



Nevada System of Higher Education  
Operating Fund  
September | 2017  
Investment Performance Report

CAMBRIDGE  ASSOCIATES

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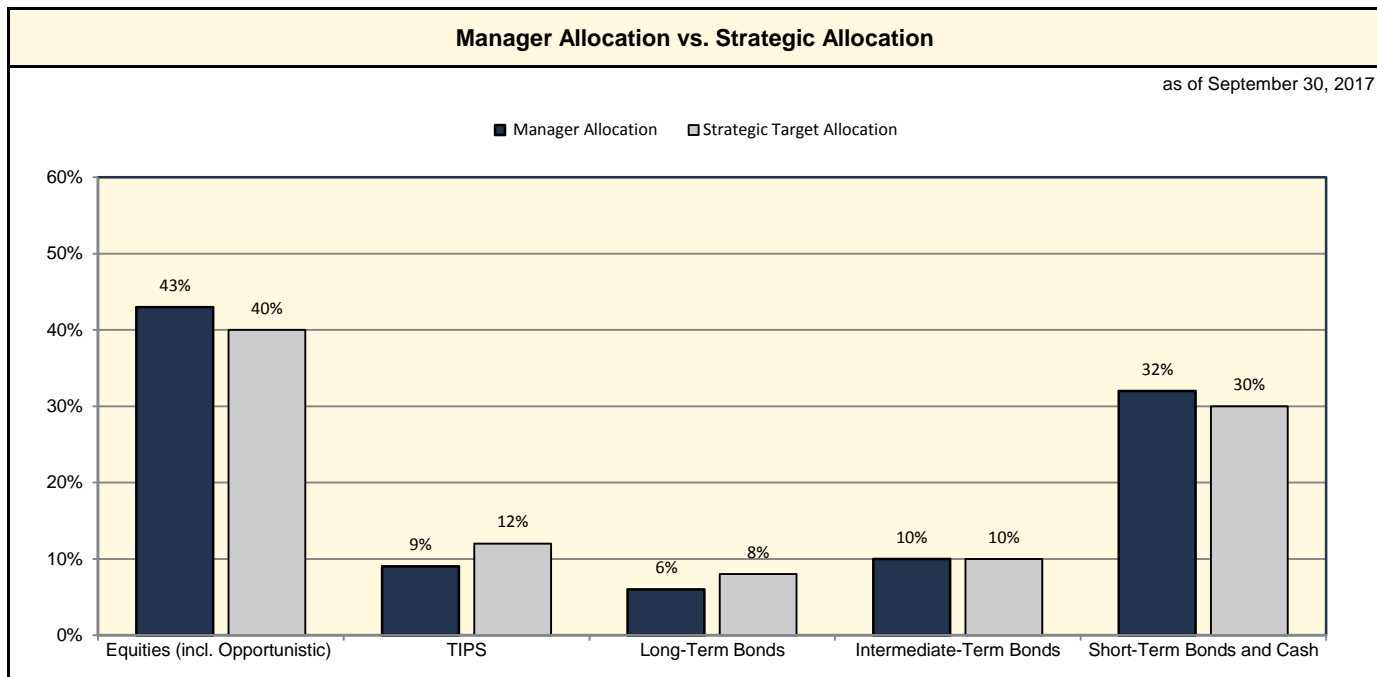
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**Nevada System of Higher Education Operating Fund**  
**Asset Allocation Policy** as of September 30, 2017

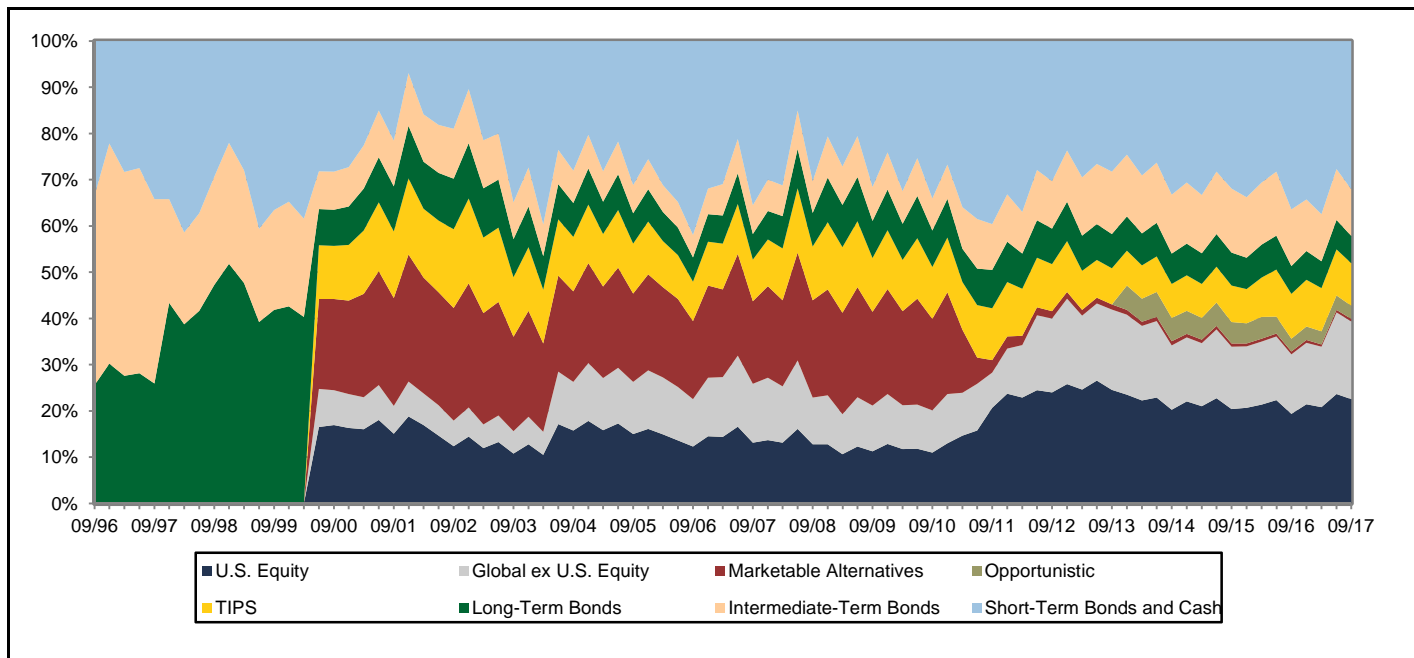
	Manager Allocation	Strategic Target Allocation	Strategic Target Range	Policy Variance	
				(\$000)	%
<b>Equities (incl. Opportunistic)</b>	<b>42.8%</b>	<b>40.0%</b>		<b>\$25,130</b>	<b>2.8%</b>
U.S. Equity	22.5%	24.0%	20%-30%	-\$13,149	-1.5%
Global ex U.S. Equity	16.8%	16.0%	10%-20%	\$7,573	0.8%
Marketable Alternatives	0.5%	0.0%		\$4,629	0.5%
Opportunistic	2.9%	0.0%	0%-10%	\$26,077	2.9%
<b>TIPS</b>	<b>9.2%</b>	<b>12.0%</b>	<b>5%-15%</b>	<b>-\$25,523</b>	<b>-2.8%</b>
<b>Long-Term Bonds</b>	<b>5.9%</b>	<b>8.0%</b>	<b>5%-15%</b>	<b>-\$19,370</b>	<b>-2.1%</b>
<b>Total Long-Term Pool</b>	<b>57.8%</b>	<b>60.0%</b>		<b>-\$19,762</b>	<b>-2.2%</b>
<b>Operating Liquidity Pools</b>	<b>42.2%</b>	<b>40.0%</b>		<b>\$19,762</b>	<b>2.2%</b>
Intermediate-Term Bonds	10.1%	10.0%	5%-15%	\$940	0.1%
Short-Term Bonds and Cash	32.1%	30.0%	25%-40%	\$18,822	2.1%



Note: Manager Allocation includes discretionary cash held by individual managers.  
 Policy Variance equals the difference between Manager Allocation and Strategic Allocation.  
 Short-Term Bonds and Cash includes funds pending placement.

**Nevada System of Higher Education Operating Fund**  
**Asset Allocation Over Time** as of September 30, 2017

	% of Portfolio				Market Value (\$)
	12/31/16	03/31/17	06/30/17	09/30/17	As Of 09/30/17
U.S. Equity	21.4%	20.8%	23.7%	22.5%	\$203,253,017
Global ex U.S. Equity	13.3	13.1	17.6	16.8	151,841,769
Marketable Alternatives	0.6	0.5	0.6	0.5	4,628,664
Opportunistic	2.9	2.8	3.1	2.9	26,077,459
TIPS	10.1	9.3	10.0	9.2	82,678,394
Long-Term Bonds	6.3	5.8	6.3	5.9	52,764,418
<b>Total Long-Term Pool</b>	<b>54.6</b>	<b>52.3</b>	<b>61.3</b>	<b>57.8</b>	<b>521,243,722</b>
Intermediate-Term Bonds	11.2	10.2	11.0	10.1	91,107,876
Short-Term Bonds and Cash	34.3	37.4	27.7	32.1	289,325,144
<b>Total Operating Fund</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>\$901,676,742</b>



Note: Actual Allocation is based on market value of assets at end of period. Values include discretionary cash held by managers. Short-Term Bonds and Cash includes funds pending placement.

## Nevada System of Higher Education Operating Fund Investment Manager Allocation Over Time as of September 30, 2017

Investment Manager	% of Portfolio					Market Value (\$) 09/30/17
	09/30/16	12/31/16	03/31/17	06/30/17	09/30/17	
<b>U.S. Equity</b>						
Vanguard Institutional Index	19.4%	21.4%	20.8%	23.7%	22.5%	\$203,253,017
<b>Global ex U.S. Equity</b>						
Manning & Napier <sup>(4)</sup>	6.3	6.4	6.3	8.4	8.1	72,896,077
MFS International	6.6	6.9	6.8	9.2	8.8	78,945,693
<b>Subtotal</b>	<b>12.9</b>	<b>13.3</b>	<b>13.1</b>	<b>17.6</b>	<b>16.8</b>	<b>151,841,769</b>
<b>Marketable Alternatives</b>						
Och-Ziff Overseas <sup>(1)</sup>	0.1	0.1	0.1	0.0	0.0	267,092
Farallon Capital <sup>(2)</sup>	0.5	0.6	0.5	0.5	0.5	4,361,572
<b>Subtotal</b>	<b>0.6</b>	<b>0.6</b>	<b>0.5</b>	<b>0.6</b>	<b>0.5</b>	<b>4,628,664</b>
<b>Opportunistic</b>						
PIMCO All Asset	2.8	2.9	2.8	3.1	2.9	26,077,459
<b>TIPS</b>						
Vanguard Inflation-Protected Securities	9.7	10.1	9.3	10.0	9.2	82,678,394
<b>Long-Term Bonds</b>						
PIMCO Total Return	3.9	4.1	3.8	4.1	3.8	34,548,581
Wells Capital Montgomery	2.1	2.2	2.0	2.2	2.0	18,215,837
<b>Subtotal</b>	<b>6.0</b>	<b>6.3</b>	<b>5.8</b>	<b>6.3</b>	<b>5.9</b>	<b>52,764,418</b>
<b>Total Long-Term Pool</b>	<b>51.3%</b>	<b>54.6%</b>	<b>52.3%</b>	<b>61.3%</b>	<b>57.8%</b>	<b>\$521,243,722</b>
<b>Intermediate-Term Bonds</b>						
WellsCap U.S. Short Duration Strategy	12.2	11.2	10.2	11.0	10.1	91,107,876
<b>Short-Term Bonds and Cash</b>						
State Street Inst Gov't MM	6.9	7.4	6.8	7.3	6.7	60,124,873
JP Morgan U.S. Treasury Plus MM	18.2	10.5	12.3	8.6	12.2	110,243,651
Wells Fargo Treasury Money Market	11.5	16.1	18.1	11.0	12.8	115,198,433
BofA Checking Account	-0.8	0.2	0.2	0.8	0.3	3,054,183
Funds Pending Placement <sup>(3)</sup>	0.7	0.1	0.1	0.1	0.1	704,005
<b>Subtotal</b>	<b>36.4</b>	<b>34.3</b>	<b>37.4</b>	<b>27.7</b>	<b>32.1</b>	<b>289,325,144</b>
<b>Total Operating Fund</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>\$901,676,742</b>

(1) Och-Ziff Overseas fully redeemed on 06/30/11. Market value represents holdback amount to be paid out after final audit and Special Situations Accounts.

(2) Farallon Capital fully redeemed on 12/31/10. Market value represents holdback amount to be paid out after final audit and Special Situations Accounts.

(3) Funds Pending Placement includes the value of liquidations from Och-Ziff awaiting cash distribution.

(4) Information is preliminary as of 09/30/17.

**Nevada System of Higher Education Operating Fund**  
**Investment Returns by Composite** (net of fees) as of September 30, 2017

Composite (Inception Date)	Assets \$ mil	Total Return (%)					
		Qtr to Date 06/30/17- 09/30/17	CYTD 12/31/16- 09/30/17	Cumulative Trailing 1 Year	Annualized Trailing 5 Years	Annualized Trailing 10 Years	Annualized Since Inception
<b>U.S. Equity (06/30/00)</b>	<b>203.3</b>	<b>4.5</b>	<b>14.2</b>	<b>18.6</b>	<b>14.2</b>	<b>7.6</b>	<b>5.5</b>
S&P 500 Index (06/30/00)		4.5	14.2	18.6	14.2	7.4	5.3
Value Added		0.0	0.0	0.0	0.0	0.2	0.3
<b>Global ex U.S. Equity (06/30/00)</b>	<b>151.8</b>	<b>4.7</b>	<b>21.9</b>	<b>18.0</b>	<b>7.6</b>	<b>1.2</b>	<b>3.7</b>
MSCI EAFE Index (N) (06/30/00)		5.4	20.0	19.1	8.4	1.3	3.6
Value Added		-0.7	2.0	-1.1	-0.8	-0.2	0.1
<b>Marketable Alternatives (06/30/00)</b>	<b>4.6</b>	<b>0.5</b>	<b>6.4</b>	<b>5.3</b>	<b>3.6</b>	<b>3.1</b>	<b>6.7</b>
HFRI Fund of Funds Diversified Index (06/30/00)		2.4	4.7	5.9	3.7	1.1	3.3
Value Added		-1.9	1.7	-0.6	-0.1	1.9	3.4
BofA ML T-Bill + 6% (06/30/00)		1.7	5.0	6.7	6.2	6.5	7.6
Value Added		-1.3	1.4	-1.4	-2.6	-3.4	-0.9
<b>Opportunistic (12/11/13)</b>	<b>26.1</b>	<b>3.2</b>	<b>9.8</b>	<b>8.8</b>	---	---	<b>1.9</b>
Opportunistic Custom Benchmark (11/30/13) <sup>(1)</sup>		2.3	7.3	7.2	---	---	4.1
Value Added		0.9	2.4	1.6	---	---	-2.3
<b>TIPS (06/30/00)</b>	<b>82.7</b>	<b>0.8</b>	<b>1.7</b>	<b>-1.0</b>	<b>0.1</b>	<b>3.8</b>	<b>5.5</b>
BBG Barc US TIPS Index (06/30/00)		0.9	1.7	-0.7	0.0	3.9	5.5
Value Added		-0.1	0.0	-0.3	0.1	-0.1	-0.1
<b>Long-Term Bonds (06/30/96)</b>	<b>52.8</b>	<b>1.3</b>	<b>4.3</b>	<b>1.6</b>	<b>2.3</b>	<b>5.5</b>	<b>6.3</b>
BBG Barc Aggregate Bond Index (06/30/96)		0.8	3.1	0.1	2.1	4.3	5.4
Value Added		0.4	1.2	1.5	0.2	1.2	0.9
<b>Total Long-Term Pool (06/30/96)</b>	<b>521.2</b>	<b>3.5</b>	<b>12.4</b>	<b>12.1</b>	<b>8.0</b>	<b>5.5</b>	<b>6.7</b>
<b>Intermediate-Term Bonds (06/30/96)</b>	<b>91.1</b>	<b>0.4</b>	<b>1.1</b>	<b>0.6</b>	<b>0.9</b>	<b>3.1</b>	<b>4.3</b>
BofA ML 1-3 Yr Treasury Bond Index (06/30/96)		0.2	0.7	0.2	0.6	1.7	3.4
Value Added		0.1	0.4	0.4	0.3	1.4	0.9
<b>Short-Term Bonds and Cash (06/30/96)<sup>(2)</sup></b>	<b>289.3</b>	<b>0.2</b>	<b>0.4</b>	<b>0.5</b>	<b>0.1</b>	<b>0.4</b>	<b>2.4</b>
BofA ML 91-Day Treasury Bills (06/30/96)		0.3	0.6	0.7	0.2	0.5	2.3
Value Added		-0.1	-0.1	-0.2	-0.1	-0.1	0.1

(1) For benchmark details, please refer to the Custom Benchmark Composition exhibit in the Reference section.

(2) Includes Funds Pending Placement.

**Nevada System of Higher Education Operating Fund**  
**Investment Returns by Composite** (net of fees) as of September 30, 2017

Composite (Inception Date)	Assets \$ mil	Total Return (%)					
		Qtr to Date	CYTD	Cumulative	Annualized	Annualized	Annualized
		06/30/17- 09/30/17	12/31/16- 09/30/17	Trailing 1 Year	Trailing 5 Years	Trailing 10 Years	Since Inception
<b>Total Operating Fund (06/30/96)</b>	<b>901.7</b>	<b>2.4</b>	<b>7.4</b>	<b>7.2</b>	<b>4.8</b>	<b>3.6</b>	<b>5.0</b>
Policy Index (06/30/96) <sup>(1)</sup>		2.2	7.0	7.4	5.1	3.5	4.5
Value Added		0.1	0.4	-0.2	-0.3	0.1	0.5
Long-Term Policy Index (06/30/96) <sup>(1)</sup>		2.2	7.0	7.4	5.1	4.1	5.0
Value Added		0.1	0.4	-0.2	-0.3	-0.5	0.0

(1) For benchmark details, please refer to the Custom Benchmark Composition exhibit in the Reference section.



**Nevada System of Higher Education Operating Fund**  
**Investment Returns by Manager** (net of fees) as of September 30, 2017

Manager (Inception Date)	Assets \$ mil	Total Return (%)					
		Qtr to Date	CYTD	Cumulative	Annualized	Annualized	Annualized
		06/30/17- 09/30/17	12/31/16- 09/30/17	Trailing 1 Year	Trailing 5 Years	Trailing 10 Years	Since Inception
<b>U.S. Equity</b>							
Vanguard Institutional Index (02/20/08)	203.3	4.5	14.2	18.6	14.2	---	9.0
S&P 500 Index (02/20/08)		4.5	14.2	18.6	14.2	---	9.0
Value Added		0.0	0.0	0.0	0.0	---	0.0
<b>Global ex U.S. Equity</b>							
Manning & Napier (12/31/11) <sup>(5)</sup>	72.9	5.1	20.6	15.2	6.3	---	7.7
MSCI EAFE Index (N) (12/31/11)		5.4	20.0	19.1	8.4	---	9.1
Value Added		-0.3	0.7	-3.9	-2.0	---	-1.4
MFS International (12/31/11)	78.9	4.4	23.1	20.6	8.8	---	9.9
MSCI EAFE Index (N) (12/31/11)		5.4	20.0	19.1	8.4	---	9.1
Value Added		-1.1	3.1	1.5	0.4	---	0.8
<b>Marketable Alternatives</b>							
Och-Ziff Overseas (06/30/00) <sup>(1)(2)</sup>	0.3	-4.0	0.2	-5.6	-0.2	0.0	4.5
HFRI Fund of Funds Diversified Index (06/30/00)		2.4	4.7	5.9	3.7	1.1	3.3
Value Added		-6.3	-4.5	-11.5	-3.9	-1.1	1.2
BofA ML T-Bill + 6% (06/30/00)		1.7	5.0	6.7	6.2	6.5	7.6
Value Added		-5.7	-4.9	-12.2	-6.4	-6.4	-3.2
Farallon Capital (06/30/00) <sup>(3)</sup>	4.4	0.7	6.7	6.2	4.1	3.4	7.3
HFRI Fund of Funds Diversified Index (06/30/00)		2.4	4.7	5.9	3.7	1.1	3.3
Value Added		-1.6	2.0	0.4	0.4	2.3	4.0
BofA ML T-Bill + 6% (06/30/00)		1.7	5.0	6.7	6.2	6.5	7.6
Value Added		-1.0	1.7	-0.4	-2.1	-3.0	-0.3
<b>Opportunistic</b>							
PIMCO All Asset (12/11/13)	26.1	3.2	9.8	8.8	---	---	1.9
Opportunistic Custom Benchmark (11/30/13) <sup>(4)</sup>		2.3	7.3	7.2	---	---	4.1
Value Added		0.9	2.4	1.6	---	---	-2.3

(1) Reflects fund level returns through 12/31/10. Beginning on 01/01/11, returns are client specific.

(2) Och-Ziff Overseas fully redeemed on 06/30/11. Market value represents holdback amount to be paid out after final audit and Special Situations Accounts.

(3) Farallon Capital fully redeemed on 12/31/10. Market value represents holdback amount to be paid out after final audit and Special Situations Accounts.

(4) For benchmark details, please refer to the Custom Benchmark Composition exhibit in the Reference section.

(5) Information is preliminary as of 09/30/17.



**Nevada System of Higher Education Operating Fund**  
**Investment Returns by Manager** (net of fees) as of September 30, 2017

Manager (Inception Date)	Assets \$ mil	Total Return (%)					
		Qtr to Date	CYTD	Cumulative	Annualized	Annualized	Annualized
		06/30/17- 09/30/17	12/31/16- 09/30/17	Trailing 1 Year	Trailing 5 Years	Trailing 10 Years	Since Inception
<b>TIPS</b>							
Vanguard Inflation-Protected Securities (09/30/14)	82.7	0.8	1.7	-1.0	---	---	1.6
BBG Barc US TIPS Index (09/30/14)		0.9	1.7	-0.7	---	---	1.6
Value Added		-0.1	0.0	-0.3	---	---	0.0
<b>Long-Term Bonds</b>							
PIMCO Total Return (07/31/97)	34.5	1.5	5.0	2.4	2.4	5.6	6.1
BBG Barc Aggregate Bond Index (07/31/97)		0.8	3.1	0.1	2.1	4.3	5.1
Value Added		0.7	1.9	2.4	0.4	1.4	1.0
Wells Capital Montgomery (11/04/11)	18.2	0.8	3.0	-0.0	2.1	---	2.9
BBG Barc Aggregate Bond Index (11/04/11)		0.8	3.1	0.1	2.1	---	2.5
Value Added		0.0	-0.1	-0.1	0.0	---	0.4
<b>Intermediate-Term Bonds</b>							
WellsCap U.S. Short Duration Strategy (07/08/15)	91.1	0.4	1.1	0.6	---	---	1.0
BBG Barc 1-3 Yr Govt Bond Index (07/08/15)		0.2	0.7	0.3	---	---	0.6
Value Added		0.1	0.3	0.4	---	---	0.5
<b>Short-Term Bonds and Cash</b>							
State Street Inst Gov't MM (02/09/10)	60.1	0.2	0.5	0.6	0.1	---	0.1
BofA ML 91-Day Treasury Bills (02/09/10)		0.3	0.6	0.7	0.2	---	0.2
Value Added		0.0	0.0	0.0	-0.1	---	-0.1
JP Morgan U.S. Treasury Plus MM (02/01/16)	110.2	0.2	0.5	0.5	---	---	0.3
BofA ML 91-Day Treasury Bills (02/01/16)		0.3	0.6	0.7	---	---	0.5
Value Added		0.0	-0.1	-0.1	---	---	-0.2
Wells Fargo Treasury Money Market (07/22/11)	115.2	0.2	0.4	0.4	0.1	---	0.1
BofA ML 91-Day Treasury Bills (07/22/11)		0.3	0.6	0.7	0.2	---	0.2
Value Added		-0.1	-0.2	-0.2	-0.1	---	-0.1

**Nevada System of Higher Education Operating Fund**  
**Investment Returns by Manager** (net of fees) as of September 30, 2017

Manager (Inception Date)	Assets \$ mil	Total Return (%)					
		Qtr to Date	CYTD	Cumulative	Annualized	Annualized	Annualized
		06/30/17- 09/30/17	12/31/16- 09/30/17	Trailing 1 Year	Trailing 5 Years	Trailing 10 Years	Since Inception
BofA Checking Account (06/30/15)	3.1	0.0	0.0	0.0	---	---	0.0
BofA ML 91-Day Treasury Bills (06/30/15)		0.3	0.6	0.7	---	---	0.4
Value Added		-0.3	-0.6	-0.7	---	---	-0.4
Funds Pending Placement (06/30/11) <sup>(5)</sup>	0.7	---	---	---	---	---	---

(5) Funds Pending Placement includes the value of liquidations from Och-Ziff awaiting cash distribution.

**Nevada System of Higher Education Operating Fund  
Custom Benchmark Compositions**

**Policy Index**

	Wilshire 5000 Total Market Index	MSCI EAFE Index (N)	HFRI FOF Diversified Index	ML T-Bill Index	ML Short-Term U.S. Treasuries Index	BBG Barc Aggregate Bond Index	BBG Barc U.S. TIPS Index
<b>Inception to 06/30/00:</b>	X	X	X	30%	20%	50%	X
<b>07/01/00 to 03/31/11:</b>	15%	9%	21%	30%	7%	7%	11%
<b>04/01/11 to Present:</b>	24%	16%	X	30%	10%	8%	12%

**Long-Term Policy Index**

	Wilshire 5000 Total Market Index	MSCI EAFE Index (N)	ML T-Bill +6% Index	ML T-Bill Index	ML Short-Term U.S. Treasuries Index	BBG Barc Aggregate Bond Index	BBG Barc U.S. TIPS Index
<b>Inception to 06/30/00:</b>	X	X	X	30%	20%	50%	X
<b>07/01/00 to 03/31/11:</b>	15%	9%	21%	30%	7%	7%	11%
<b>04/01/11 to Present:</b>	24%	16%	X	30%	10%	8%	12%

**Opportunistic Custom Benchmark**

	MSCI World Index	BBG Barc Aggregate Bond Index	ML T-Bill Index
<b>Inception to Present:</b>	40%	30%	30%

## Methodology & Calculations

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Cambridge Associates LLC (CA) has established a proprietary database to monitor a client's portfolio across managers, asset classes, and at the total assets level. Users of the analysis may find the following description of the data sources, classification of investments, and the calculation techniques helpful in their interpretation of information that may be presented in the Investment Performance Report. Please note that certain data and calculation methodologies have evolved over time and may be time boxed to specific periods using a methodology wall specific to each client.

1. Investment manager statements are the primary source of information concerning client market values, returns, and cash flow transactions. In cases where managers are unable to provide data or where CA is otherwise instructed, other data sources may be substituted including, but not limited to custodian and/or client provided data. CA may also make use of third party data vendors to source fund-level returns.
2. Investment manager inception dates represent the initial funding dates unless otherwise indicated. Tracked performance begins on the first day after the manager inception date unless otherwise instructed.
3. All performance figures are shown on a total return basis and in U.S. Dollars unless otherwise indicated. All return time periods over one year are annualized unless otherwise indicated. Annualized returns follow an actual month/12 convention with the exception of the annualized since inception return, which follows an actual day/365 convention to account for non-month-end inception dates.
4. All returns presented in marketable performance reports are time-weighted unless otherwise indicated. A time-weighted return (TWR) measures the return of a single dollar invested continuously for a specific time period. TWRs provide equal weight to each time period, thereby neutralizing the impact of external cash flows. In contrast to money-weighted returns, TWRs are not influenced by withdrawals or contributions to the portfolio. Due to most long-only and hedge fund managers' lack of direct influence over the timing of investor cash flows, a TWR allows for more appropriate performance evaluation for marketable investments.
5. Preliminary Data is used in cases when the final performance figures for the period have not been supplied by a manager or custodian at the time the report is produced. To arrive at preliminary figures, CA may utilize one of the following approaches:
  - CA may report preliminary performance figures as provided by a manager or custodian when available.
  - CA may calculate performance using the previous period ending market value, cash flows that occurred during the period, and current period ending market value, as reported by a manager or custodian. If there are no cash flows, CA will use the 0% return that results from the calculation. For any situations that CA rolls forward performance using cash flows that are in a currency other than the reporting currency, CA applies the exchange rate at the end of the period to the preliminary market value at the end of the period.
  - CA may use proxy return information to estimate a preliminary market value. A proxy might be an investment vehicle offered the same manager with a similar strategy, but using a different fund structure, e.g. a mutual fund version in place of a separate account. A proxy could also be an index that has been set by the investment team that closely mirrors the investment goals of the investment, potentially the same index as the benchmark for the investment.

For information on the specific approach used, please reach out to your performance analyst or team.

## Methodology & Calculations

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6. Marketable investment manager returns are tracked through CA's proprietary performance database system on a monthly basis. If monthly returns are unavailable, quarterly returns may be substituted. All returns for periods longer than one month are calculated by geometrically linking the monthly returns. All returns are net of management fees unless otherwise indicated.

7. In some cases, performance figures reported by a manager are gross of fees. CA will attempt to convert gross returns to returns net of fees to allow for a more fair comparison across managers. CA may utilize one of the following approaches for handling performance received as gross:

- CA may leave the reported performance figure as a gross return and footnote that the performance is gross.
- CA may calculate the return by revising the reported ending market value based on cash flow information from the custodian or manager that is specifically for fees.
- CA may calculate the return using the reported fee structure of the investment.

For information on the specific approach used, please reach out to your performance analyst or team.

8. In cases where CA is instructed to report a return net of CA fees, the quarterly fee paid by the client is divided into equal monthly tranches. Each monthly tranche is divided by the respective average capital base and multiplied by 100 to be additive with the time weighted return. For more information on adjusting performance for CA fees, please reach out to your performance analyst or investment team.

9. Hedge Fund (HF) manager returns are presented net of both management and incentive fees unless otherwise labeled. Detailed analysis of HF returns, long/short positions, and strategy exposures are available in a separate HF Performance Report for HF Performance Reporting subscribers.

10. For periods prior to the methodology wall, returns for Private Investments (PI) included in marketable reports are quarterly Internal Rates of Return (IRR's) calculated by CA's proprietary PI database. The IRR (Net to Limited Partner) reflects the client's return on its investment in the partnership net of fees, expenses, and carried interest received by the general partners. In order to transform the quarterly money-weighted return (IRR) series into a monthly time-weighted series for use in marketable reporting, C|A follows the following convention: 0% return (first month), quarterly IRR (second month), 0% return (third month). Aggregated PI cash flows are stored on the quarterly mid-point. For periods after the methodology wall, PI returns included in marketable reports are calculated monthly using Modified Dietz. PI cash flows are tracked daily on the specific dates they occur. Since PI valuations are typically reported quarterly, market values in the first and second months of the quarter will be reported using the last known quarterly valuation adjusted for interim cash flows. As a result, the primary performance impact of PI will be realized in the third month of the quarter, consistent with the reporting date of most PI funds. Due to the timing of information availability from private investment managers, PI returns are reported on a one-quarter lag. See section 11 below to understand how performance is calculated for current periods given the lag in PI reporting. Detailed analysis of PI money-weighted returns, commitments, and strategy exposures are available in a separate PI Performance Report for PI Performance Reporting subscribers.

## Methodology & Calculations

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11. Given the majority of Private Investment managers provide performance on a quarter lag and will not typically report a preliminary number, CA may utilize one of the following approaches:
- CA may carry forward the ending market value of the previous period resulting in a 0% return (excluding any currency effects).
  - CA may roll forward the market value from the previous period using cash flows as reported to a custodian. For any situations that CA rolls forward performance using cash flows that are in a currency other than the reporting currency, CA applies the exchange rate at the end of the period to the preliminary market value at the end of the period.
  - CA may use a public index as a proxy return for a private investment.

For information on the specific approach used, please reach out to your performance analyst or team.

12. CA utilizes trade date accounting, with purchases or sales recognized on the date of purchase or sale and not the settlement date. Additionally, CA utilizes an end-of-day cash flow methodology, with all cash flows assumed to occur after the close of business for calculation purposes. It is possible that CA's cash flow dates may deviate from the dates reported from other sources due to differences in methodology, timing, intended consumer, etc.

13. Composites (synonymous with sleeves) represent a collective value for a grouping of similar investments as if their underlying assets were pooled into one "master portfolio". Investments are assigned to a particular composite according to the classification of their investments and the specific objectives of the client. For periods prior to the methodology wall, composite performance is calculated by asset-weighting individual investment-level returns by each investment's average capital base (ACB) as a percentage of the total composite ACB. The ACB consists of an investment's beginning market value adjusted for the daily-weighted cash flows during the period. Due to the daily weighting methodology, cash flows occurring earlier (later) in the period will have a greater (lesser) weight in the ACB calculation. For periods after the methodology wall, composite performance is calculated using Modified Dietz. Modified Dietz involves pooling the market values and cash flows of the underlying investments and calculating a return based on the net profit or loss of the composite divided by the composite's ACB. If a composite experiences a large intra-month cash flow (defined as a net cash flow of greater than 20% of the composite's beginning market value), the composite will be revalued and divided into one or more sub-periods that will be geometrically linked to calculate the monthly return.

14. The CA Manager statistics, consisting of Medians, Universe Size, and Percentile Ranking are derived from CA's proprietary database covering investment managers and exclude managers that exclude cash from their reported total returns. For calculations including any years from 1998 to the present, those managers with less than \$50 million in product assets are excluded. Returns for inactive (discontinued) managers are included if performance is available for the entire performance period measured. The Medians will not include simulated performance series provided by managers.

15. CA Manager Medians are compiled at each quarter end. CA Percentile Rankings are based upon a scale of 0 to 100, where 0 represents the best performing and 100 the worst. Returns in place for less than the full quarterly period are not ranked.

## Methodology & Calculations

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16. As a result of CA's methodology, it is incorrect to link quarterly medians to come up with a median over an extended time period. The compounded median that would result from such a calculation would be different from the 50th percentile manager ranking for the complete time under consideration.

17. The CA Preliminary Peer Medians are populated from CA's Client base, the majority of which are tracked by the Performance Reporting department. All Taxable Clients are excluded from the universe. The CA Preliminary Peer Medians are compiled on a quarterly basis and Median returns are available approximately starting four weeks after quarter end. As CA's Client base reports in, the universe size will grow accordingly. A minimum of 15 Clients must be present for the CA Preliminary Peer Medians to be generated for the given time period. Approximately six weeks to eight weeks after quarter end, the CA Preliminary Peer Medians have the capability to be filtered by asset size and institution type. The Preliminary Peer Medians return and percentile rankings within the universe reported in any given Performance Report will be dependent on the available universe of similar institutions at the time the report is prepared.

18. Index returns are reported on the same basis as investment manager returns. Performance is shown on a total return basis, where tracked performance begins first day after investment manager inception unless otherwise stated. If an index is unavailable for the current period or a partial period, CA will use an assumption-based method, including but not limited to, a 0% return, the trailing twelve month average for the index, or a constant daily return derived from the monthly return in the case of partial periods. Please see Index Vendor list for source disclosure.



## Index Sources

The Investment Performance Report was prepared using a subset of the listed Index Data providers below

Barclay Trading Group	J.P. Morgan Securities, Inc.
Barclays	JPMorgan H&Q
BARRA	Kinder, Lydenberg, Domini & Co., Inc.
Barron's	Lipper Inc.
Bloomberg L.P.	MSCI Inc.
BofA Merrill Lynch	Morgan Stanley Dean Witter
British Bankers' Association	National Association of Real Estate Investment Trusts
Cambridge Associates LLC	National Council of Real Estate Investment Fiduciaries
Chase Manhattan Bank	OECD
Citigroup Global Markets	Property & Portfolio Research, Inc.
Commodity Research Bureau	Price Group
<i>Common-Stock Indexes (Cowles Commission)</i>	Prudential Real Estate Investors
Credit Lyonnais Securities Asia	Salomon Smith Barney
Credit Suisse	Standard & Poor's
CS First Boston Corp.	Standard & Poor's Compustat
CS First Boston High-Yield Market Research Group	SWX Swiss Exchange
Deutsche Bank	Thomson Reuters Datastream
Dow Jones Indexes	UBS Global Asset Management
Edward I. Altman - NYU Salomon Center	U.S. Dept of Labor - Bureau of Labor Statistics
Eurekahedge	<i>The Wall Street Journal</i>
European Public Real Estate Association	Wilshire Associates, Inc.
FactSet Research Systems, Inc.	WM Company
FBC High Yield Research	
Federal Reserve	
Frank Russell Company	
FTSE International Limited	
Goldman, Sachs & Co.	
Grantham, Mayo, Van Otterloo & Company	
Hambrecht & Quist	
Hedge Fund Research, Inc.	
Hoare Govett Corporate Finance Ltd.	
HSBC	
ING Barings	
International Finance Corporation	

## Index Disclaimers

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Note: The 91-Day Treasury Bill Index sources the BofA Merrill Lynch 91-Day Treasury Bills Index from Jan 1978 to present.

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Pre-1978 data represents returns calculated by Cambridge Associates using yields from the Federal Reserve.

Total returns for MSCI Emerging Markets and All Country indices are gross of dividend taxes unless specifically noted with (NET). Total returns for MSCI developed markets indices are net of dividend taxes.

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## General Disclaimers

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The performance report represents Cambridge Associates LLC (CA) highest confidence estimate of investment performance and portfolio positioning prepared using the best information set available at the time of report production. It is a snapshot at a point in time and is subject to change. Historical results can and likely will adjust over time as updated information is received and processed. Estimated, preliminary, and/or proxy information may be displayed and can change with finalized information over time, and CA disclaims any obligation to update a previously provided performance report when such changes occur. The performance report is not intended as a Book of Record nor is it intended for valuation, reconciliation, accounting, auditing, or staff compensation purposes, and CA assumes no responsibility if the report is used in any of these ways.

The primary data source for CA reporting is the investment manager and/or fund administrator, as such; data may not match to custodial or other client records due to differences in data sourcing, methodology, valuation practices, etc. Estimated values may include prior quarter end data adjusted by a proxy benchmark or by subsequent cash flows. In some instances, data may be sourced directly from a client and/or prior advisors or service providers. CA makes no representations that data reported by unaffiliated parties is accurate, and reporting services provided do not include reconciliation services between manager, custodian, and client records. The nature of performance measurement is such that it is a best estimate of performance. As such, performance is displayed to a one decimal place level of precision, accommodating up to nine basis points (0.09%) of imprecision in reported returns. There are multiple methodologies available for use in the calculation of portfolio performance, each correct on their own merits, each with their own unique challenges, and each may yield different results. Differences in both data inputs and calculation methodologies can lead to different calculation results.

As part of the reporting process, errors can and do occur. For the purpose of CA reports, an error represents any component of the performance report that is missing or inaccurate, including, but not limited to, composite returns and market values, manager returns and market values, benchmark returns, risk and other statistical measures, holdings and exposures. Errors can be a result of incorrect aspects of data, calculations, setup, and software or may be a result of an omission, incorrect value, incorrect systematic computation, incorrect report production, and other similar reasons. For classification as an error, the item in question must be objectively incorrect according to the standard policies, procedures, and methodologies utilized by CA. Differences due to changes in methodology over time, the difference between preliminary and final data and other related changes do not constitute errors, but rather normal course of business for the reporting process. Though CA makes reasonable efforts to discover inaccuracies in the input data used in the performance report, CA cannot guarantee the accuracy and are ultimately not liable for inaccurate information provided by external sources. Clients should compare the values shown on our performance reports with the statements sent directly from their custodians, administrators or investment managers.

In the event that an error is discovered, CA will correct the error and maintain the most accurate information possible. In the event of a material error, CA will disclose the error to the report recipient along with an updated version of the report from the most recent period.

CA's performance report is intended to be offered as a standardized product. CA may be instructed by the client to customize aspects of the report outside of CA's standard policies and procedures. Deviating from CA's standard operating policies and procedures can compromise the quality of the report and increase the risk of errors. Customization requests cannot be accommodated in all cases if it is deemed that necessary systems and controls are not in place to minimize errors or reduce the validity of the report. Customizations including but not limited to data sourcing, data input, methodologies and report display are acknowledged by the recipient as potentially compromising to the quality of the deliverable and the recipient bears joint responsibility for any ensuing quality breaches as a result of these customizations.