

PLAN INVESTMENT REVIEW | PERFORMANCE SUMMARY
 THE UNIVERSITY OF NORTH CAROLINA
 FOR THE PERIOD ENDING 12.31.16

INVESTMENT NAME	PROVIDER	Q4 '16	1 YEAR*	3 YEAR*	5 YEAR*	10 YEAR*	Exp Ratio
MONEY MARKET							
Fidelity Retirement Money Market	Fidelity	0.03%	0.05%	0.02%	0.02%	0.86%	0.42
CREF Money Market R3	TIAA-CREF	0.04%	0.13%	0.04%	0.03%	0.75%	0.37
BofA Merrill Lynch 3-month U.S. T-Bill	Benchmark	0.08%	0.33%	0.14%	0.12%	0.80%	
STABLE VALUE							
Fidelity Managed Income Portfolio	Fidelity	0.31%	1.25%	1.13%	1.13%	1.80%	0.78
Lincoln Fixed Account*	Fidelity	0.56%	-	-	-	-	-
TIAA Traditional Annuity - GRA	TIAA-CREF			Current Rate is 3.75%			
TIAA Traditional Annuity - GSRA	TIAA-CREF			Current Rate is 3.00%			
Hueler Stable Value Index (gross)	Peer Group	0.45%	1.79%	1.75%	1.87%	2.77%	
BofA Merrill Lynch 3-month U.S. T-Bill	Benchmark	0.08%	0.33%	0.14%	0.12%	0.80%	
SHORT TERM BOND							
Vanguard Short Term Bond Index I	Fidelity/TIAA-CREF	-1.12%	1.51%	1.25%	1.20%	2.96%	0.06
Morningstar Short Term Bond Universe	Peer Group	-0.49%	2.08%	1.08%	1.53%	2.58%	
Barclays Government/Credit 1-3 Yr	Benchmark	-0.39%	1.28%	0.90%	0.92%	2.44%	
INTERMEDIATE TERM BOND							
JPMorgan Core Bond R5	Fidelity	-3.08%	2.41%	2.86%	2.39%	4.76%	0.53
Vanguard Total Bond Market Index Inst	TIAA-CREF/Fidelity	-3.16%	2.61%	2.95%	2.15%	4.32%	0.05
MetWest Total Return Bond	TIAA-CREF/Fidelity	-2.66%	2.53%	2.95%	4.10%	5.78%	0.40
JPMorgan Core Bond R6	TIAA-CREF	-3.05%	2.51%	2.96%	2.48%	4.83%	0.36
Morningstar Intermediate Term Bond Universe	Peer Group	-2.53%	3.24%	2.74%	2.68%	4.20%	
Barclays Aggregate Bond Index	Benchmark	-2.98%	2.65%	3.03%	2.23%	4.34%	
ALLOCATION--50% TO 70% EQUITY							
Fidelity Balanced K	Fidelity	0.76%	7.12%	5.96%	10.16%	6.11%	0.46
Morningstar Allocation-50% to 70% Equity Universe	Peer Group	3.11%	9.08%	5.41%	9.22%	5.29%	
60% S&P 500 40% BC Agg	Benchmark	2.49%	11.43%	8.41%	11.05%	6.56%	
WORLD ALLOCATION							
CREF Social Choice Account R3	TIAA-CREF	0.38%	7.40%	4.38%	8.05%	5.13%	0.33
Morningstar World Allocation Universe	Peer Group	-0.53%	6.07%	1.04%	5.40%	3.74%	
60% MSCI World 40% BC Agg Index	Benchmark	0.64%	6.67%	4.03%	8.30%	4.40%	
LARGE COMPANY VALUE							
JHancock Disciplined Value R6	TIAA-CREF/Fidelity	8.11%	14.07%	6.43%	14.51%	7.04%	0.77
Morningstar Large Value Universe	Peer Group	6.36%	14.70%	6.81%	13.02%	5.50%	
Russell 1000 Value	Benchmark	6.68%	17.34%	8.59%	14.80%	5.72%	
LARGE COMPANY BLEND							
Vanguard Instl Index Fund	TIAA-CREF/Fidelity	3.82%	11.95%	8.87%	14.65%	6.97%	0.04
CREF Stock R3	TIAA-CREF	2.08%	9.17%	4.83%	11.55%	5.03%	0.37
Morningstar Large Blend Universe	Peer Group	3.87%	10.28%	6.79%	13.17%	6.14%	
S&P 500 Index	Benchmark	3.82%	11.96%	8.87%	14.66%	6.95%	

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*403(b) Plan only

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LARGE COMPANY GROWTH							
Vanguard FTSE Social Index Inv	Fidelity	3.67%	10.34%	8.98%	15.90%	6.17%	0.25
Fidelity Contrafund K	Fidelity	-0.53%	3.48%	6.54%	13.58%	7.99%	0.61
T Rowe Price Instl Large Cap Growth	TIAA-CREF/Fidelity	1.76%	2.85%	7.17%	15.89%	8.98%	0.56
Morningstar Large Growth Universe	Peer Group	-0.30%	3.17%	5.72%	12.97%	6.94%	
Russell 1000 Growth	Benchmark	1.01%	7.08%	8.55%	14.50%	8.33%	
MEDIUM COMPANY VALUE							
MFS Mid Cap Value R4	Fidelity	4.74%	15.70%	7.59%	15.11%	7.73%	0.94
MFS Mid Cap Value R6	TIAA-CREF	4.73%	15.86%	7.73%	15.15%	7.60%	0.84
Morningstar Mid Value Universe	Peer Group	6.75%	17.92%	6.77%	13.79%	6.89%	
Russell MidCap Value	Benchmark	5.52%	20.00%	9.45%	15.70%	7.59%	
MEDIUM COMPANY BLEND							
Vanguard Ext Mkt Idx Instl Plus	TIAA-CREF/Fidelity	5.62%	16.17%	6.55%	14.69%	7.91%	0.06
Morningstar Mid Blend Universe	Peer Group	5.31%	14.17%	5.98%	13.33%	6.83%	
Russell MidCap	Benchmark	3.21%	13.80%	7.92%	14.72%	7.86%	
MEDIUM COMPANY GROWTH							
MassMutual Select Mid Cap Gr Eq II	TIAA-CREF/Fidelity	0.37%	6.19%	8.33%	14.73%	9.55%	0.75
Morningstar Mid Growth Universe	Peer Group	0.71%	5.93%	4.02%	11.78%	6.96%	
Russell MidCap Growth	Benchmark	0.46%	7.33%	6.23%	13.51%	7.83%	
FOREIGN LARGE VALUE							
MFS International Value R4	Fidelity	-5.70%	4.20%	4.13%	10.85%	5.08%	0.84
MFS International Value R6	TIAA-CREF	-5.66%	4.31%	4.23%	10.94%	5.15%	0.69
Morningstar Foreign Large Value Universe	Peer Group	0.14%	2.96%	-2.41%	5.45%	-0.04%	
MSCI EAFE	Benchmark	-0.68%	1.51%	-1.15%	7.02%	1.22%	
FOREIGN LARGE BLEND							
Amer Funds EuroPac R6	TIAA-CREF	-4.15%	1.01%	-0.60%	7.22%	2.89%	0.49
Amer Funds EuroPac R4	Fidelity	-4.22%	0.69%	-0.94%	6.85%	2.61%	0.85
Vanguard Total Intl Stock Index Inst	TIAA-CREF/Fidelity	-1.92%	4.70%	-1.32%	5.53%	0.93%	0.10
Morningstar Foreign Large Blend Universe	Peer Group	-2.24%	0.70%	-2.07%	5.83%	0.57%	
MSCI EAFE	Benchmark	-0.68%	1.51%	-1.15%	7.02%	1.22%	
FOREIGN SMALL/MID GROWTH							
T Rowe Price International Discovery	TIAA-CREF/Fidelity	-4.67%	1.08%	3.41%	11.63%	5.01%	1.20
Morningstar Foreign Small/Mid Growth Universe	Peer Group	-6.51%	-2.97%	-0.56%	8.82%	3.23%	
MSCI World ex USA Smid Cap USD	Benchmark	-2.54%	3.98%	1.38%	8.65%	2.51%	
SMALL COMPANY VALUE							
Goldman Sachs Small Value Inst	TIAA-CREF/Fidelity	11.08%	24.67%	7.93%	15.08%	8.38%	0.99
Morningstar Small Value Universe	Peer Group	12.12%	25.68%	6.63%	14.02%	6.86%	
Russell 2000 Value	Benchmark	14.07%	31.74%	8.31%	15.07%	6.26%	
SMALL COMPANY GROWTH							
Eagle Small Cap Growth R5	Fidelity	3.03%	10.26%	4.98%	12.27%	8.24%	0.75
Eagle Small Cap Growth R6	TIAA-CREF	3.08%	10.39%	5.10%	12.40%	8.10%	0.66
Morningstar Small Growth Universe	Peer Group	3.35%	11.25%	3.59%	12.29%	7.18%	
Russell 2000 Growth	Benchmark	3.57%	11.32%	5.05%	13.74%	7.76%	

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SPECIALTY-REAL ESTATE							
Cohen & Steers Realty Shares	Fidelity	-3.62%	5.61%	13.02%	11.48%	5.03%	0.96
Cohen & Steers Instl Realty Shares	TIAA-CREF	-3.52%	5.91%	13.21%	11.71%	5.26%	0.75
Morningstar Specialty-Real Estate Universe	Peer Group	-2.63%	6.53%	11.78%	10.89%	4.34%	
Dow Jones US Select REIT	Benchmark	-2.53%	6.68%	13.73%	11.77%	4.63%	
SPECIALTY-REAL ESTATE							
TIAA Real Estate Account	TIAA-CREF	1.25%	5.20%	8.49%	9.03%	3.38%	0.87
Morningstar Specialty-Real Estate Universe	Peer Group	-2.63%	6.53%	11.78%	10.89%	4.34%	
NCREIF Property Index	Benchmark	1.73%	7.97%	11.01%	10.91%	6.93%	
TARGET DATE							
Vanguard Instl Target Retirement Income Instl	TIAA-CREF/Fidelity	-1.00%	5.29%	-	-	-	0.10
Retirement Income Moderate	Peer Group	-0.87%	5.04%	2.78%	4.71%	3.87%	
Morningstar Lifetime Moderate Income Index	Benchmark	-0.66%	5.98%	2.88%	4.75%	4.80%	
Vanguard Instl Target Retirement 2010 Instl	TIAA-CREF/Fidelity	-0.98%	5.31%	-	-	-	0.10
2000-2015 Moderate	Peer Group	-0.39%	5.93%	3.11%	6.15%	3.70%	
Morningstar Lifetime Moderate 2010 Index	Benchmark	-0.82%	6.64%	3.34%	5.83%	5.10%	
Vanguard Instl Target Retirement 2015 Instl	TIAA-CREF/Fidelity	-0.47%	6.27%	-	-	-	0.10
2015 Moderate	Peer Group	-0.14%	6.27%	3.15%	6.71%	4.05%	
Morningstar Lifetime Moderate 2015 Index	Benchmark	-0.76%	7.10%	3.57%	6.48%	5.16%	
Vanguard Instl Target Retirement 2020 Instl	TIAA-CREF/Fidelity	-0.19%	7.04%	-	-	-	0.10
2020 Moderate	Peer Group	-0.11%	6.11%	3.22%	7.68%	3.99%	
Morningstar Lifetime Moderate 2020 Index	Benchmark	-0.56%	7.66%	3.80%	7.29%	5.18%	
Vanguard Instl Target Retirement 2025 Instl	TIAA-CREF/Fidelity	0.15%	7.56%	-	-	-	0.10
2025 Moderate	Peer Group	0.09%	6.81%	3.40%	8.30%	4.27%	
Morningstar Lifetime Moderate 2025 Index	Benchmark	-0.12%	8.39%	4.03%	8.27%	5.22%	
Vanguard Instl Target Retirement 2030 Instl	TIAA-CREF/Fidelity	0.44%	7.97%	-	-	-	0.10
2030 Moderate	Peer Group	0.53%	7.48%	3.66%	9.36%	4.20%	
Morningstar Lifetime Moderate 2030 Index	Benchmark	0.52%	9.26%	4.21%	9.20%	5.31%	
Vanguard Instl Target Retirement 2035 Instl	TIAA-CREF/Fidelity	0.83%	8.39%	-	-	-	0.10
20.35 Moderate	Peer Group	0.60%	7.93%	3.90%	9.73%	4.68%	
Morningstar Lifetime Moderate 2035 Index	Benchmark	1.17%	10.07%	4.30%	9.82%	5.41%	
Vanguard Instl Target Retirement 2040 Instl	TIAA-CREF/Fidelity	1.17%	8.81%	-	-	-	0.10
2040 Moderate	Peer Group	0.76%	7.41%	3.75%	9.88%	4.56%	
Morningstar Lifetime Moderate 2040 Index	Benchmark	1.60%	10.61%	4.28%	10.06%	5.45%	
Vanguard Instl Target Retirement 2045 Instl	TIAA-CREF/Fidelity	1.25%	8.94%	-	-	-	0.10
2045 Moderate	Peer Group	0.98%	7.94%	3.62%	9.47%	4.43%	
Morningstar Lifetime Moderate 2045 Index	Benchmark	1.74%	10.84%	4.20%	10.03%	5.41%	
Vanguard Instl Target Retirement 2050 Instl	TIAA-CREF/Fidelity	1.26%	8.95%	-	-	-	0.10
2050 Moderate	Peer Group	0.99%	7.95%	3.70%	9.77%	5.12%	
Morningstar Lifetime Moderate 2050 Index	Benchmark	1.71%	10.89%	4.07%	9.93%	5.35%	
Vanguard Instl Target Retirement 2055 Instl	TIAA-CREF/Fidelity	1.30%	9.00%	-	-	-	0.10
2055 Moderate	Peer Group	1.30%	8.38%	4.21%	10.06%	5.38%	
Morningstar Lifetime Moderate 2055 Index	Benchmark	1.65%	10.90%	3.94%	9.79%	5.27%	

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Vanguard Instl Target Retirement 2060 Instl	TIAA-CREF/Fidelity	1.25%	8.94%	-	-	-	0.10
2060+ Moderate	Peer Group	1.26%	8.72%	4.89%	-	-	
Morningstar Lifetime Moderate 2060 Index	Benchmark	1.57%	10.88%	3.81%	9.64%	5.29%	

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