	275	6
	104,605	96,590	93,522	95,999	106,175	123,330	120,082	106,084	96,422	$74,499
60 - 64	9,434	1,408	1,578	1,728	1,556	1,128	1,104	645	261	26
	112,716	99,858	96,909	100,032	107,594	125,618	139,225	154,754	123,173	84,783
65 - 69	3,584	477	579	634	562	356	410	285	223	58
	128,507	109,149	102,625	111,574	119,097	139,048	151,808	173,462	182,711	163,621
70 & over	1,463	164	174	190	150	126	142	135	140	242
	166,391	123,510	123,424	138,736	149,313	160,093	179,603	198,847	207,249	212,425
Total	128,513	53,215	27,481	19,966	12,730	6,737	4,945	2,193	914	332
	$92,424	$79,161	$92,423	$96,944	$103,529	$117,301	$120,763	$132,643	$142,055	$191,410

Average Age: 44.6

Average Service Credit: 9.2

EXHIBIT B

Active Members and Average Covered Compensation as of July 1, 2016
By Age and Service Credit

ii. 1976 Tier Active Members (including active members with Tier Two Benefits)

		Service Credit								
Age	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	135	126	9	- -	- -	- -	- -	- -	- -	- -
	$47,272	$47,526	$43,720	- -	- -	- -	- -	- -	- -	- -
25 - 29	3,379	2,332	1,026	21	- -	- -	- -	- -	- -	- -
	64,316	65,536	61,850	$49,356	- -	- -	- -	- -	- -	- -
30 - 34	8,157	2,989	4,316	834	18	- -	- -	- -	- -	- -
	78,886	81,487	79,160	68,625	$56,810	- -	- -	- -	- -	- -
35 - 39	11,147	2,864	5,030	2,707	541	5	- -	- -	- -	- -
	90,128	92,365	93,836	83,844	75,248	$90,730	- -	- -	- -	- -
40 - 44	12,588	2,029	4,798	3,691	1,751	312	7	- -	- -	- -
	97,302	94,535	101,310	99,352	87,380	85,219	$92,303	- -	- -	- -
45 - 49	13,204	1,449	3,687	4,073	2,639	1,047	299	10	- -	- -
	99,684	94,323	96,132	103,700	104,530	96,296	84,747	$72,244	- -	- -
50 - 54	13,559	1,159	2,933	3,226	2,929	1,833	1,174	290	15	- -
	101,254	92,950	94,357	98,298	108,400	116,557	95,927	90,116	$94,318	- -
55 - 59	12,729	861	2,225	2,442	2,442	1,876	1,783	819	275	6
	105,557	96,836	93,252	95,664	106,330	123,569	119,873	106,215	96,422	$74,499
60 - 64	8,558	624	1,528	1,707	1,546	1,120	1,104	642	261	26
	113,954	101,042	96,778	99,905	107,363	125,379	139,225	154,661	123,173	84,783
65 - 69	3,310	232	567	625	557	354	410	285	222	58
	130,165	111,924	102,816	111,146	119,296	138,624	151,808	173,462	182,108	163,621
70 & over	1,388	97	171	188	150	126	142	135	137	242
	168,169	120,085	123,498	138,793	149,313	160,093	179,603	198,847	206,099	212,425
Total	88,154	14,762	26,290	19,514	12,573	6,673	4,919	2,181	910	332
	$99,473	$87,195	$92,414	$96,912	$103,601	$117,338	$120,713	$132,701	$141,475	$191,410

Average Age: 48.2

Average Service Credit: 12.6

EXHIBIT B

Active Members and Average Covered Compensation as of July 1, 2016
By Age and Service Credit

iii. 2013 Tier Active Members (including multi-tier active members earning future Service Credit under the 2013 Tier)

		Service Credit								
Age	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	2,100	2,100	- -	- -	- -	- -	- -	- -	- -	- -
	$44,328	$44,328	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	4,735	4,723	12	- -	- -	- -	- -	- -	- -	- -
	53,984	53,986	$53,050	- -	- -	- -	- -	- -	- -	- -
30 - 34	5,367	5,251	111	5	- -	- -	- -	- -	- -	- -
	73,807	73,913	69,434	$59,859	- -	- -	- -	- -	- -	- -
35 - 39	4,776	4,586	153	32	5	- -	- -	- -	- -	- -
	84,436	84,477	86,822	66,623	$87,015	- -	- -	- -	- -	- -
40 - 44	2,786	2,593	141	40	11	1	- -	- -	- -	- -
	88,839	88,596	93,113	94,075	64,589	$171,062	- -	- -	- -	- -
45 - 49	1,979	1,785	110	50	23	10	1	- -	- -	- -
	92,642	93,179	88,804	86,248	93,208	70,373	$85,853	- -	- -	- -
50 - 54	1,602	1,414	98	60	20	5	4	1	- -	- -
	98,053	97,782	90,611	114,673	105,724	85,368	116,841	$48,177	- -	- -
55 - 59	1,174	1,007	80	52	19	9	5	2	- -	- -
	103,982	103,767	100,222	110,797	95,299	93,521	191,673	95,815	- -	- -
60 - 64	654	598	29	12	7	7	- -	1	- -	- -
	108,375	106,792	99,694	127,118	150,023	172,410	- -	341,753	- -	- -
65 - 69	213	191	7	7	5	2	- -	- -	1	- -
	118,484	115,603	120,789	154,593	96,907	214,175	- -	- -	$316,490	- -
70 & over	64	57	3	1	- -	- -	- -	- -	3	- -
	144,954	138,957	119,192	219,602	- -	- -	- -	- -	259,764	- -
Total	25,450	24,305	744	259	90	34	10	4	4	- -
	$77,150	$76,374	$88,060	$100,292	$97,213	$111,133	$151,158	$145,390	$273,946	- -

Average Age: 37.6

Average Service Credit: 1.8

EXHIBIT B

Active Members and Average Covered Compensation as of July 1, 2016
By Age and Service Credit

iv. Modified 2013 Tier Active Members (including multi-tier active members earning future Service Credit under the Modified 2013 Tier)

		Service Credit								
Age	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	1,693	1,693	- -	- -	- -	- -	- -	- -	- -	- -
	$52,372	$52,372	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	3,978	3,971	7	- -	- -	- -	- -	- -	- -	- -
	71,598	71,580	$81,747	- -	- -	- -	- -	- -	- -	- -
30 - 34	3,196	3,126	64	6	- -	- -	- -	- -	- -	- -
	84,043	84,024	87,235	$59,882	- -	- -	- -	- -	- -	- -
35 - 39	1,923	1,810	93	19	1	- -	- -	- -	- -	- -
	83,565	82,615	105,187	69,853	$52,298	- -	- -	- -	- -	- -
40 - 44	1,298	1,209	72	12	5	- -	- -	- -	- -	- -
	84,003	82,795	102,544	103,896	61,399	- -	- -	- -	- -	- -
45 - 49	982	905	50	21	5	- -	1	- -	- -	- -
	82,638	81,329	103,667	91,695	78,308	- -	$47,154	- -	- -	- -
50 - 54	700	635	37	21	6	1	- -	- -	- -	- -
	76,786	74,311	112,265	89,965	75,160	$68,542	- -	- -	- -	- -
55 - 59	459	414	15	19	7	2	- -	2	- -	- -
	79,411	78,289	93,370	99,325	74,226	46,682	- -	$68,864	- -	- -
60 - 64	209	182	15	7	3	1	- -	1	- -	- -
	74,838	72,699	95,863	64,157	127,381	65,889	- -	74,853	- -	- -
65 - 69	61	54	5	2	- -	- -	- -	- -	- -	- -
	73,521	74,394	55,540	94,910	- -	- -	- -	- -	- -	- -
70 & over	11	10	- -	1	- -	- -	- -	- -	- -	- -
	66,727	68,678	- -	47,218	- -	- -	- -	- -	- -	- -
Total	14,510	14,009	358	108	27	4	1	3	- -	- -
	$76,087	$75,404	$99,928	$86,309	$77,908	$56,949	$47,154	$70,860	- -	- -

Average Age: 34.9

Average Service Credit: 1.5

EXHIBIT B

Active Members and Average Covered Compensation as of July 1, 2016
By Age and Service Credit

v. Active Safety Members

		Service Credit								
Age	**Total**	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & over**
Under 25	9	9	- -	- -	- -	- -	- -	- -	- -	- -
	$67,968	$67,968	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	42	37	5	- -	- -	- -	- -	- -	- -	- -
	82,475	81,518	$89,562	- -	- -	- -	- -	- -	- -	- -
30 - 34	54	24	18	11	1	- -	- -	- -	- -	- -
	92,045	87,576	93,835	$97,542	$106,617	- -	- -	- -	- -	- -
35 - 39	69	13	22	29	5	- -	- -	- -	- -	- -
	99,969	87,080	98,488	106,013	104,944	- -	- -	- -	- -	- -
40 - 44	58	8	17	19	9	5	- -	- -	- -	- -
	105,766	99,981	102,409	104,642	111,206	$120,921	- -	- -	- -	- -
45 - 49	62	6	11	12	16	13	4	- -	- -	- -
	116,855	95,629	113,346	113,844	115,877	130,206	$127,889	- -	- -	- -
50 - 54	65	27	4	11	8	6	6	3	- -	- -
	111,781	107,496	96,432	111,114	106,040	122,565	116,923	$156,709	- -	- -
55 - 59	27	11	6	1	1	2	5	1	- -	- -
	111,025	109,132	104,795	81,592	159,777	109,291	123,012	93,431	- -	- -
60 - 64	13	4	6	2	- -	- -	- -	1	- -	- -
	124,902	114,167	119,278	171,934	- -	- -	- -	107,522	- -	- -
65 - 69	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
70 & over	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	399	139	89	85	40	26	15	5	- -	- -
	$103,285	$92,050	$101,365	$107,640	$112,358	$125,048	$121,877	$134,216	- -	- -

Average Age: 42.3

Average Service Credit: 9.8

EXHIBIT C

Reconciliation of Member Data

	Active Members	Terminated Vested Members[1]	Retired Members[2]	Disabled Members	Beneficiaries[3]	Total
Number as of July 1, 2015	123,768	75,165	57,581	1,620	8,120	266,254
New members	19,257	0	0	0	629	19,886
Terminations – with vested rights	(10,933)	10,933	0	0	0	0
Terminations – without vested rights[4]	(1,550)	(1,568)	0	0	0	(3,118)
Retirements	(2,714)	(975)	3,838	(149)	0	0
Disabilities	(58)	(25)	(18)	101	0	0
Lump Sum Cashouts	(400)	(615)	(10)	(19)	(26)	(1,070)
Returned to work	1,263	(1,244)	(18)	(1)	0	0
Died with or without beneficiary	(120)	(83)	(1,199)	(29)	(354)	(1,785)
Data adjustments	0	7	4	(4)	11	22
Number as of July 1, 2016	128,513	81,595	60,178	1,519	8,380	280,189

(1) *Includes terminated nonvested members due a refund of member contributions or CAP balance payment and members that transferred to the LANS or LLNS defined benefit plans who will be entitled to a CAP balance payment from UCRP after they separate employment with LANS or LLNS.*

(2) *Excludes deferred retirees who are entitled to future benefits.*

(3) *Excludes deferred beneficiaries who are entitled to future benefits.*

(4) *Includes those members who terminated and received a refund of member contributions or a distribution of their CAP balance.*

EXHIBIT D

Summary Statement of Income and Expenses (Actuarial Value Basis)

	Year Ended June 30, 2016 ($ in 000s)		Year Ended June 30, 2015 ($ in 000s)	
Contribution income:				
Employer contributions[1]	$2,522,683		$2,510,046	
Members contributions	845,036		793,012	
Less administration expense	(48,339)		(48,286)	
Net contribution income		$3,319,380		$3,254,772
Investment income:				
Interest and dividends	$803,889		$790,374	
Recognition of capital appreciation	2,419,926		4,340,349	
Securities lending income	37,000		29,002	
Securities lending fees and rebates	(10,069)		(5,246)	
Net investment income		3,250,746		5,154,479
Other income		1,771		2,047
Total income available for future benefits		$6,571,897		$8,411,298
Less benefit payments		$(3,105,641)		$(2,976,993)
Change in assets available for future benefits		$3,466,256		$5,434,305

(1) *Including State Prop 2 Funds and STIP Transfers, $96.0 million and $563.5 million respectively for 2015-2016 and $0 and $700.0 million respectively for 2014-2015.*

EXHIBIT E
Summary Statement of Assets

	Year Ended June 30, 2016 ($ in 000s)		Year Ended June 30, 2015 ($ in 000s)	
Cash equivalents		$2,011,069		$2,680,390
Accounts receivable:				
Contributions	$118,236		$157,531	
Interest and dividends	70,494		67,335	
Investment of cash collateral	3,735,547		3,083,733	
Securities sales and other	117,042		86,240	
Total accounts receivable		$4,041,319		$3,394,839
Investments:				
Equity securities	$15,963,057		$18,117,042	
Fixed income securities	11,762,648		11,293,626	
Real estate	2,975,587		3,194,878	
Commingled funds	22,546,329		20,684,668	
Derivative investments	25,031		28,687	
Total investments at market value		53,272,652		53,318,901
Total assets		$59,325,040		$59,394,130
Less accounts payable:				
Payable for securities purchased	$(1,132,742)		$(970,309)	
Member withdrawals, refunds and other payables	(293,312)		(284,601)	
Collateral held for securities lending	(3,734,455)		(3,083,773)	
Total accounts payable		$(5,160,509)		$(4,338,683)
Net assets at market value		$54,164,531		$55,055,447
Net assets at actuarial value (for comparison purposes)		$57,228,542		$53,762,286

EXHIBIT F

Development of Unfunded/(Overfunded) Actuarial Accrued Liability ($ in 000s)

		Year Ended June 30, 2016
1. Unfunded/(Overfunded) actuarial accrued liability at beginning of year		$12,078,969
2. Normal cost at beginning of year		1,759,880
3. Expected total funding policy and required contractual contributions		(3,132,127)
4. Interest		
(a) For whole year on (1) + (2)	$1,003,317	
(b) For partial year on (3)	(113,540)	
(c) Total interest		889,777
5. Expected Unfunded/(Overfunded) actuarial accrued liability		11,596,499
6. Changes due to:		
(a) Gain from contributions more than expected under funding policy	$(244,132)	
(b) Loss from investments	649,517	
(c) Loss from individual salary increases greater than assumed	34,940	
(d) Loss from other experience	40,057	
(e) Total changes[1]		480,382
7. Unfunded/(Overfunded) actuarial accrued liability at end of year		$12,076,881

(1) *Non-laboratory segment amount is an actuarial experience loss of $450,296*

EXHIBIT G
Actuarial Liabilities

	July 1, 2016 ($ in 000s)	July 1, 2015 ($ in 000s)
Actuarial Accrued Liability		
Members in pay status		
Retirees[1]	$30,660,665	$28,801,741
Beneficiaries[2]	2,203,161	2,065,958
Disableds	654,341	676,679
Total in pay status	$33,518,167	$31,544,378
Active members		
1976 Tier members	$29,193,355	$28,409,310
2013 Tier members	673,039	353,667
Modified 2013 Tier members	309,432	146,222
Safety	155,183	148,647
Total actives	$30,331,009	$29,057,846
Terminated members		
Vested	$5,174,693	$5,008,018
Nonvested	281,554	231,013
Total terminated	$5,456,247	$5,239,031
Total actuarial accrued liability	$69,305,423	$65,841,255
Actuarial Present Value of Projected Benefits		
Members in pay status[1]	$33,518,167	$31,544,378
Active members	46,341,107	44,185,454
Terminated members	5,456,247	5,239,031
Total present value of projected benefits	$85,315,521	$80,968,863

(1) *For July 1, 2016, includes a liability of $57.6 million for Lump Sum Cashouts, CAP balance payments and refunds of member contributions that were paid on or after July 1, 2016. For July 1, 2015, includes a liability of $65.6 million for Lump Sum Cashouts, CAP balance payments and refunds of member contributions that were paid on or after July 1, 2015.*

(2) *Includes liability for deferred beneficiaries.*

EXHIBIT H

Table of Amortization Bases as of July 1, 2016 (Non-Laboratory Segment of UCRP - $ in 000s)

Type	Date Established	Initial Years	Initial Amount	Annual Payment[1]	Years Remaining	Outstanding Balance
Actuarial Loss[2]	07/01/2010	30	$5,389,886	$416,227	24	$5,009,525
Actuarial Loss	07/01/2011	30	905,208	69,867	25	853,907
Change in Assumptions	07/01/2011	15	1,513,127	157,872	10	1,175,592
Plan Amendment	07/01/2011	15	(59,179)	(6,174)	10	(45,978)
Actuarial Loss	07/01/2012	30	2,457,582	189,587	26	2,350,073
Actuarial Loss	07/01/2013	30	1,866,282	143,901	27	1,807,086
Actuarial Gain	07/01/2014	30	(886,657)	(68,334)	28	(868,454)
Actuarial Gain	07/01/2015	20	(1,440,456)	(129,251)	19	(1,406,267)
Change in Assumptions	07/01/2015	20	1,850,713	166,064	19	1,806,787
Actuarial Loss	07/01/2016	20	450,296	40,405	20	450,296
Total				$980,164		$11,132,567

(1) *Level dollar amount. Payment shown is as of beginning of year. The amounts shown are based on results for the non-laboratory segment of UCRP (i.e., campuses, medical centers and Hastings College of Law). They are used in the determination of the total funding policy contribution shown in Section 2, Chart 11, page 10. For more details on the UCRP funding policy please see Section 4, Exhibit IV.*

(2) *The July 1, 2010 amortization bases were combined into a single amortization base and amortized over 30 years as a level dollar amount.*

Note: Effective with the July 1, 2015 valuation the Regents approved a change to the amortization periods used for actuarial experience gains and changes in actuarial assumptions to be 20 years. The amortization periods for amortization bases established in prior valuations are not affected.

The average effective remaining amortization period as of July 1, 2016 was 20.86 years.

EXHIBIT I

Section 415 Limitations

Section 415 of the Internal Revenue Code (IRC) specifies the maximum benefits that may be paid to an individual from a defined benefit plan and the maximum amounts that may be allocated each year to an individual's account in a defined contribution plan.

A qualified pension plan may not pay benefits in excess of the Section 415 limits. The ultimate penalty for non-compliance is disqualification: active participants could be taxed on their vested benefits and the IRS may seek to tax the income earned on the plan's assets.

In particular, Section 415(b) of the IRC limits the maximum annual benefit payable at the Normal Retirement Age to a dollar limit indexed for inflation. That limit is $210,000 for 2015 and 2016. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must be adjusted based on each participant's circumstances, form of benefits chosen and after tax contributions.

The University pays benefits in excess of the limits through a 415(m) Restoration Plan. These costs are excluded in this valuation.

Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard.

EXHIBIT J
Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial Assumptions: The estimates on which the cost of the Plan is calculated including:

(a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;

(b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;

(c) Retirement rates — the rate or probability of retirement at a given age; and

(d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal Cost: The amount required to fund the level cost allocated to the current year of service.

Actuarial Accrued Liability for Actives: The accumulated value of normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability for Pensioners: The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and of the interest which the sum is expected to earn before it is entirely paid out in benefits.

Unfunded (Overfunded) Actuarial Accrued Liability: The extent that the actuarial accrued liability of the Plan exceeds (or is exceeded by) the actuarial value of assets of the Plan.

Actuarial Value of Assets: The dollar amount of assets for purposes of calculating the total funding policy contribution determined under the actuarial asset valuation method adopted by the Regents.

Amortization of the Unfunded (Overfunded) Actuarial Accrued Liability:	Payments made over a period of years equal in value to the Plan's unfunded or overfunded actuarial accrued liability.
Investment Return:	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return reflects a smoothing of market gains and losses to avoid significant swings in the value of assets from one year to the next.
Beneficiary:	Used for statistical purposes only; includes Eligible Survivors, Contingent Annuitants and Spouses/Domestic Partners

SECTION 4: Reporting Information and Projections from the Valuation of the University of California Retirement Plan

EXHIBIT I

Summary of Actuarial Valuation Results as of July 1, 2016 ($ in 000s)

The valuation was made with respect to the following data supplied to us:			
1.	Retired members as of the valuation date (including 8,380 beneficiaries in pay status)[1]		70,077
2.	Members inactive during year ended June 30, 2016 with vested rights[2]		81,595
3.	Members active during the year ended June 30, 2016		128,513
The actuarial factors as of the valuation date are as follows:			
1.	Normal cost (beginning of year)		$1,860,181
2.	Present value of future benefits		85,315,521
3.	Present value of future normal costs		16,010,098
4.	Actuarial accrued liability		69,305,423
	Retired members and beneficiaries[3]	$33,518,167	
	Inactive members with vested rights[2]	5,456,247	
	Active members	30,331,009	
5.	Actuarial value of assets ($54,164,531 at market value as reported by the UCOP)		57,228,542
6.	Unfunded actuarial accrued liability		$12,076,881

(1) *Excludes deferred retirees and deferred beneficiaries who are entitled to future benefits.*

(2) *Includes terminated nonvested members due a refund of member contributions or CAP balance payment and members that transferred to the LANS or LLNS defined benefit plans who will be entitled to a CAP balance payment from UCRP after they separate from employment with LANS or LLNS.*

(3) *Includes liability for deferred retirees and deferred beneficiaries.*

EXHIBIT I (continued)

Summary of Actuarial Valuation Results as of July 1, 2016 ($ in 000s)

The determination of the normal cost is as follows:	**Dollar Amount[1]**	**% of Payroll[2]**
1. Total normal cost (middle of year)	$1,926,433	18.16%
2. Expected employee contributions (middle of year)	-842,472	-7.94%
3. Employer normal cost: (1) + (2)	$1,083,961	10.22%

(1) *Based on estimated covered payroll of $10,607,630 (also in thousands) for the 2016-2017 Plan Year.*

(2) *For 1976 Tier members, the total normal cost as a percentage of payroll (middle of year) is 18.67%.*
For 2013 Tier members, the total normal cost as a percentage of payroll (middle of year) is 16.07%.
For Modified 2013 Tier members, the total normal cost as a percentage of payroll (middle of year) is 17.10%.
For Safety members, the total normal cost as a percentage of payroll (middle of year) is 25.25%.
For Tier Two members, the total normal cost as a percentage of payroll (middle of year) is 9.34%.

EXHIBIT II

Actuarial Assumptions and Methods

Rationale for Assumptions:	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2010 through June 30, 2014 Actuarial Experience Study dated August 17, 2015.
Economic Assumptions	
Net Investment Return:	7.25% (including 3.00% for inflation)
Consumer Price Index:	Increase of 3.00% per year; COLA increases are assumed to be 2.00% per year.
Administrative Expenses:	0.50% of payroll added to normal cost.
Increase in 401(a)(17) Compensation Limit:	Increase of 3.0% per year from the valuation date.
Increase in 415 Dollar Limit:	Increase of 3.0% per year from the valuation date.

Salary Increases:

Annual Rate of Compensation Increase

Inflation: 3.00% per year, plus “across the board” salary increases of 0.50% per year, plus the following merit and promotional increases:

Years of Service	Faculty	Staff and Safety
Less than 1	2.65%	2.60%
1	2.65	2.40
2	2.65	2.20
3	2.65	2.00
4	2.65	1.85
5	2.65	1.65
6	2.60	1.45
7	2.55	1.35
8	2.50	1.25
9	2.40	1.15
10	2.35	1.05
11	2.30	0.95
12	2.20	0.85
13	2.10	0.75
14	2.00	0.65
15	1.90	0.55
16	1.80	0.45
17	1.70	0.40
18	1.60	0.35
19	1.45	0.30
20 & over	1.25	0.25

Payroll Growth: Inflation of 3.00% per year plus “across the board” real salary increases of 0.50% per year.

Demographic Assumptions

Pre – Retirement Mortality Rates: RP-2014 White Collar Employee Mortality Table projected with the two-dimensional MP2014 projection scale to 2029.

Post – Retirement Mortality Rates:

Healthy: RP-2014 White Collar Healthy Annuitant Mortality Table projected with the two-dimensional MP2014 projection scale to 2029. Ages are then set forward one year for males (from the male table) and females (from the female table).

Disabled: RP-2014 Disabled Retiree Mortality Table projected with the two-dimensional MP2014 projection scale to 2029. Ages are then set back one year for males (from the male table) and set forward 5 years for females (from the female table).

The RP-2014 mortality tables projected with the two-dimensional MP2014 projection scale to 2019 and adjusted as noted above reasonably reflects the projected mortality experience as of the measurement date. The additional projection to 2029 is a provision for future mortality improvement.

Sample Termination Rates Before Retirement:

	Rate (%)					
	Healthy Mortality(1)		Disabled Mortality(2)		Disability Incidence(3)	
Age	Male	Female	Male	Female	Male	Female
20	0.02	0.01	0.50	0.20	0.01	0.01
25	0.03	0.01	0.73	0.26	0.02	0.02
30	0.03	0.02	0.64	0.34	0.03	0.03
35	0.03	0.02	0.74	0.46	0.04	0.04
40	0.04	0.03	0.86	0.75	0.07	0.08
45	0.06	0.05	1.24	1.00	0.10	0.16
50	0.10	0.08	1.59	1.25	0.17	0.26
55	0.16	0.12	1.88	1.45	0.25	0.33
60	0.28	0.18	2.21	1.73	0.28	0.38
65	0.49	0.26	2.59	2.29	0.20	0.28

(1) *All pre-retirement deaths are assumed to be non-duty related.*
(2) *Assumed to apply only when valuing UCRP Disability Income.*
(3) *All disabilities are assumed to be non-duty related.*

Sample Termination Rates Before Retirement (continued):

	Rate (%) Withdrawal[1]	
Years of Service	**Faculty**	**Staff and Safety**
Less than 1	20.00	21.00
1	13.00	17.00
2	8.50	14.00
3	7.00	11.00
4	5.75	9.00
5	5.75	8.25
6	5.50	7.25
7	5.25	6.75
8	5.00	6.25
9	4.75	5.75
10	4.25	5.25
11	4.00	5.00
12	3.75	4.75
13	3.50	4.50
14	3.25	4.25
15	3.00	4.00
16	2.75	3.75
17	2.50	3.50
18	2.25	3.25
19	2.00	3.00
20 & over	1.75	2.75

[1] *The greater of a refund of member contributions and a deferred annuity or lump sum is valued when a member withdraws. No withdrawal is assumed after a member is first assumed to retire.*

Retirement Rates:

Retirement Probability – Unisex

Age	1976 Tier Faculty	2013 Tier Faculty	1976 Tier Staff[1]	Modified 2013 Tier Staff[1]	2013 Tier Staff[1]	Safety
50	2.00%	0.00%	3.50%	2.00%	0.00%	20.00%
51	1.00	0.00	2.50	1.50	0.00	15.00
52	1.00	0.00	2.75	1.50	0.00	10.00
53	1.00	0.00	2.75	1.50	0.00	15.00
54	1.00	0.00	3.50	2.00	0.00	15.00
55	2.00	2.00	4.00	2.00	5.00	25.00
56	2.00	1.00	5.00	2.50	1.50	25.00
57	2.00	1.00	5.00	3.00	2.00	25.00
58	2.00	1.00	7.00	3.50	2.50	25.00
59	3.00	1.00	9.00	5.00	3.00	25.00
60	5.00	2.00	12.00	12.00	3.50	25.00
61	5.00	2.00	14.00	10.00	6.00	30.00
62	5.00	2.00	16.00	10.00	9.00	40.00
63	5.00	2.00	16.00	10.00	10.00	50.00
64	7.00	3.00	20.00	12.00	12.00	60.00
65	9.00	20.00	25.00	40.00	40.00	100.00
66	10.00	13.00	22.00	30.00	30.00	100.00
67	11.00	15.00	22.00	30.00	45.00	100.00
68	12.00	15.00	22.00	30.00	30.00	100.00
69	15.00	15.00	22.00	22.00	30.00	100.00
70	15.00	15.00	20.00	20.00	20.00	100.00
71	12.00	12.00	20.00	20.00	20.00	100.00
72	12.00	12.00	20.00	20.00	20.00	100.00
73	12.00	12.00	20.00	20.00	20.00	100.00
74	12.00	12.00	20.00	20.00	20.00	100.00
75	100.00	100.00	100.00	100.00	100.00	100.00

(1) *These rates apply for those with ten to twenty years of service. For ages under 65, 70% of these rates will be used for those with less than ten years of service and 160% of these rates will be used for those with twenty or more years of service, with the exception that the age 64 rate is set equal to the age 63 rate for those with twenty or more years of service.*

Members with Tier Two Benefits:	Assumptions specific to the 1976 Tier are also applied to Members with Tier Two Benefits.
Retirement Age for Deferred Vested Members:	Deferred vested members are assumed to retire at age 60.
Benefit for Terminated Nonvested Members:	Immediate refund of member contribution and CAP balance.
Disability Income Cross Over Age:	Members receiving Disability Income are assumed to "cross over" at age 65.
Form of Payment:	1976 Tier members not electing a Lump Sum Cashout: • Life annuity for members without an Eligible Survivor; • 25% contingent annuity for 1976 Tier members with Social Security who have an Eligible Survivor; • 50% contingent annuity for 1976 Tier members without Social Security who have an Eligible Survivor; • 50% contingent annuity for Members with Safety Benefits who have an Eligible Survivor. 2013 Tier members are assumed to elect a life annuity. Modified 2013 Tier members not electing a Lump Sum Cashout are assumed to elect a life annuity. It is also assumed that some 1976 and Modified 2013 Tier members elect a Lump Sum Cashout (see Lump Sum Assumptions).
Future Benefit Accruals:	1.0 year of service per year for the full-time employees. Part-time employees are assumed to earn full-time service for all future years.
Definition of Active Members:	All members of UCRP who are not separated from active membership as of the valuation date or have not started receiving a monthly pension on or before the valuation date.

Percent with Eligible Survivors: 80% of male members and 60% of female members are assumed to have Eligible Survivors at time of decrement.

Eligible Survivor Ages: Members assumed to have an opposite sex Eligible Spouse or Eligible Domestic Partner, with females three years younger than males.

Number of Survivors (Samples):

	Number of Survivors per Active Member with Survivors	
Age	Male	Female
20	1.0	1.0
25	1.8	2.1
30	2.2	2.7
35	2.7	2.8
40	3.0	2.4
45	2.8	2.1
50	2.5	1.7
55	2.0	1.4
60	1.5	1.2
65	1.3	1.1

Actuarial Methods

Actuarial Value of Assets: The market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual and the expected returns on a market value basis and is recognized over a five-year period.

For the actuarial value of assets allocated to the non-laboratory segment, this is approximated as the total UCRP actuarial value multiplied by the ratio of the market value of the non-laboratory segment allocated assets to the total UCRP market value.

Actuarial Cost Method: Entry Age Actuarial Cost Method. Entry Age is calculated as the valuation date minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salaries as if the current benefit accrual rate has always been in effect (i.e., replacement life).

Covered Payroll: Covered compensation for a Plan Year is determined by annualizing actual payroll for the prior Plan Year increased by the assumed rate of salary growth. Covered payroll is covered compensation reduced to anticipate members who leave active status during the year.

<u>Other Actuarial Assumptions</u>

Lump Sum Assumptions:

Conversion Basis:

Discount Rate: 7.25%

COLA: 2.00%

Mortality: RP-2014 White Collar Healthy Annuitant Mortality Table projected with the two-dimensional MP2014 projection scale to 2029, and with ages then set forward one year; weighted 40% male and 60% female.

Take-rate for Members Eligible to Elect a Lump Sum Cashout:

Percent of Members Eligible to Elect a Lump Sum Cashout Assumed to Elect a Lump Sum Cashout

Years of Service	Actives	Inactives	Disability Crossovers
5 & under	45.0%	45.0%	17.0%
6	42.0%	45.0%	17.0%
7	40.0%	45.0%	17.0%
8	35.0%	45.0%	17.0%
9	25.0%	42.0%	17.0%
10	20.0%	42.0%	13.0%
11	18.0%	40.0%	13.0%
12	16.0%	40.0%	13.0%
13	14.0%	40.0%	13.0%
14	12.0%	40.0%	13.0%
15 – 19	11.0%	40.0%	10.0%
20 – 24	7.0%	30.0%	7.0%
25 – 29	5.0%	20.0%	5.0%
30 & over	4.0%	15.0%	4.0%

Approximations:	
Sick Leave	Only for purposes of determining projected benefits, service has been increased by 0.15% for Faculty, 1.50% for Staff, and 1.90% for Safety members to account for unused sick leave. This assumption applies only for members retiring from active membership and not electing a Lump Sum Cashout. For all other benefits there is assumed to be no conversion of unused sick leave to service credit.
Changes in Actuarial Assumptions:	There were no changes in actuarial assumptions or methods since the prior valuation.

EXHIBIT III

Summary of Plan Provisions

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all Plan provisions.

Effective Date:	April 24, 1954. Includes amendments through July 1, 2016.
Covered Employees:	Generally all employees who are not members of another retirement system to which the Regents contribute, and who: a. Are appointed to work 50% time or more for one year or longer or b. Have generally accumulated at least 1,000 hours in a 12-month period.
Membership Classification:	Members are divided into four classes: (1) Members with Coordinated Benefits (covered under Social Security); (2) Members with Noncoordinated Benefits (not covered under Social Security); (3) Members with Tier Two Benefits; and (4) Members with Safety Benefits. The classes of Members with Coordinated Benefits and Members with Noncoordinated Benefits have the following member tiers: the 1976 Tier, the 2013 Tier, the Modified 2013 Tier, and the 2016 Tier. Generally, members hired before July 1, 2013 accrue service under the 1976 Tier. Members who are represented by the CNA, UPTE, and AFSCME bargaining units, who were hired (or rehired after a break in service) on or after July 1, 2013 and before July 1, 2016 accrue service under the Modified 2013 Tier, while all others hired on or after July 1, 2013 and before July 1, 2016 accrue service under the 2013 Tier. Generally, members hired on or after July 1, 2016 who elect to be covered under UCRP, accrue service under the 2016 Tier. A member who has service credit in two or more tiers is referred to as a multi-tier member. Unless otherwise noted, the Plan provisions for Members with Tier Two Benefits are the same as those shown for 1976 Tier Members.

Highest Average Plan Compensation (HAPC):	Highest average monthly full-time-equivalent base compensation rate received during any period of 36 consecutive months.
Compensation Limit:	
1976 Tier Service, 2013 Tier Service, Modified 2013 Tier Service and Safety Service	Annual compensation is limited based on Internal Revenue Code (IRC) Section 401(a)(17). The limit for the Plan Year beginning July 1, 2016 is $265,000 for employees who became members on or after July 1, 1994. The limit is $395,000 for those active members who became employees before July 1, 1994. The compensation limit is indexed for inflation on an annual basis.
2016 Tier Service	Annual compensation is limited similar to the limit prescribed by the California Public Employees' Pension Reform Act of 2013 (PEPRA). The limit for the Plan Year beginning July 1, 2016 is $117,020 ($140,424 for members with Noncoordinated benefits). The PEPRA compensation limit is indexed for inflation on an annual basis.
Age Factor:	Percentage of HAPC per year of service credit (interpolated for fractional ages).
1976 Tier Service and Modified 2013 Tier Service	

Age	Factor	Age	Factor
50	1.10%	56	1.94%
51	1.24	57	2.08
52	1.38	58	2.22
53	1.52	59	2.36
54	1.66	60+	2.50
55	1.80		

2013 Tier and 2016 Tier Service

Age	Factor	Age	Factor
55	1.10%	61	1.94%
56	1.24	62	2.08
57	1.38	63	2.22
58	1.52	64	2.36
59	1.66	65+	2.50
60	1.80		

Safety Service 3.0% at all ages 50 and above.

Tier Two Service Equal to one-half of the Age Factor for 1976 Tier Service.

Benefit Percentage: Age Factor multiplied by years of service credit.

Basic Retirement Income (BRI):

1976 Tier Members with Social Security Benefit Percentage x HAPC in excess of $133 per month.

All other Members, except Multi-Tier Members Benefit Percentage x HAPC.

Multi-Tier Members The applicable benefit percentages from the 1976 Tier, the 2013 Tier, the Modified 2013 Tier and the 2016 Tier are multiplied by HAPC or HAPC - $133, if applicable.

These benefits are subject to a limit of 100% of HAPC or HAPC - $133, if applicable.

Service Retirement:	
Eligibility	Age 50 (age 55 for the 2013 Tier and the 2016 Tier) with 5 years of service credit, or Age 62 regardless of service credit if membership began on or before July 1, 1989, or Retirement on Normal Retirement Date.
Benefit	BRI.
Form of Payment	Single Life Annuity plus any Postretirement Survivor Continuance.
Payment Options	Full continuance to contingent annuitant; two-thirds continuance to contingent annuitant; one-half continuance to contingent annuitant; one-half continuance (including Postretirement Survivor Continuance) to surviving spouse or domestic partner (for 1976 Tier Members with Social Security only).
Lump Sum Cashout	May be elected in lieu of non-2013 or 2016 Tier monthly retirement income.
Temporary Social Security Supplement:	
Eligibility	For 1976 Tier Members with Social Security and retirement must occur before age 65.
Benefit	Annuity in the amount of $133 per month multiplied by 1976 Tier Benefit Percentage.
Form of Payment	Temporary Single Life Annuity plus any Postretirement Survivor Continuance payable to age 65.
Payment Options	None.
Disability Income:	
Eligibility	Disablement after five years of service credit; Safety members are eligible for duty disability without regard to years of service credit. Service credit continues to accrue during disabled period.
Benefit	
1976 Tier Members without Social Security and Members with Safety Benefits (Non-duty)	25% of final salary, plus 5% of final salary per year of service credit greater than two, total not to exceed 40% of final salary, plus 5% of final salary for each eligible child, total not to exceed 20% of final salary.
1976 Tier Members with Social Security	15% of final salary, plus 2.5% of final salary per year of service credit greater than two, total not to exceed 40% of final salary, less $106.40 per month.

2013 Tier Members, Modified 2013 Tier Members and 2016 Tier Members	13.1% of final salary, plus 1.7% of final salary per year of service credit greater than five, total not to exceed 25% of final salary.
Multi-Tier Members	Benefit calculated for each tier is multiplied by the ratio of service credit accrued under that tier to total service. Not less than the result under the 1976 Tier benefit formula using 1976 Tier service only.
Members with Safety Benefits (Duty)	50% of HAPC, or non-duty disability benefit if greater.
Form of Payment	Single life annuity payable until end of disability income period or retirement date if earlier.
Disability Income Period	
Members disabled before November 5, 1990	The earliest of: Date member is eligible to retire and retirement income equals or exceeds disability income; Age 62 (age 67 for members without Social Security); or Date member retires.
Members disabled on or after November 5, 1990	If under age 65 at disablement: 1976 Tier members with Social Security, 2013 Tier members, Modified 2013 Tier members and 2016 Tier members: to age 65 or five years if longer. 1976 Tier members without Social Security and Safety members: to age 67 or five years if longer. If age 65 or older at disablement: to age 70 or 12 months if longer. Disability income ends if member is no longer disabled.

Vested Termination:

Eligibility	Five years of service credit, or age 62 regardless of service credit if membership began on or before July 1, 1989.
Benefit	BRI beginning at age 50 or later, calculated using HAPC at termination date, adjusting for CPI changes (see Cost-of-Living Adjustment), and benefit formula in effect when benefits commence. 2013 Tier and 2016 Tier benefits cannot commence earlier than age 55. HAPC for the 2013 Tier, the Modified 2013 Tier and the 2016 Tier benefit is not adjusted for CPI changes.
Form of Payment	Same as for service retirement.
Payment Options	Same as for service retirement.
Refund Option	Member may elect a refund of contributions with interest, thereby forfeiting all other benefits.
Lump Sum Cashout	May be elected in lieu of non-2013 or 2016 Tier retirement income, available only if at least age 50 with five years service credit at date of termination.

Preretirement Survivor Income:

Eligibility	Eligible survivor of deceased active or disabled member with two or more years of service credit; no service requirement for duty-related death of Safety member.
Benefit	
1976 Tier Members without Social Security and Members with Safety Benefits (Non-duty death)	Percent of final salary as follows:

Eligible Survivors	Percent	Minimum Benefit
1	25.0%	$200
2	35.0	$300
3	40.0	$300 plus 5% of final salary
4	45.0	$300 plus 10% of final salary
5+	50.0	$300 plus 15% of final salary

1976 Tier Members with Social Security	25% of final salary less $106.40 per month.

2013 Tier Members, Modified 2013 Tier Members and 2016 Tier Members	15% of final salary.
Multi-Tier Members	Benefit calculated for each tier is multiplied by the ratio of service credit accrued under that tier to total service.
Members with Safety Benefits (Duty death)	Percentage of HAPC as follows, but not less than benefit for non-duty death.

Eligible Survivors	Percent of HAPC
1	50.0%
2	62.5
3	70.0
4+	75.0

Death while eligible to retire

Eligibility	Surviving spouse or surviving domestic partner of active, disabled or inactive member who dies while eligible to retire.
Benefit	Greater of benefit described above or monthly benefit (including the Temporary Social Security Supplement) to eligible spouse or eligible domestic partner assuming member had retired on date of death and elected full continuance option with spouse or domestic partner as contingent annuitant.

Postretirement Survivor Continuance:

Eligibility	Eligible surviving spouse, eligible surviving domestic partner, eligible children or eligible dependent parent of deceased retired member. Not applicable for 2013 Tier, Modified 2013 Tier and 2016 Tier benefit for multi-tier members, 2013 Tier Members, Modified 2013 Tier Members, or 2016 Tier Members.

Benefit

1976 Tier Members without Social Security	50% of BRI including COLA.
1976 Tier Members with Social Security	25% of BRI including COLA, plus 25% of Temporary Social Security Supplement (ends when member would have reached age 65).
Members with Safety Benefits	50% of BRI including COLA.

Lump Sum Death Benefit:	
Eligibility	Beneficiary of active, inactive, disabled, or retired member.
Basic Benefit	
Active member who became a member before October 1, 1990	Greater of: $1,500 plus one month's final salary, or $7,500.
All others	$7,500
Residual Benefit	Refund of member contributions plus interest, reduced by a portion of benefits received (100% of retirement income, 50% of preretirement survivor income or disability income) payable to beneficiary if no survivor, surviving spouse, domestic partner, or contingent annuitant.
Normal Retirement Age:	
Members with Safety Benefits	Attainment of age 50 with five years of service credit.
All Other Members	Attainment of age 60 (age 65 for the 2013 Tier and the 2016 Tier) with five years of service credit.
Eligible Survivor:	
Eligible Spouse or Domestic Partner	Spouse or domestic partner of deceased active or disabled member in relationship for at least one year before date of death and who is: Responsible for care of eligible child, disabled, or age 60 (age 50 if spouse of member without Social Security and in Plan prior to October 19, 1973).
Eligible Child	Child that is either under age 18, under age 22 and a full-time student, or disabled, if disability occurred prior to age 18 or age 22 if a full-time student.
Eligible Dependent Parent	Parent of deceased active, disabled or retired member, supported by 50% or more by member for one year prior to earliest of death, disablement or retirement.
Inactive Member:	Former UCRP member who retains right to vested benefits.

Cost-of-Living Adjustment:	
Basic	100% of annual Consumer Price Index (CPI) increase up to 2% per year.
Supplemental	Generally 75% of annual CPI increase above 4%. The sum of the Basic and Supplemental COLA's cannot exceed 6% in a year.
COLA applies to:	
Retired members, survivors, disabled members, and contingent annuitants receiving retirement income	Benefits in pay status one or more years on July 1. For multi-tier members, separate dates apply to 1976 Tier, 2013 Tier and 2016 Tier benefits based on the dates those benefits start.
1976 Tier and Members with Safety Benefits	HAPC (used to calculate retirement income) adjusted for COLA up to 2% per year from separation date to retirement date; retirement income adjusted using COLA formula.
Disabled members receiving disability income since before November 5, 1990	HAPC (used to calculate retirement income) adjusted for COLA up to COLA formula above for years from disablement to retirement date.
Capital Accumulation Provision (CAP):	
Eligibility	Various UCRP nonretired members have CAP balances from allocations made periodically in the past. These balances are all vested.
Interest Credit	Regents' approved interest rate; currently 8.50% per year for pre-2002 CAPs and the assumed rate of investment return used in the actuarial valuation (currently 7.25%) for 2002 and later CAPs (CAP II).
Payment	Lump sum payment upon termination, retirement or death.

University Contributions:	Each year the Regents will determine the actual total contributions and the split between Member Contributions and University Contributions based on the total funding policy contribution and various other factors, including the availability of funds, the impact of employee contributions on the competitiveness of UC's total remuneration package, and collective bargaining. In no event would the University Contributions be lower than the Member Contributions. The total funding policy contribution is based on the Regents' funding policy as described in Exhibit IV. The Regents approved an employer contribution rate of 14% of covered compensation for the non-laboratory segment of UCRP starting July 1, 2014. Contributions for the LBNL, LLNL and LLNL segments are based on the University's contracts with the Department of Energy. For new employees hired on or after July 1, 2016 that elect the defined contribution plan option ("Savings Choice"), the Regents approved an employer contribution rate of 6.0% (on pay up to the IRC Section 401(a)(17) limit) that goes towards funding the non-laboratory segment of UCRP's UAAL (3.8% towards the LBNL segment UAAL for 2016-2017).
Member Contributions:	
1976 Tier Members	9% of covered compensation starting on or about July 1, 2014 for members represented by CNA, UPTE, or AFSCME bargaining units; 8% of covered compensation starting July 1, 2014 for all other 1976 Tier Members.
Members with 2013 Tier or 2016 Tier Benefits	7% of covered compensation.
Members with Modified 2013 Tier Benefits	9% of covered compensation.
Members with Safety Benefits	9% of covered compensation starting July 1, 2014.
Members with Tier Two Benefits	None.
Offset	All contributions for non-2013 Tier and Modified 2013 Tier Members are reduced by $19 per month.
Interest Credit	Regents' approved interest rate; currently 6.00% per year.
Cessation	Members are exempt from contributing once the Benefit Percentage reaches 100%.

Changes in Plan Provisions:	The following changes in Plan provisions have been recognized since the prior valuation: ➤ Members with Coordinated Benefits and Members with Noncoordinated Benefits hired (or rehired after a break in service) on or after July 1, 2016 that elect UCRP ("Pension Choice"), accrue service under the 2016 Tier. ➤ For new employees hired on or after July 1, 2016 that elect the defined contribution plan ("Savings Choice"), the Regents approved an employer contribution rate of 6.0% (on pay up to the IRC Section 401(a)(17) limit) that goes towards funding the non-laboratory segment of UCRP's UAAL (3.8% towards the LBNL segment UAAL for 2016-2017). ➤ There were none of these members in either of the above categories as of July 1, 2016 and therefore, these changes have no impact on this valuation.

EXHIBIT IV

UCRP Funding Policy

UCRP Funding Policy:

Effective with the July 1, 2008 valuation, a funding policy was adopted that determines total funding policy contributions based on the Plan's Normal Cost adjusted by an amortization of any surplus or underfunding. The funding policy was last amended in September 2015, effective with the July 1, 2015 actuarial valuation.

The UCRP funding policy has the following structure and parameters:

(1) The funding policy is effective with the July 1, 2008 actuarial valuation and determines total funding policy contributions starting with the Plan Year beginning July 1, 2009.

(2) Each year the funding policy contributions would be effective for the Plan Year starting one year after the date of the actuarial valuation.

(3) Each year the Regents will determine the actual total contributions and the split between Member Contributions and University Contributions based on the total funding policy contributions and various other factors, including the availability of funds, the impact of employee contributions on the competitiveness of UC's total remuneration package, and collective bargaining. In no event shall the University Contributions be lower than the Member Contributions.

(4) The funding policy determines total funding policy contribution rates based on an actuarial valuation of the non-laboratory segment of UCRP (i.e., campuses, medical centers and Hastings College of the Law). The Lawrence Berkeley National Laboratory contributes accordingly to the funding policy outlined in the terms of the University's contract with the Department of Energy. The Lawrence Livermore National Laboratory and Los Alamos National Laboratory Retained Segments in UCRP are subject to the funding policies outlined in the University's contracts with the Department of Energy. Throughout this funding policy, the term "UCRP" refers to the non-laboratory segment of UCRP.

(5) The total funding policy contributions to UCRP consists of the Normal Cost plus an amortization charge for any Unfunded Actuarial Accrued Liability (UAAL) or minus an amortization credit for any surplus.

(6) The Regents' Consulting Actuary conducts an annual actuarial valuation of UCRP. The Normal Cost and the Actuarial Accrued Liability (AAL) in each actuarial valuation is determined under the Entry Age Actuarial Cost Method, using actuarial assumptions adopted by the Regents.

(7) The asset smoothing method used to determine the Actuarial Value of Assets is based on the Market Value of Assets adjusted for "unrecognized returns" in each of the last five years. Unrecognized return is the difference between actual and expected returns on a market value basis and is recognized over a five-year period.

(8) As of the effective date of this policy, any initial surplus as of that date is amortized as a level dollar amount over a period of three years.

   a. Any changes in surplus after the effective date due to actuarial gains and losses (including contribution gains and losses) is amortized as a level dollar amount over 15 years.

   b. Any change in surplus due to a change in actuarial assumptions, cost method or asset smoothing method is amortized as a level dollar amount over 15 years.

   c. Any change in surplus due to a Plan amendment is amortized as a level dollar amount over 15 years.

   d. In the first year after the effective date when UCRP has a UAAL all amortization bases are considered fully amortized and contributions would be determined under the remaining provisions of this policy.

(9) For any year when UCRP has a UAAL, the calculation of the UAAL would be maintained by source (as listed below) and each new portion of or change in UAAL is amortized as a level dollar amount over a fixed amortization period. For any UAAL identified prior to the July 1, 2015 actuarial valuation, the following applies:

   a. Any initial UAAL (after a period of surplus) or change in UAAL due to actuarial gains and losses (including contribution gains and losses) is amortized over 30 years.

   b. Any change in UAAL due to a change in actuarial assumptions, cost method or asset smoothing method is amortized over 15 years.

c. Any change in UAAL due to a Plan amendment is amortized over 15 years, unless a shorter period is adopted by the Regents reflecting the nature of the Plan amendment.

(10) For any UAAL identified beginning with the July 1, 2015 actuarial valuation (including the 2014-15 actuarial gain or loss), the following applies:

a. Any initial UAAL (after a period of surplus) or change in UAAL due to actuarial gains and losses (including contribution gains and losses) is amortized over 20 years.

b. Any change in UAAL due to a change in actuarial assumptions, cost method or asset smoothing method is amortized over 20 years.

c. Any change in UAAL due to a Plan amendment affecting active members is amortized over 15 years.

d. Any change in UAAL due to a Plan amendment affecting non-active members is amortized over 10 years.

(11) For any year in which UCRP has a surplus, such surplus would be amortized as a level dollar amount over 30 years, and all prior UAAL amortization bases would be considered fully amortized.

(12) Effective July 1, 2010, all UAAL amortization bases as of July 1, 2010 were combined and the combined base is amortized as a level dollar amount over 30 years.

(13) This funding policy supersedes any previous funding policies.

APPENDIX A

Projections for Non-Laboratory Segment of UCRP

This appendix includes 20-year projections for the non-laboratory segment (i.e., campus and medical center segment) of UCRP under various scenarios. The results shown include employer contribution rates that have been approved by the Regents ("approved contributions"), the employer portion of the total funding policy contribution rates, Actuarial Accrued Liability (AAL), Actuarial Value of Assets (AVA) and funded ratios. A description of the actuarial assumptions and methods used in the projections is included at the end of this appendix.

Under each projection scenario shown we compare results based on "approved" contributions versus the total funding policy contributions. The approved contributions include the 14% of compensation employer rate to UCRP, transfers from STIP of $481 million in 2016-2017 and $392 million in 2017-2018 and a 6% of compensation (up to the IRC Section 401(a)(17) limit) contribution rate ("UAAL Surcharge") for new employees hired on or after July 1, 2016 that elect the defined contribution plan ("Savings Choice") that goes towards paying down UCRP's UAAL. All of these contributions have already been approved by the Regents. State Funding of $171 million in each of 2016-2017 and 2017-2018 has also been reflected. The approved contributions do not include any future transfers from STIP or State Funding except as noted above. In addition to these employer contributions, member contributions are also made to UCRP and are 8% for most UCRP members. The member contributions are also reflected in the projections, but not included in the contribution rate graphs.

For the total funding policy contribution scenario, we assume that in addition to the above contributions, additional employer contributions (i.e., transfers from STIP and/or State Funding) will be made so that the total funding policy contribution will be contributed each year.

In general, funding for the laboratory segments of UCRP is governed by provisions of the contracts between UC and the DOE. Various funding projections for those segments are provided at least semi-annually to the DOE under separate cover in a specified format.

Scenario #1: 7.25% Market Value Return Per Year Beginning July 1, 2016 and 0% Active Member Growth

The first (baseline) scenario shows results based on the approved contributions being made versus the total funding policy contributions being made assuming 7.25% market value returns per year beginning July 1, 2016 and a 0% per year increase in the active member population. This means that members that leave active employment are assumed to be replaced with an equal amount of new hires such that the active member population stays level or constant throughout the projection. All scenarios illustrate the impact of making the approved contributions as compared to making the total funding policy contributions.

The first graph shows a comparison of the employer contribution rates. The red line is the approved employer contributions. As noted above, they include the STIP transfers and borrowing in the first two years and are slightly above 14% of compensation thereafter since the Savings Choice contribution towards UCRP's UAAL is also included.

APPENDIX A

Projections for Non-Laboratory Segment of UCRP (continued)

The blue line is the employer portion of the total funding policy contribution rate assuming that the total funding policy contribution is made each year. After a few years there is an increase in the rate due to the recognition of recent investment losses. This rate then declines for various reasons including the lower Normal Cost for future hires under the 2016 Tier, lower level dollar UAAL amortization payments when expressed as an increasing amount of compensation and UAAL amortization layers being paid off.

The green line is the employer portion of the total funding policy contribution rate assuming that only the approved contributions are made. The graph shows that this total funding policy contribution rate continues to increase steadily to nearly 30% of compensation over the 20-year period. This is due to the shortfall between the approved and total funding policy contributions which is represented by the orange area in the graph. These shortfalls are recognized as actuarial losses under UCRP's funding policy and amortized over 20 years. Over time these losses lead to higher total funding policy contribution rates (green line) and increased contribution shortfalls represented by the yellow area.

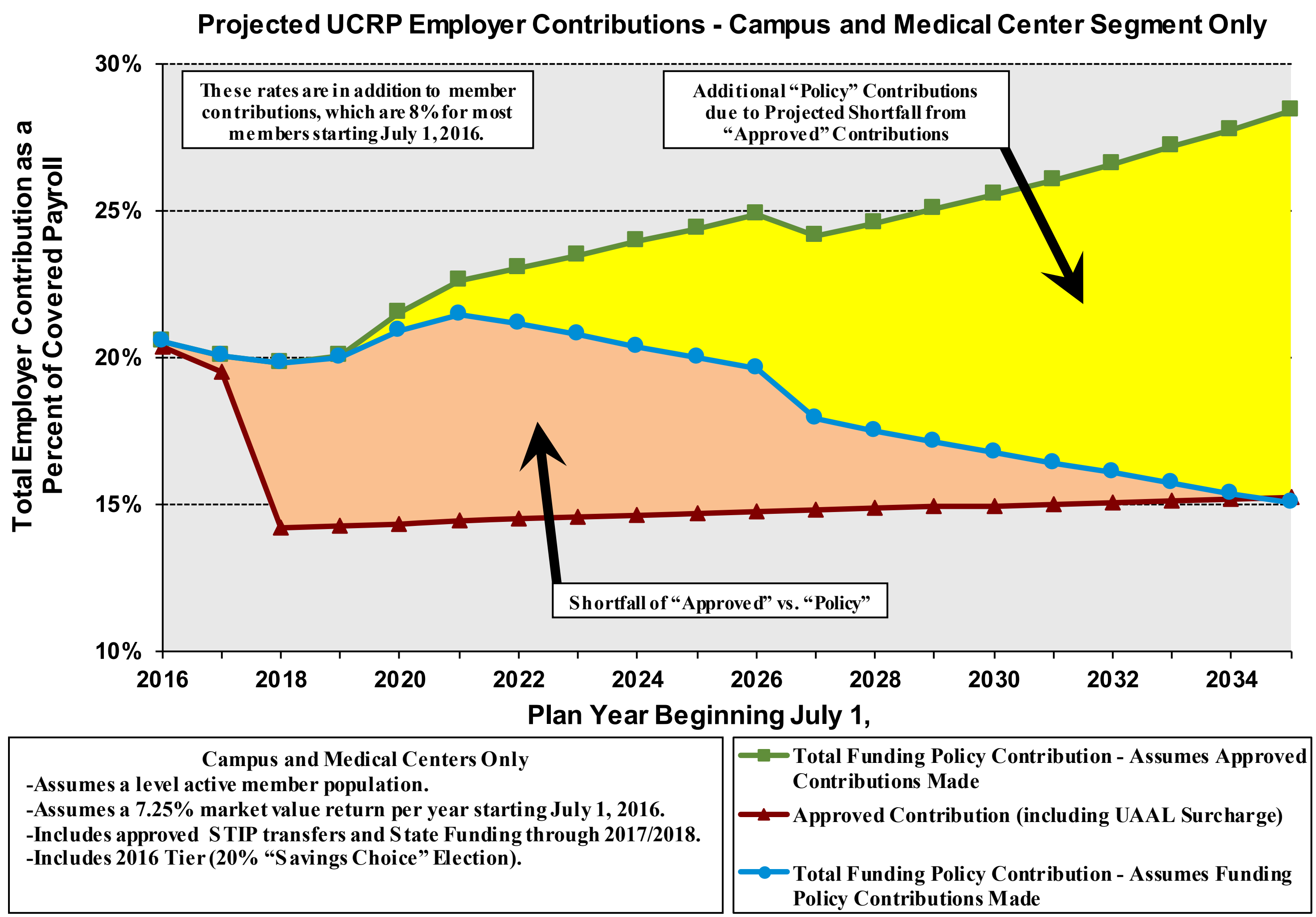
The two graphs that follow show the projected AAL, AVA and funded ratios under the two different contribution levels. The projected results based on contributing the approved contributions are shown first followed by the projected results based on the total funding policy contributions. This same format is followed for the other two projection scenarios.

Based on contributing the approved contributions, the funded ratio (black line) stays relatively flat and is slightly over 80% throughout the projection period. However, the AAL increases at a faster pace than the assets (AVA) which results in an increase in the UAAL from about $11 billion in 2016 to about $21 billion in 2035. Based on contributing the total funding policy contributions, the funded ratio increases steadily and is nearly 100% by 2035 while the UAAL reduces to about $3 billion.

Even though the funded ratio stays level based on contributing the approved contributions during the twenty years shown, our longer term projections show that the current assets combined with projected future approved contributions and investment earnings are expected to be sufficient to pay all future expected benefits for all plan members (both current and future).

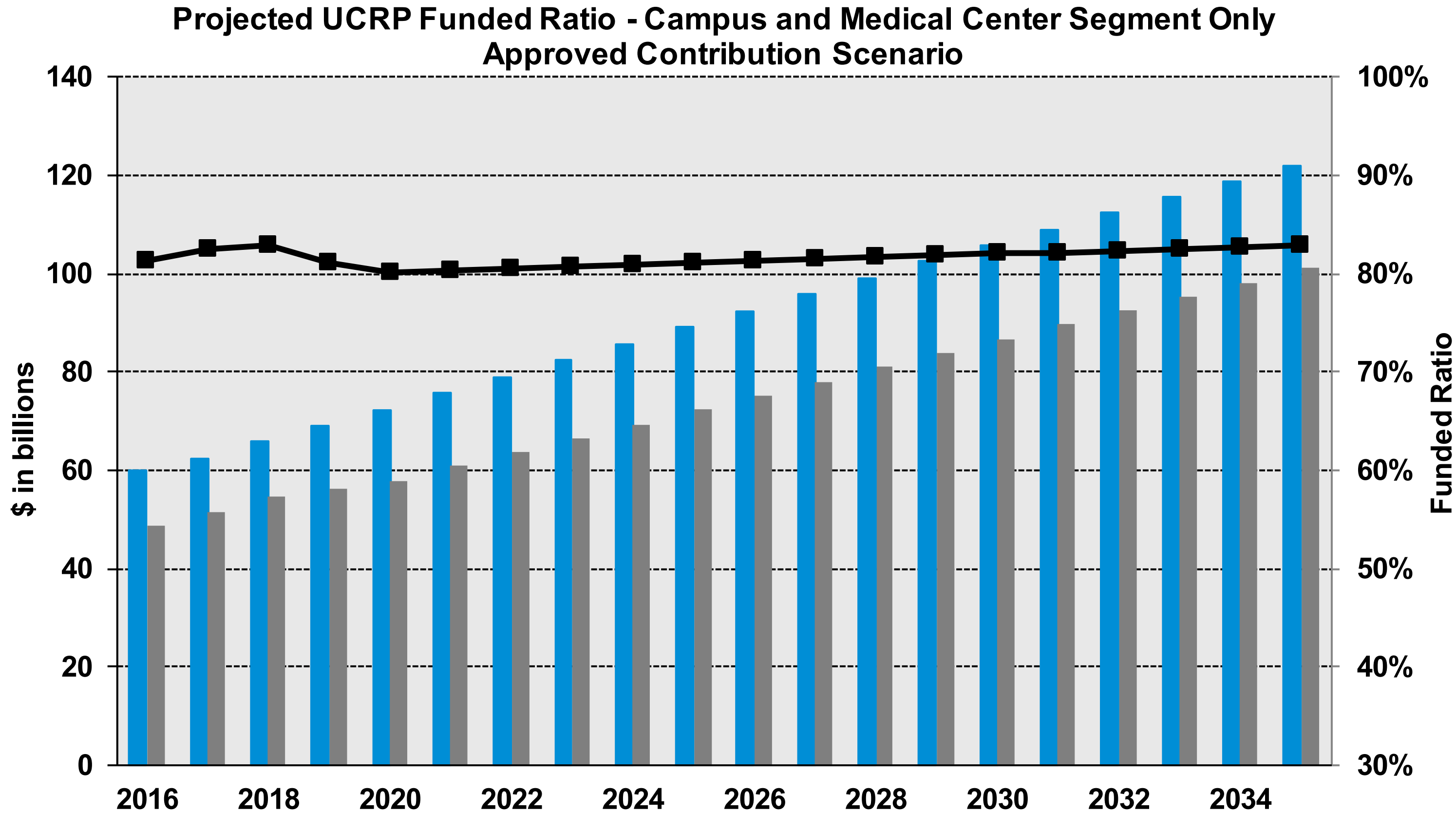
APPENDIX A
Projections for Non-Laboratory Segment of UCRP (continued)

Scenario #1: 7.25% Market Value Return Per Year Beginning July 1, 2016 and 0% Active Member Growth



APPENDIX A
Projections for Non-Laboratory Segment of UCRP (continued)

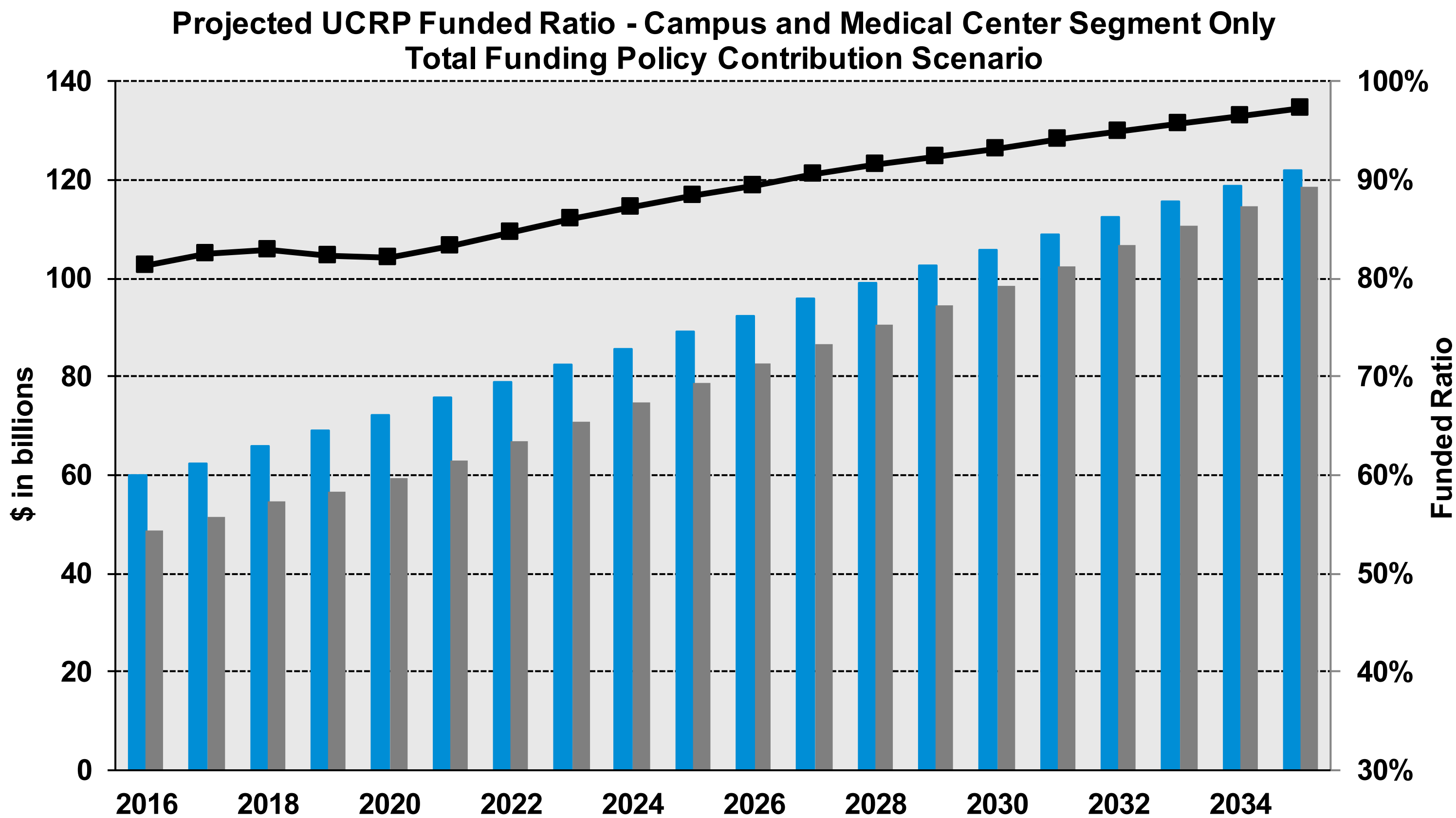
Scenario #1: 7.25% Market Value Return Per Year Beginning July 1, 2016 and 0% Active Member Growth



Campus and Medical Centers Only
- -Assumes a level active member population.
- -Assumes a 7.25% market value return per year starting July 1, 2016.
- -Assumes approved contributions are paid each year.
- -Includes approved STIP transfers and State Funding through 2017/2018.
- -Includes 2016 Tier (20% "Savings Choice" Election).

APPENDIX A
Projections for Non-Laboratory Segment of UCRP (continued)

Scenario #1: 7.25% Market Value Return Per Year Beginning July 1, 2016 and 0% Active Member Growth



Campus and Medical Centers Only
-Assumes a level active member population.
-Assumes a 7.25% market value return per year starting July 1, 2016.
-Assumes total funding policy contributions are paid each year.
-Includes 2016 Tier (20% "Savings Choice" Election).

Actuarial Accrued Liability (AAL)
Actuarial Value of Assets (AVA)
Funded Ratio

APPENDIX A
Projections for Non-Laboratory Segment of UCRP (continued)

Scenario #2: 0% Actual Market Return During 2016-2017 and 0% Active Member Growth

The second scenario is the same as the first, except that we assume 0% market value return during 2016-2017. Returns of 7.25% per year are assumed thereafter. This projection illustrates the impact of one year of low investment returns.

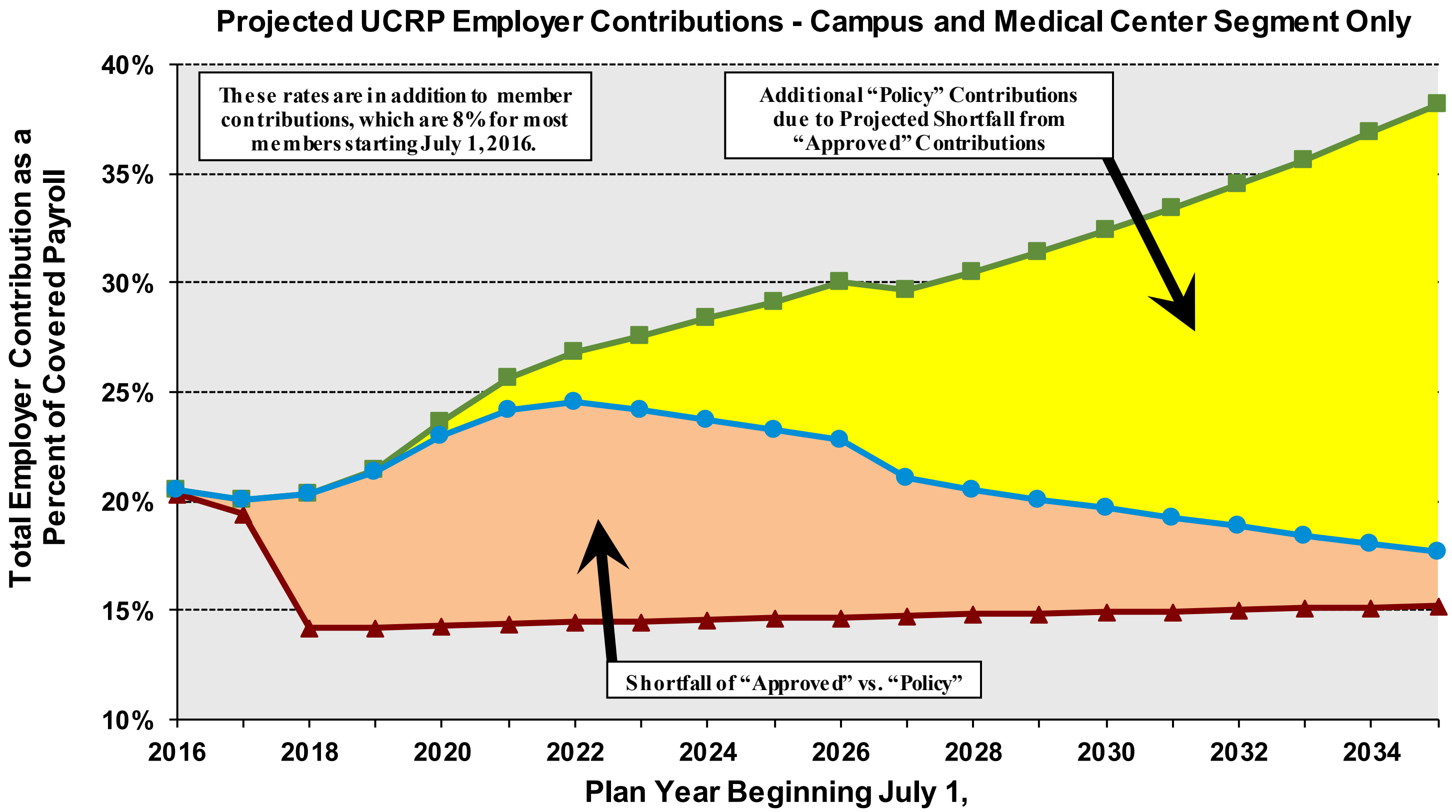
The red line (approved employer contributions) remains unchanged as compared to the baseline scenario. However, the total funding policy contribution rates based on contributing the approved contributions show a steeper increase over the period and by 2035 are over 9% of compensation higher than in Scenario #1.

Based on contributing the approved contributions, the projected funded ratios decrease from 81% in 2016 to about 75% in 2021 (when the investment losses are fully recognized under 5-year smoothing) and stays relatively flat through 2035, while the UAAL increases to about $33 billion in 2035. Based on contributing the total funding policy contributions, the funded ratio still increases over time as a result of the higher contributions being made which are about 3% higher in 2035 as compared to Scenario #1, while the UAAL is $1 billion higher.

While the funded ratio declines slowly based on contributing the approved contributions during the twenty years shown, our longer term projections show that the current assets combined with projected future approved contributions and investment earnings are expected to be sufficient to pay future expected benefits for current plan members only. Payment of a portion of the benefits for future plan members is expected to require additional contributions to be made in the future.

APPENDIX A
Projections for Non-Laboratory Segment of UCRP (continued)

Scenario #2: 0% Actual Market Return During 2016-2017 and 0% Active Member Growth

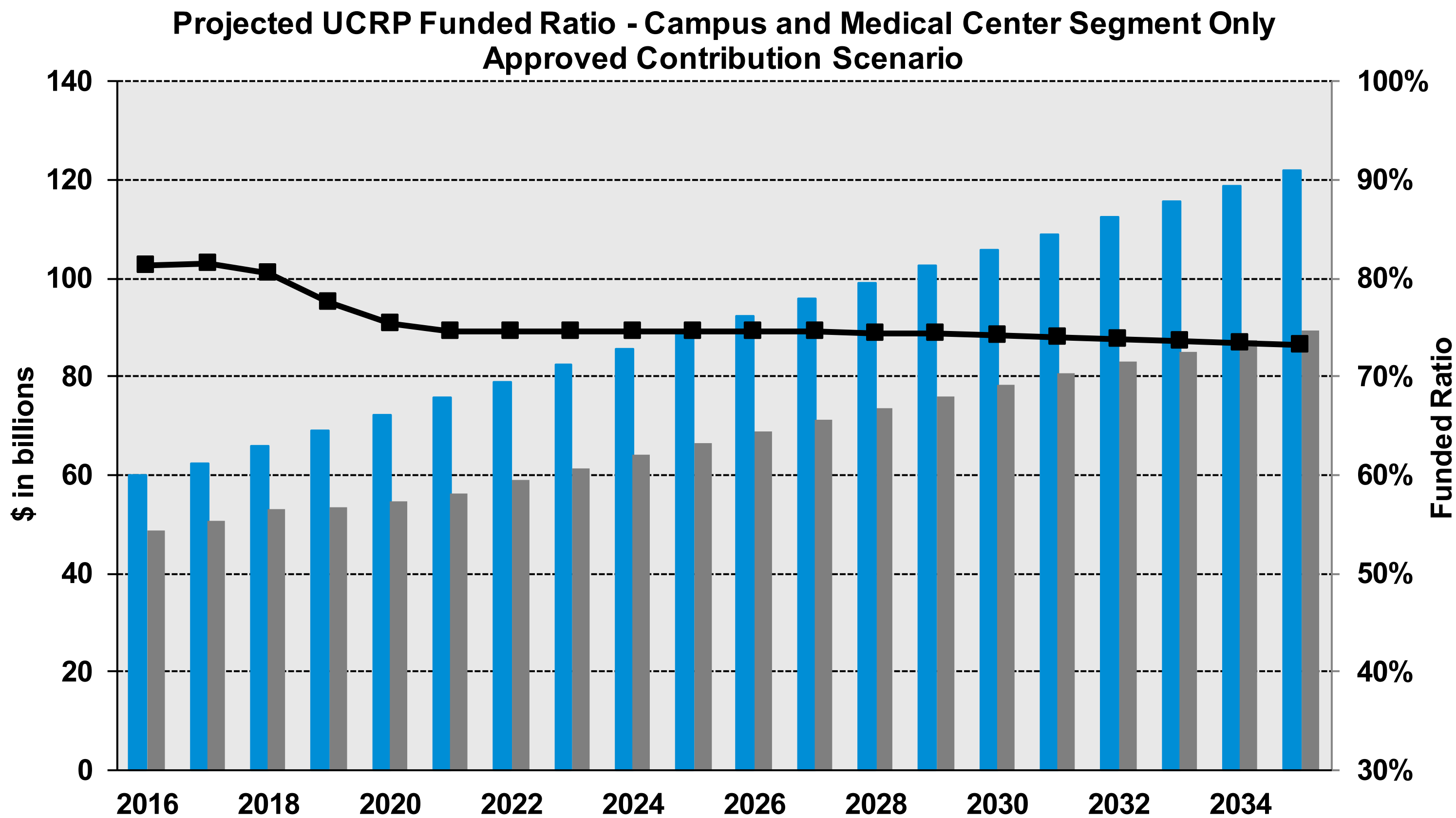


Campus and Medical Centers Only
- -Assumes a level active member population.
- -Assumes a 0% market value return in 2016/2017 and a 7.25% market value return per year starting July 1, 2017.
- -Includes approved STIP transfers and State Funding through 2017/2018.
- -Includes 2016 Tier (20% "Savings Choice" Election).

- Total Funding Policy Contribution - Assumes Approved Contributions Made
- Approved Contribution (including UAAL Surcharge)
- Total Funding Policy Contribution - Assumes Funding Policy Contributions Made

APPENDIX A
Projections for Non-Laboratory Segment of UCRP (continued)

Scenario #2: 0% Actual Market Return During 2016-2017 and 0% Active Member Growth



Campus and Medical Centers Only
- -Assumes a level active member population.
- -Assumes a 0% market value return in 2016/2017 and a 7.25% market value return per year starting July 1, 2017.
- -Assumes approved contributions are paid each year.
- -Includes approved STIP transfers and State Funding through 2017/2018.
- -Includes 2016 Tier (20% "Savings Choice" Election).

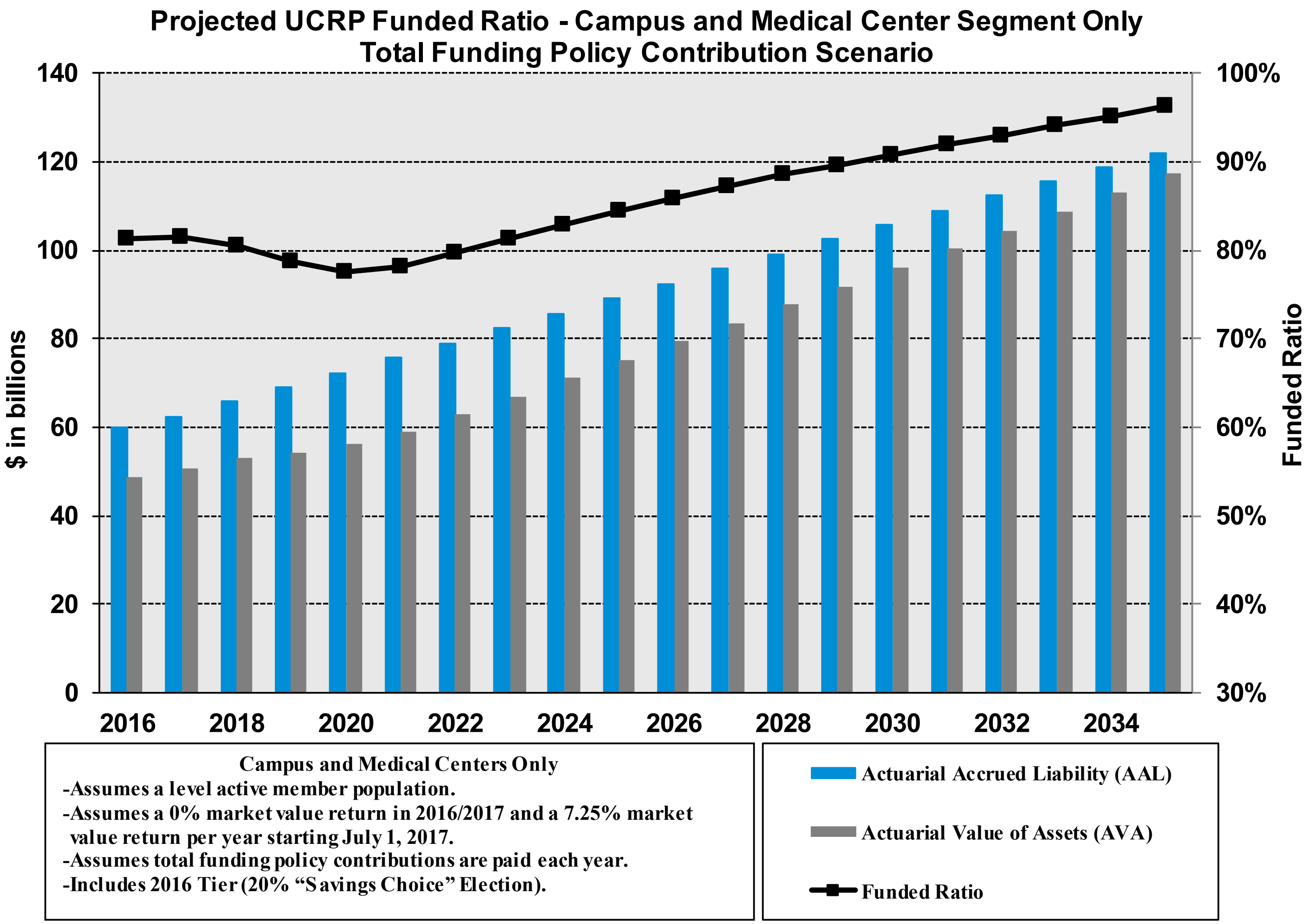
Actuarial Accrued Liability (AAL)

Actuarial Value of Assets (AVA)

Funded Ratio

APPENDIX A
Projections for Non-Laboratory Segment of UCRP (continued)

Scenario #2: 0% Actual Market Return During 2016-2017 and 0% Active Member Growth



APPENDIX A
Projections for Non-Laboratory Segment of UCRP (continued)

Scenario #3: 7.25% Market Return Per Year Beginning July 1, 2016 and 0.7% Per Year Active Member Growth

The third scenario is the same as the first, except that we assume 0.7% per year growth in the active member population. This projection illustrates the impact of growth in the active member population.

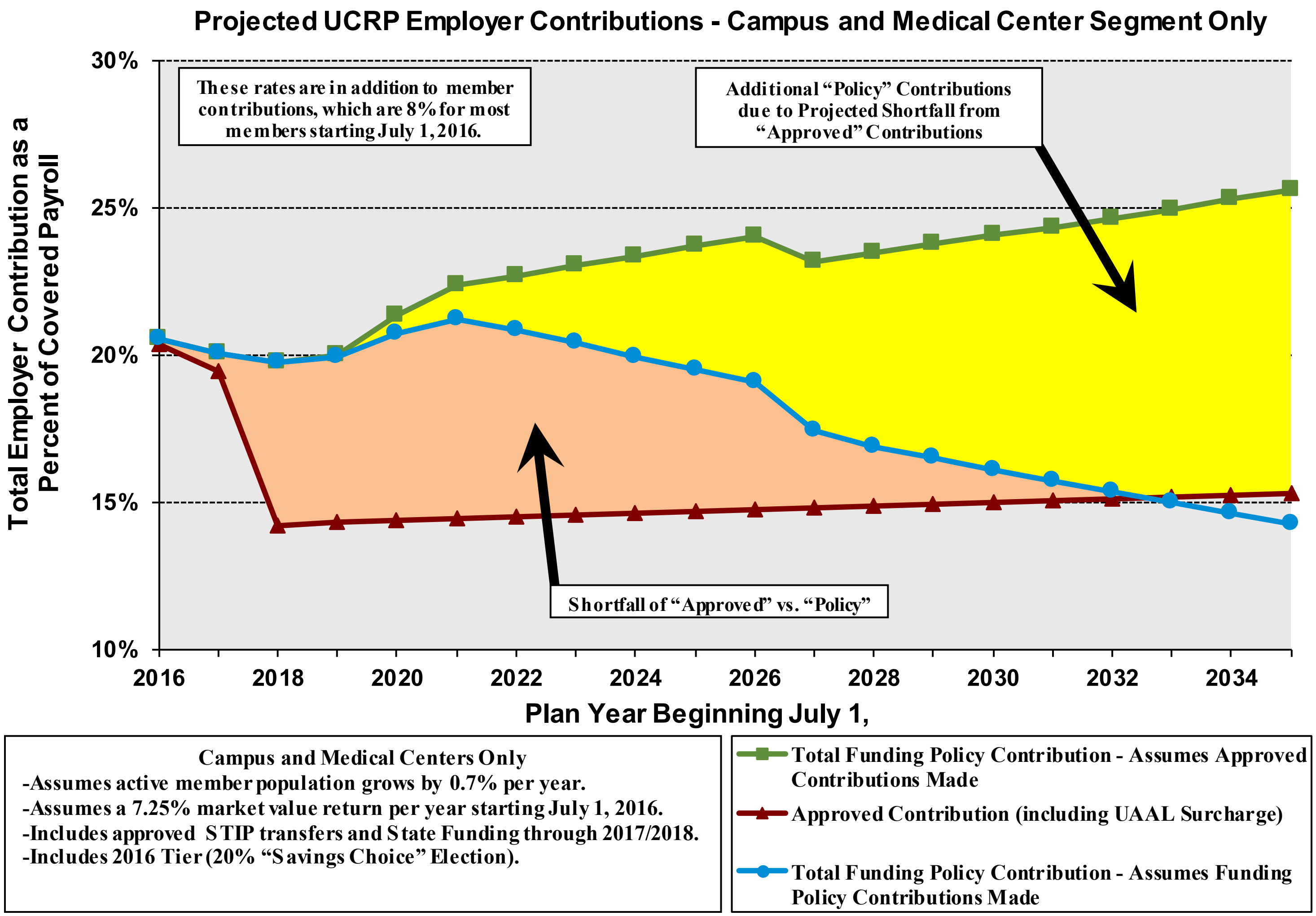
The red line (approved employer contributions) still remains mostly unchanged, while all of the total funding policy contribution rates show a slight improvement (decrease) over the projection period as compared to Scenario #1.

The projected funded ratios increase slightly and the UAAL decreases slightly regardless of the contribution level when compared to Scenario #1. This is because an increase in the active member population results in an increase in future new hires who are either (a) going into a lower Normal Cost tier, thereby allowing more contributions to go towards paying down UCRP's UAAL or (b) going into the Savings Choice plan which has a similar 6% of compensation contribution towards paying down UCRP's UAAL.

Consistent with Scenario #1, our longer term projections show that under Scenario #3 the current assets combined with projected future approved contributions and investment earnings are expected to be sufficient to pay all future expected benefits for <u>all</u> plan members (both current and future).

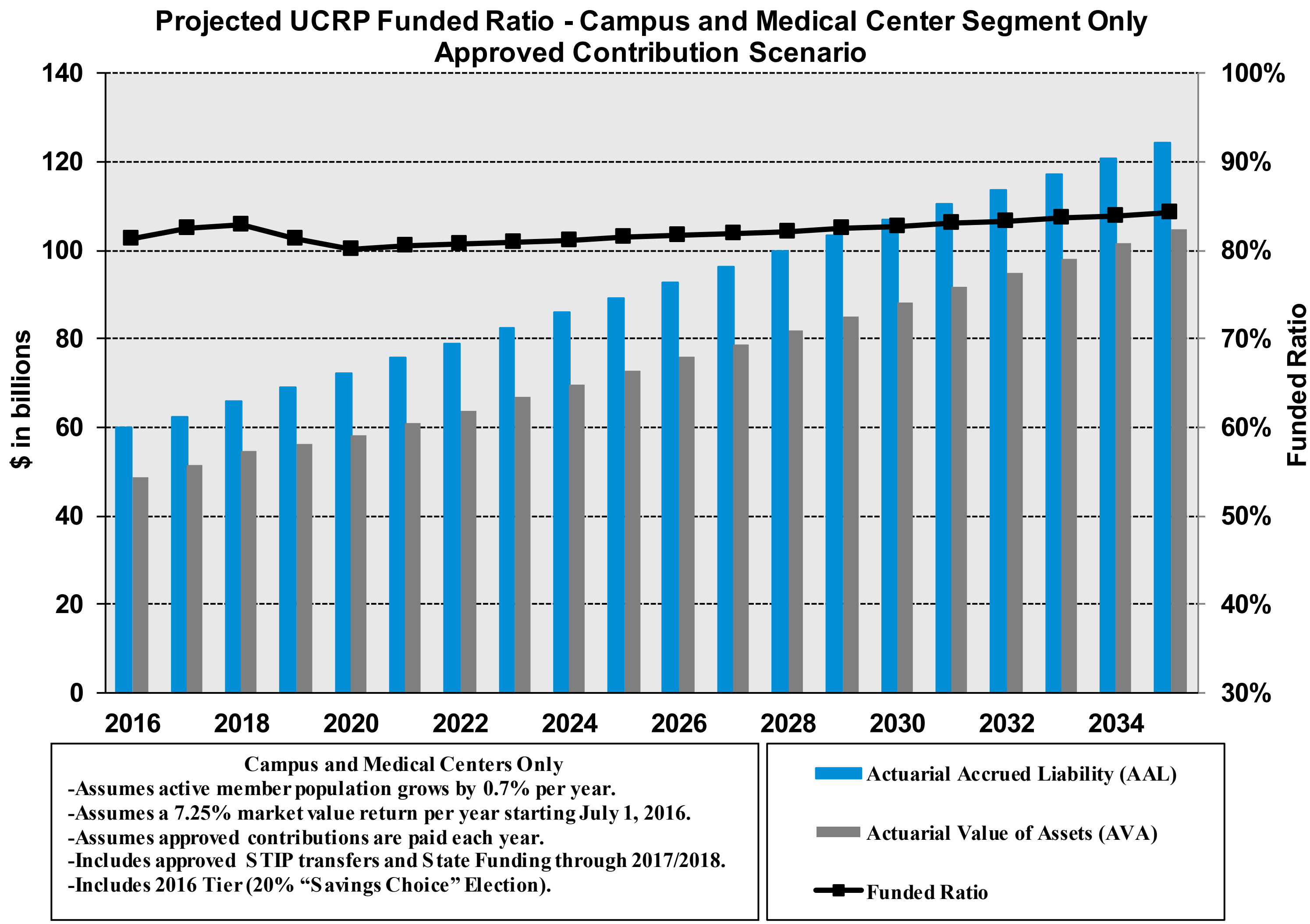
APPENDIX A
Projections for Non-Laboratory Segment of UCRP (continued)

Scenario #3: 7.25% Market Return Per Year Beginning July 1, 2016 and 0.7% Per Year Active Member Growth



APPENDIX A
Projections for Non-Laboratory Segment of UCRP (continued)

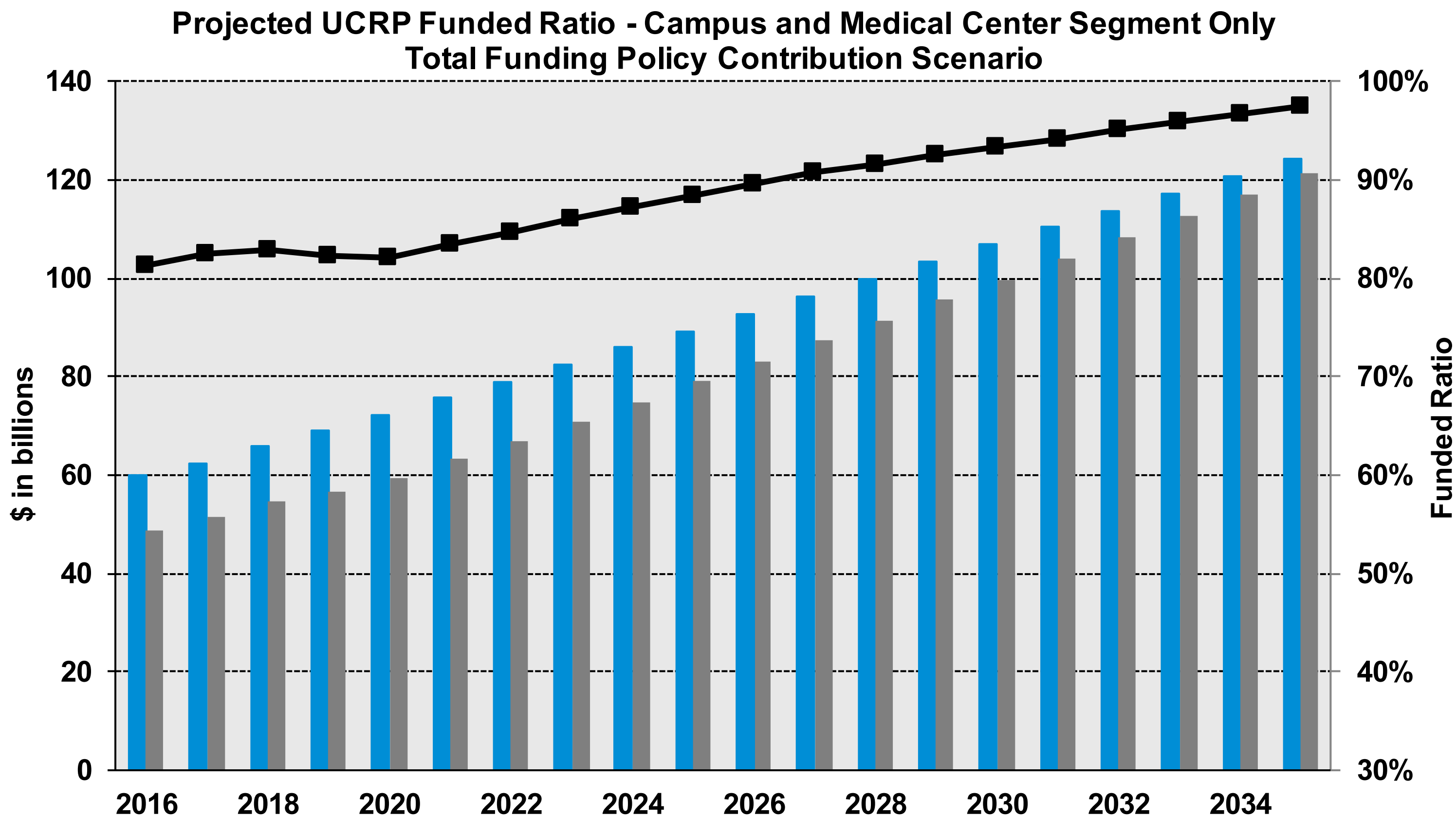
Scenario #3: 7.25% Market Return Per Year Beginning July 1, 2016 and 0.7% Per Year Active Member Growth



Campus and Medical Centers Only
- -Assumes active member population grows by 0.7% per year.
- -Assumes a 7.25% market value return per year starting July 1, 2016.
- -Assumes approved contributions are paid each year.
- -Includes approved STIP transfers and State Funding through 2017/2018.
- -Includes 2016 Tier (20% "Savings Choice" Election).

APPENDIX A
Projections for Non-Laboratory Segment of UCRP (continued)

Scenario #3: 7.25% Market Return Per Year Beginning July 1, 2016 and 0.7% Per Year Active Member Growth



Campus and Medical Centers Only
-Assumes active member population grows by 0.7% per year.
-Assumes a 7.25% market value return per year starting July 1, 2016.
-Assumes total funding policy contributions are paid each year.
-Includes 2016 Tier (20% "Savings Choice" Election).

APPENDIX A
Projections for Non-Laboratory Segment of UCRP (continued)

Actuarial Assumptions and Methods Used in Projections:

The projections shown in Appendix A were made using generally accepted actuarial practices and are based on the July 1, 2016 actuarial valuation results. This includes the participant data and actuarial assumptions on which those valuations were based. We have used a forecast model that includes new hires and calculates Normal Costs, Actuarial Accrued Liabilities (AAL) and other results consistent with the UCRP actuarial valuation throughout the projection period, as if all the actuarial assumptions have been met. The projection period used is 20 years. Here are some of the important assumptions used:

- Includes non-laboratory segment (i.e., campus and medical centers segment) only.
- For Scenario #1 and #3, assumes market value returns of 7.25% per year beginning July 1, 2016. Scenario #2 assumes a 0% market value return during 2016-2017 and returns of 7.25% per year thereafter.
- Reflects choice of either the UCRP 2016 Tier ("Pension Choice") or the defined contribution plan ("Savings Choice") for new hires on or after July 1, 2016. There is a 6% of compensation employer contribution for new hires that elect the defined contribution plan that goes towards paying down UCRP's unfunded liability.
- Take-rate of 80% UCRP 2016 Tier and 20% defined contribution plan is assumed. Includes cost of choice of 0.6% of total new hire compensation added to UCRP's Normal Cost for new hires.
- For Scenarios #1 and #2, 0% per year active member population growth is assumed. Scenario #3 assumes a 0.7% per year growth in the active member population.
- Transfers from STIP of $481 million in 2016-2017 and $392 million in 2017-2018 along with State Funding of $171 million in each of 2016-2017 and 2017-2018 are reflected in all scenarios.
- Total of employer and member contribution rates are assumed to be no greater than the total funding policy contribution rate for any year with the exception that the employer contribution rate can be no less than the member contribution rate.
- Demographics for future new entrants are assumed to be the same as those for members hired during the two years prior to July 1, 2016.

APPENDIX A
Projections for Non-Laboratory Segment of UCRP (continued)

Projections, by their nature, are not a guarantee of future results. The modeling projections are intended to serve as illustrations of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the agreed-upon assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.

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