



**Pittsburgh Comprehensive Municipal Pension**

Pittsburgh Comprehensive Municipal

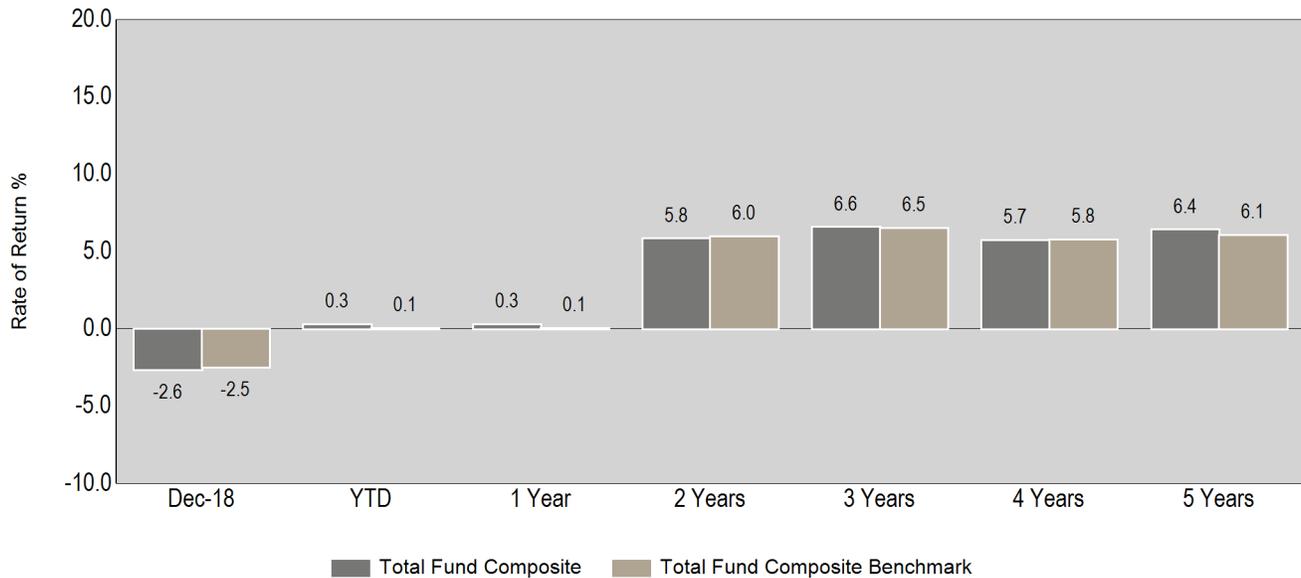
PRELIMINARY

Executive Summary

**December 31, 2018**



**Return Summary**  
Ending December 31, 2018



**Return Summary YTD**

**Asset Allocation vs. Target**

	Total Return	Current	Current	Policy	Difference*	%	
Total Fund Composite	0.3%						
Total Invested Portfolio	-4.6%						
Fixed Income Composite	-0.9%						
U.S. Equity Composite	-7.1%						
Non-U.S. Equity Composite	-11.3%						
Emerging Manager Composite	-9.8%						
Hedge Fund Composite	-2.4%						
		Fixed Income	74,232,947	10.2	13.0	-20,450,240	-2.8
		U.S. Equity	159,420,415	21.9	22.0	-812,670	-0.1
		Non-U.S. Equity	69,928,993	9.6	12.0	-17,470,872	-2.4
		Hedge Funds	57,246,204	7.9	5.0	20,829,594	2.9
		Real Assets	44,603,371	6.1	5.0	8,186,761	1.1
		Private Equity	9,106,594	1.3	3.0	-12,743,372	-1.7
		Other	313,793,682	43.1	40.0	22,460,799	3.1
		<b>Total</b>	<b>728,332,206</b>	<b>100.0</b>	<b>100.0</b>		

\*Difference between Policy and Current Allocation

**Summary of Cash Flows**

	Last Month	Year-To-Date	One Year	Three Years	Five Years
Beginning Market Value	\$754,624,668	\$750,499,703	\$750,499,703	\$663,365,261	\$650,194,884
Net Cash Flow	-\$6,460,077	-\$25,550,592	-\$25,550,592	-\$72,495,973	-\$140,900,789
Net Investment Change	-\$19,832,385	\$3,383,095	\$3,383,095	\$137,462,918	\$219,038,111
Ending Market Value	\$728,332,206	\$728,332,206	\$728,332,206	\$728,332,206	\$728,332,206

# Total Fund Composite

Market Value: \$728.3 Million and 100.0% of Fund

Ending December 31, 2018

	Asset Class	Market Value	1 Mo Net Cash Flows	% of Portfolio	Policy %	Policy Difference
<b>Total Fund Composite</b>		<b>\$728,332,206</b>	<b>-\$6,501,181</b>	<b>100.0%</b>	<b>100.0%</b>	<b>\$0</b>
Dedicated Funding for CMPTF	Fixed Income Annuity	\$298,224,063	\$0	40.9%	40.0%	\$6,891,181
<b>Total Invested Portfolio</b>		<b>\$430,108,143</b>	<b>-\$6,501,181</b>	<b>59.1%</b>	<b>60.0%</b>	<b>-\$6,891,181</b>
<b>Fixed Income Composite</b>		<b>\$74,232,947</b>	<b>-\$11,328</b>	<b>10.2%</b>	<b>13.0%</b>	<b>-\$20,450,240</b>
Federated Investors	Core Fixed Income	\$54,374,901	-\$11,328	7.5%		
BlackRock Total Return Fund	Core Fixed Income	\$19,858,046	\$0	2.7%		
<b>U.S. Equity Composite</b>		<b>\$154,897,910</b>	<b>-\$26,901</b>	<b>21.3%</b>	<b>22.0%</b>	<b>-\$5,335,175</b>
SSgA S&P 500 Index Fund	Large-Cap Core	\$101,548,661	\$0	13.9%		
Frontier Capital Management	Smid-Cap Core	\$27,579,641	-\$17,237	3.8%		
Guyasuta Investment Advisors	Small-Cap Core	\$25,769,608	-\$9,664	3.5%		
<b>Non-U.S. Equity Composite</b>		<b>\$76,714,939</b>	<b>\$0</b>	<b>10.5%</b>	<b>12.0%</b>	<b>-\$10,684,925</b>
MFS International Equity Fund	Non-U.S. Large-Cap Core	\$59,720,887	\$0	8.2%		
SSgA Active Emerging Markets Fund	Emerging Markets	\$8,098,484	\$0	1.1%		
ABS Emerging Markets	Emerging Markets	\$8,895,568	\$0	1.2%		
<b>Emerging Manager Composite</b>		<b>\$6,632,127</b>	<b>-\$2,875</b>	<b>0.9%</b>	<b>--</b>	<b>\$6,632,127</b>
Twin Capital	Large-Cap Core	\$2,386,159	-\$404	0.3%		
CIM Investment Management	Small-Cap Core	\$2,136,347	-\$1,241	0.3%		
Fusion Investment Group	Global Core Equity	\$2,109,621	-\$1,231	0.3%		
<b>Hedge Fund Composite</b>		<b>\$48,350,636</b>	<b>\$13,000,000</b>	<b>6.6%</b>	<b>5.0%</b>	<b>\$11,934,026</b>
ABS Offshore SPC Global	Hedged Equity Hedge FoF	\$13,007,030	\$0	1.8%		
Entrust Diversified Select Equity Fund	Hedged Equity Hedge FoF	\$1,259,782	\$0	0.2%		
Entrust Special Opportunities Fund III	Multi-Strat. Hedge Fund	\$10,369,894	\$0	1.4%		
Entrust Three Rivers Partners	Multi-Strat. Hedge Fund	\$13,000,000	\$13,000,000	1.8%		
Parametric Defensive Equity	Defensive Equity	\$10,713,930	\$0	1.5%		
<b>Real Estate Composite</b>		<b>\$44,603,371</b>	<b>\$0</b>	<b>6.1%</b>	<b>5.0%</b>	<b>\$8,186,761</b>
Rreef America II	Core Real Estate	\$22,718,689	\$0	3.1%	2.5%	\$4,510,384
Barings Core Property Fund	Core Real Estate	\$21,884,682	\$0	3.0%	2.5%	\$3,676,377
<b>Private Equity Composite</b>		<b>\$9,106,594</b>	<b>\$0</b>	<b>1.3%</b>	<b>3.0%</b>	<b>-\$12,743,372</b>
<b>Cash Composite</b>		<b>\$15,569,619</b>	<b>-\$19,460,077</b>	<b>2.1%</b>	<b>0.0%</b>	<b>\$15,569,619</b>

- Private Equity Composite may not include current performance, due to reporting cycle limitations.

## Total Invested Portfolio

Market Value: \$430.1 Million and 59.1% of Fund

Ending December 31, 2018

	Asset Class	Market Value	3 Mo Net Cash Flows	% of Portfolio
<b>Total Invested Portfolio</b>		<b>\$430,108,143</b>	<b>\$8,045,934</b>	<b>100.0%</b>
<b>Fixed Income Composite</b>		<b>\$74,232,947</b>	<b>-\$33,731</b>	<b>17.3%</b>
Federated Investors	Core Fixed Income	\$54,374,901	-\$33,731	12.6%
BlackRock Total Return Fund	Core Fixed Income	\$19,858,046	\$0	4.6%
<b>U.S. Equity Composite</b>		<b>\$154,897,910</b>	<b>-\$86,535</b>	<b>36.0%</b>
SSgA S&P 500 Index Fund	Large-Cap Core	\$101,548,661	\$0	23.6%
Frontier Capital Management	Smid-Cap Core	\$27,579,641	-\$55,575	6.4%
Guyasuta Investment Advisors	Small-Cap Core	\$25,769,608	-\$30,960	6.0%
<b>Non-U.S. Equity Composite</b>		<b>\$76,714,939</b>	<b>\$0</b>	<b>17.8%</b>
MFS International Equity Fund	Non-U.S. Large-Cap Core	\$59,720,887	\$0	13.9%
SSgA Active Emerging Markets Fund	Emerging Markets	\$8,098,484	\$0	1.9%
ABS Emerging Markets	Emerging Markets	\$8,895,568	\$0	2.1%
<b>Emerging Manager Composite</b>		<b>\$6,632,127</b>	<b>-\$9,149</b>	<b>1.5%</b>
Twin Capital	Large-Cap Core	\$2,386,159	-\$1,285	0.6%
CIM Investment Management	Small-Cap Core	\$2,136,347	-\$4,061	0.5%
Fusion Investment Group	Global Core Equity	\$2,109,621	-\$3,803	0.5%
<b>Hedge Fund Composite</b>		<b>\$48,350,636</b>	<b>\$13,000,000</b>	<b>11.2%</b>
ABS Offshore SPC Global	Hedged Equity Hedge FoF	\$13,007,030	\$0	3.0%
Entrust Diversified Select Equity Fund	Hedged Equity Hedge FoF	\$1,259,782	\$0	0.3%
Entrust Special Opportunities Fund III	Multi-Strat. Hedge Fund	\$10,369,894	\$0	2.4%
Entrust Three Rivers Partners	Multi-Strat. Hedge Fund	\$13,000,000	\$13,000,000	3.0%
Parametric Defensive Equity	Defensive Equity	\$10,713,930	\$0	2.5%
<b>Real Estate Composite</b>		<b>\$44,603,371</b>	<b>-\$178,152</b>	<b>10.4%</b>
Rreef America II	Core Real Estate	\$22,718,689	-\$178,152	5.3%
Barings Core Property Fund	Core Real Estate	\$21,884,682	\$0	5.1%
<b>Private Equity Composite</b>		<b>\$9,106,594</b>	<b>-\$18,235</b>	<b>2.1%</b>
<b>Cash Composite</b>		<b>\$15,569,619</b>	<b>-\$4,628,265</b>	<b>3.6%</b>

- Private Equity Composite may not include current performance, due to reporting cycle limitations.

## Investment Manager

## Annualized Performance (Net of Fees)

Market Value: \$728.3 Million and 100.0% of Fund

Ending December 31, 2018

	1 Mo	3 Mo	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
<b>Total Fund Composite</b>	<b>-2.6%</b>	<b>-4.2%</b>	<b>0.3%</b>	<b>5.8%</b>	<b>6.6%</b>	<b>5.7%</b>	<b>6.4%</b>	<b>8.2%</b>	<b>8.7%</b>
<i>Total Fund Composite Benchmark</i>	-2.5%	-4.3%	0.1%	6.0%	6.5%	5.8%	6.1%	7.8%	9.0%
<i>InvestorForce Public DB Net Rank</i>	4	1	1	13	8	1	1	9	20
Dedicated Funding for CMPTF	0.0%	2.3%	8.0%	7.8%	7.7%	7.7%	8.7%	8.8%	--
<i>Annual Return</i>	0.6%	1.8%	7.5%	7.5%	7.5%	7.5%	7.5%	7.6%	--
<b>Total Invested Portfolio</b>	<b>-4.4%</b>	<b>-8.3%</b>	<b>-4.6%</b>	<b>4.6%</b>	<b>5.9%</b>	<b>4.4%</b>	<b>4.9%</b>	<b>7.9%</b>	<b>8.0%</b>
<i>Total Invested Portfolio Benchmark</i>	-4.7%	-8.6%	-5.0%	5.1%	5.9%	4.5%	5.0%	7.7%	8.8%
<i>InvestorForce Public DB Net Rank</i>	46	60	55	57	27	25	25	17	51
<b>Fixed Income Composite</b>	<b>1.2%</b>	<b>0.4%</b>	<b>-0.9%</b>	<b>1.7%</b>	<b>2.6%</b>	<b>1.9%</b>	<b>2.8%</b>	<b>3.1%</b>	<b>4.8%</b>
<i>BBgBarc US Aggregate TR</i>	1.8%	1.6%	0.0%	1.8%	2.1%	1.7%	2.5%	2.1%	3.5%
<i>InvestorForce Public DB US Fix Inc Net Rank</i>	65	88	96	45	29	22	20	16	9
Federated Investors	1.0%	0.2%	-0.9%	1.7%	2.7%	2.0%	2.6%	2.7%	4.5%
<i>BBgBarc US Aggregate TR</i>	1.8%	1.6%	0.0%	1.8%	2.1%	1.7%	2.5%	2.1%	3.5%
<i>eV US Core Fixed Inc Net Rank</i>	93	95	88	63	11	29	47	29	31
BlackRock Total Return Fund	1.5%	1.0%	-0.8%	1.7%	2.3%	1.8%	3.1%	3.6%	5.6%
<i>BBgBarc US Aggregate TR</i>	1.8%	1.6%	0.0%	1.8%	2.1%	1.7%	2.5%	2.1%	3.5%
<i>eV US Core Fixed Inc Net Rank</i>	70	77	86	58	37	40	13	5	8
<b>U.S. Equity Composite</b>	<b>-9.8%</b>	<b>-15.1%</b>	<b>-7.1%</b>	<b>5.3%</b>	<b>9.0%</b>	<b>6.0%</b>	<b>7.3%</b>	<b>12.3%</b>	<b>11.9%</b>
<i>Dow Jones U.S. Total Stock Market</i>	-9.3%	-14.4%	-5.3%	7.1%	8.9%	6.7%	7.9%	12.4%	13.2%
<i>InvestorForce Public DB US Eq Net Rank</i>	72	74	72	69	15	57	40	18	74
SSgA S&P 500 Index Fund	-9.0%	-13.5%	-4.4%	8.0%	9.3%	7.3%	8.6%	--	--
<i>S&amp;P 500</i>	-9.0%	-13.5%	-4.4%	7.9%	9.3%	7.2%	8.5%	12.7%	13.1%
<i>eV US Large Cap Core Equity Net Rank</i>	54	47	31	26	19	17	13	--	--
Frontier Capital Management	-11.1%	-19.4%	-13.5%	1.3%	7.2%	3.6%	5.3%	11.3%	14.1%
<i>Russell 2500</i>	-11.0%	-18.5%	-10.0%	2.5%	7.3%	4.7%	5.1%	11.0%	13.2%
<i>eV US Small-Mid Cap Core Equity Net Rank</i>	61	67	77	69	45	70	43	34	29
Guyasuta Investment Advisors	-11.1%	-16.5%	-10.4%	0.3%	9.2%	4.1%	4.9%	11.8%	14.3%
<i>Russell 2000</i>	-11.9%	-20.2%	-11.0%	1.0%	7.4%	4.3%	4.4%	10.4%	12.0%
<i>eV US Small Cap Core Equity Net Rank</i>	32	15	47	59	22	62	43	27	20

## Investment Manager

## Annualized Performance (Net of Fees)

Market Value: \$728.3 Million and 100.0% of Fund

Ending December 31, 2018

	1 Mo	3 Mo	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
<b>Non-U.S. Equity Composite</b>	<b>-3.7%</b>	<b>-10.3%</b>	<b>-11.3%</b>	<b>6.8%</b>	<b>5.1%</b>	<b>3.4%</b>	<b>1.9%</b>	<b>6.0%</b>	<b>--</b>
MSCI ACWI ex USA	-4.5%	-11.5%	-14.2%	4.5%	4.5%	1.8%	0.7%	4.8%	6.6%
InvestorForce Public DB ex-US Eq Net Rank	5	8	4	6	18	9	12	32	--
MFS International Equity Fund	-4.1%	-11.2%	-10.7%	6.9%	4.7%	3.5%	1.9%	6.9%	--
MSCI EAFE	-4.9%	-12.5%	-13.8%	3.8%	2.9%	1.9%	0.5%	5.8%	6.3%
Foreign Large Blend MStar MF Rank	11	15	9	4	11	6	9	8	--
SSgA Active Emerging Markets Fund	-2.8%	-9.3%	-14.0%	7.9%	9.4%	3.3%	2.1%	3.2%	--
MSCI Emerging Markets	-2.7%	-7.5%	-14.6%	8.3%	9.2%	2.6%	1.6%	3.2%	8.0%
eV Emg Mkts Equity Net Rank	58	78	23	34	21	26	32	69	--
ABS Emerging Markets	-1.6%	-4.5%	-13.3%	4.8%	4.8%	2.7%	--	--	--
HFRI Emerging Markets (Total) Index	-1.7%	-4.3%	-11.1%	3.0%	4.3%	2.4%	1.4%	3.2%	5.3%
MSCI Emerging Markets	-2.7%	-7.5%	-14.6%	8.3%	9.2%	2.6%	1.6%	3.2%	8.0%
<b>Emerging Manager Composite</b>	<b>-9.6%</b>	<b>-15.8%</b>	<b>-9.8%</b>	<b>2.7%</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
Emerging Manager Benchmark	-9.4%	-15.7%	-8.4%	4.4%	--	--	--	--	--
Twin Capital	-9.2%	-13.7%	-6.3%	6.4%	--	--	--	--	--
S&P 500	-9.0%	-13.5%	-4.4%	7.9%	9.3%	7.2%	8.5%	12.7%	13.1%
Russell 1000	-9.1%	-13.8%	-4.8%	7.6%	9.1%	7.0%	8.2%	12.6%	13.3%
eV US Large Cap Core Equity Net Rank	63	51	56	60	--	--	--	--	--
CIM Investment Management	-13.6%	-22.9%	-14.0%	-2.2%	--	--	--	--	--
Russell 2000	-11.9%	-20.2%	-11.0%	1.0%	7.4%	4.3%	4.4%	10.4%	12.0%
eV US Small Cap Core Equity Net Rank	94	93	73	81	--	--	--	--	--
Fusion Investment Group	-5.5%	-9.7%	-9.1%	--	--	--	--	--	--
MSCI ACWI	-7.0%	-12.8%	-9.4%	6.0%	6.6%	4.3%	4.3%	8.4%	9.5%
eV Global All Cap Core Eq Net Rank	8	12	46	--	--	--	--	--	--

## Investment Manager

## Annualized Performance (Net of Fees)

Market Value: \$728.3 Million and 100.0% of Fund

Ending December 31, 2018

	1 Mo	3 Mo	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
<b>Hedge Fund Composite</b>	<b>-2.2%</b>	<b>-5.4%</b>	<b>-2.4%</b>	<b>3.1%</b>	<b>2.3%</b>	<b>1.7%</b>	<b>2.3%</b>	--	--
<i>HFRI Fund of Funds Composite Index</i>	-1.6%	-4.8%	-3.9%	1.8%	1.3%	0.9%	1.4%	2.9%	3.1%
<i>HFRX Equity Hedge Index</i>	-4.2%	-8.6%	-9.4%	-0.2%	-0.1%	-0.7%	-0.3%	2.0%	1.4%
<i>InvestorForce Public DB Hedge Funds Net Rank</i>	80	74	43	23	34	27	29	--	--
ABS Offshore SPC Global	-2.7%	-8.0%	-6.4%	2.5%	0.2%	1.2%	1.9%	--	--
<i>HFRX Equity Hedge Index</i>	-4.2%	-8.6%	-9.4%	-0.2%	-0.1%	-0.7%	-0.3%	2.0%	1.4%
Entrust Diversified Select Equity Fund	0.0%	-5.7%	-3.1%	1.4%	1.8%	0.0%	1.0%	--	--
<i>HFRX Equity Hedge Index</i>	-4.2%	-8.6%	-9.4%	-0.2%	-0.1%	-0.7%	-0.3%	2.0%	1.4%
Entrust Special Opportunities Fund III	0.0%	0.0%	2.7%	4.2%	8.0%	--	--	--	--
<i>HFRI Fund of Funds Composite Index</i>	-1.6%	-4.8%	-3.9%	1.8%	1.3%	0.9%	1.4%	2.9%	3.1%
Entrust Three Rivers Partners	--	--	--	--	--	--	--	--	--
Parametric Defensive Equity	-5.0%	-8.1%	-2.9%	--	--	--	--	--	--
<i>50% S&amp;P 500/50% 91 Day T-Bill</i>	-4.4%	-6.6%	-1.0%	4.8%	5.2%	4.1%	4.7%	6.6%	6.8%
<b>Real Estate Composite</b>	<b>1.3%</b>	<b>1.3%</b>	<b>7.0%</b>	<b>6.8%</b>	<b>7.3%</b>	<b>9.0%</b>	<b>9.4%</b>	--	--
<i>NFI</i>	0.5%	1.5%	7.4%	7.0%	7.3%	8.9%	9.4%	10.0%	6.0%
Rreef America II	0.9%	0.9%	7.4%	6.9%	7.3%	9.3%	9.9%	--	--
<i>NFI</i>	0.5%	1.5%	7.4%	7.0%	7.3%	8.9%	9.4%	10.0%	6.0%
Barings Core Property Fund	1.6%	1.6%	6.6%	6.6%	7.3%	8.7%	--	--	--
<i>NFI</i>	0.5%	1.5%	7.4%	7.0%	7.3%	8.9%	9.4%	10.0%	6.0%

# Investment Manager

# Calendar Performance (Net of Fees)

Market Value: \$728.3 Million and 100.0% of Fund

## Calendar Year

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<b>Total Fund Composite</b>	<b>0.3%</b>	<b>11.7%</b>	<b>8.1%</b>	<b>3.2%</b>	<b>9.2%</b>	<b>13.6%</b>	<b>12.3%</b>	<b>1.8%</b>	<b>5.6%</b>	<b>23.4%</b>	<b>-27.0%</b>
<i>Total Fund Composite Benchmark</i>	0.1%	12.2%	7.7%	3.5%	7.2%	14.1%	10.5%	1.3%	12.6%	23.0%	-26.1%
<i>InvestorForce Public DB Net Rank</i>	1	95	26	1	1	66	41	22	98	19	70
Dedicated Funding for CMPTF	8.0%	7.5%	7.6%	7.5%	13.2%	8.1%	9.8%	7.2%	--	--	--
<i>Annual Return</i>	7.5%	7.5%	7.5%	7.5%	7.5%	8.0%	8.0%	8.0%	--	--	--
<b>Total Invested Portfolio</b>	<b>-4.6%</b>	<b>14.8%</b>	<b>8.5%</b>	<b>0.0%</b>	<b>6.6%</b>	<b>17.6%</b>	<b>14.1%</b>	<b>-2.5%</b>	<b>5.6%</b>	<b>23.3%</b>	<b>-27.0%</b>
<i>Total Invested Portfolio Benchmark</i>	-5.0%	16.3%	7.7%	0.3%	6.9%	17.6%	12.2%	0.3%	12.4%	22.9%	-26.2%
<i>InvestorForce Public DB Net Rank</i>	55	49	15	33	22	22	7	92	98	20	70
<b>Fixed Income Composite</b>	<b>-0.9%</b>	<b>4.3%</b>	<b>4.5%</b>	<b>0.0%</b>	<b>6.1%</b>	<b>-0.4%</b>	<b>8.4%</b>	<b>5.4%</b>	<b>7.8%</b>	<b>13.8%</b>	<b>-9.3%</b>
<i>BBgBarc US Aggregate TR</i>	0.0%	3.5%	2.6%	0.6%	6.0%	-2.0%	4.2%	7.8%	6.5%	5.9%	5.2%
<i>InvestorForce Public DB US Fix Inc Net Rank</i>	96	39	47	56	15	32	35	87	41	42	91
Federated Investors	-0.9%	4.3%	4.8%	-0.2%	5.0%	-0.8%	7.1%	6.5%	8.2%	11.2%	-2.7%
<i>BBgBarc US Aggregate TR</i>	0.0%	3.5%	2.6%	0.6%	6.0%	-2.0%	4.2%	7.8%	6.5%	5.9%	5.2%
<i>eV US Core Fixed Inc Net Rank</i>	88	18	7	89	80	19	23	81	12	33	76
BlackRock Total Return Fund	-0.8%	4.3%	3.5%	0.4%	8.2%	-0.1%	10.3%	4.7%	10.1%	16.3%	-11.1%
<i>BBgBarc US Aggregate TR</i>	0.0%	3.5%	2.6%	0.6%	6.0%	-2.0%	4.2%	7.8%	6.5%	5.9%	5.2%
<i>eV US Core Fixed Inc Net Rank</i>	86	19	33	64	4	8	2	96	2	14	95
<b>U.S. Equity Composite</b>	<b>-7.1%</b>	<b>19.5%</b>	<b>16.6%</b>	<b>-2.3%</b>	<b>12.5%</b>	<b>34.2%</b>	<b>17.8%</b>	<b>0.6%</b>	<b>8.6%</b>	<b>25.8%</b>	<b>-36.1%</b>
<i>Dow Jones U.S. Total Stock Market</i>	-5.3%	21.2%	12.6%	0.4%	12.5%	33.5%	16.4%	1.1%	17.5%	28.6%	-37.2%
<i>InvestorForce Public DB US Eq Net Rank</i>	72	70	2	84	14	50	4	48	99	86	29
SSgA S&P 500 Index Fund	-4.4%	21.9%	12.0%	1.5%	13.8%	--	--	--	--	--	--
<i>S&amp;P 500</i>	-4.4%	21.8%	12.0%	1.4%	13.7%	32.4%	16.0%	2.1%	15.1%	26.5%	-37.0%
<i>eV US Large Cap Core Equity Net Rank</i>	31	46	20	36	33	--	--	--	--	--	--
Frontier Capital Management	-13.5%	18.6%	20.1%	-6.5%	12.1%	39.0%	18.0%	-6.5%	28.9%	46.5%	-39.5%
<i>Russell 2500</i>	-10.0%	16.8%	17.6%	-2.9%	7.1%	36.8%	17.9%	-2.5%	26.7%	34.4%	-36.8%
<i>eV US Small-Mid Cap Core Equity Net Rank</i>	77	35	5	88	1	26	29	86	25	5	75
Guyasuta Investment Advisors	-10.4%	12.2%	29.4%	-9.9%	8.4%	36.2%	25.7%	4.1%	19.3%	40.8%	-30.6%
<i>Russell 2000</i>	-11.0%	14.6%	21.3%	-4.4%	4.9%	38.8%	16.3%	-4.2%	26.9%	27.2%	-33.8%
<i>eV US Small Cap Core Equity Net Rank</i>	47	71	3	88	15	73	1	17	97	9	18

## Investment Manager

## Calendar Performance (Net of Fees)

Market Value: \$728.3 Million and 100.0% of Fund

	Calendar Year										
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<b>Non-U.S. Equity Composite</b>	<b>-11.3%</b>	<b>28.6%</b>	<b>1.9%</b>	<b>-1.7%</b>	<b>-4.1%</b>	<b>13.1%</b>	<b>21.5%</b>	--	--	--	--
MSCI ACWI ex USA	-14.2%	27.2%	4.5%	-5.7%	-3.9%	15.3%	16.8%	-13.7%	11.2%	41.4%	-45.5%
InvestorForce Public DB ex-US Eq Net Rank	4	47	83	21	59	82	7	--	--	--	--
MFS International Equity Fund	-10.7%	28.0%	0.3%	0.0%	-4.2%	18.6%	22.5%	--	--	--	--
MSCI EAFE	-13.8%	25.0%	1.0%	-0.8%	-4.9%	22.8%	17.3%	-12.1%	7.8%	31.8%	-43.4%
Foreign Large Blend MStar MF Rank	9	24	64	37	36	64	12	--	--	--	--
SSgA Active Emerging Markets Fund	-14.0%	35.3%	12.5%	-13.1%	-2.6%	-4.8%	18.1%	--	--	--	--
MSCI Emerging Markets	-14.6%	37.3%	11.2%	-14.9%	-2.2%	-2.6%	18.2%	-18.4%	18.9%	78.5%	-53.3%
eV Emg Mkts Equity Net Rank	23	63	26	53	67	87	66	--	--	--	--
ABS Emerging Markets	-13.3%	26.7%	4.9%	-3.4%	--	--	--	--	--	--	--
HFRI Emerging Markets (Total) Index	-11.1%	19.4%	7.0%	-3.3%	-2.6%	5.5%	10.4%	-14.0%	11.4%	40.3%	-37.3%
MSCI Emerging Markets	-14.6%	37.3%	11.2%	-14.9%	-2.2%	-2.6%	18.2%	-18.4%	18.9%	78.5%	-53.3%
<b>Emerging Manager Composite</b>	<b>-9.8%</b>	<b>16.9%</b>	--	--	--	--	--	--	--	--	--
Emerging Manager Benchmark	-8.4%	18.9%	--	--	--	--	--	--	--	--	--
Twin Capital	-6.3%	20.9%	--	--	--	--	--	--	--	--	--
S&P 500	-4.4%	21.8%	12.0%	1.4%	13.7%	32.4%	16.0%	2.1%	15.1%	26.5%	-37.0%
Russell 1000	-4.8%	21.7%	12.1%	0.9%	13.2%	33.1%	16.4%	1.5%	16.1%	28.4%	-37.6%
eV US Large Cap Core Equity Net Rank	56	56	--	--	--	--	--	--	--	--	--
CIM Investment Management	-14.0%	11.1%	--	--	--	--	--	--	--	--	--
Russell 2000	-11.0%	14.6%	21.3%	-4.4%	4.9%	38.8%	16.3%	-4.2%	26.9%	27.2%	-33.8%
eV US Small Cap Core Equity Net Rank	73	79	--	--	--	--	--	--	--	--	--
Fusion Investment Group	-9.1%	--	--	--	--	--	--	--	--	--	--
MSCI ACWI	-9.4%	24.0%	7.9%	-2.4%	4.2%	22.8%	16.1%	-7.3%	12.7%	34.6%	-42.2%
eV Global All Cap Core Eq Net Rank	46	--	--	--	--	--	--	--	--	--	--

## Investment Manager

## Calendar Performance (Net of Fees)

Market Value: \$728.3 Million and 100.0% of Fund

	Calendar Year										
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
<b>Hedge Fund Composite</b>	<b>-2.4%</b>	<b>9.0%</b>	<b>0.7%</b>	<b>0.0%</b>	<b>4.9%</b>	--	--	--	--	--	--
<i>HFRI Fund of Funds Composite Index</i>	-3.9%	7.8%	0.5%	-0.3%	3.4%	9.0%	4.8%	-5.7%	5.7%	11.5%	-21.4%
<i>HFRX Equity Hedge Index</i>	-9.4%	10.0%	0.1%	-2.3%	1.4%	11.1%	4.8%	-19.1%	8.9%	13.1%	-25.5%
<i>InvestorForce Public DB Hedge Funds Net Rank</i>	43	23	74	45	35	--	--	--	--	--	--
<b>ABS Offshore SPC Global</b>	<b>-6.4%</b>	<b>12.3%</b>	<b>-4.3%</b>	<b>4.0%</b>	<b>4.8%</b>	--	--	--	--	--	--
<i>HFRX Equity Hedge Index</i>	-9.4%	10.0%	0.1%	-2.3%	1.4%	11.1%	4.8%	-19.1%	8.9%	13.1%	-25.5%
<b>Entrust Diversified Select Equity Fund</b>	<b>-3.1%</b>	<b>6.0%</b>	<b>2.5%</b>	<b>-4.9%</b>	<b>4.9%</b>	--	--	--	--	--	--
<i>HFRX Equity Hedge Index</i>	-9.4%	10.0%	0.1%	-2.3%	1.4%	11.1%	4.8%	-19.1%	8.9%	13.1%	-25.5%
<b>Entrust Special Opportunities Fund III</b>	<b>2.7%</b>	<b>5.7%</b>	<b>16.1%</b>	--	--	--	--	--	--	--	--
<i>HFRI Fund of Funds Composite Index</i>	-3.9%	7.8%	0.5%	-0.3%	3.4%	9.0%	4.8%	-5.7%	5.7%	11.5%	-21.4%
<i>Entrust Three Rivers Partners</i>	--	--	--	--	--	--	--	--	--	--	--
<b>Parametric Defensive Equity</b>	<b>-2.9%</b>	--	--	--	--	--	--	--	--	--	--
<i>50% S&amp;P 500/50% 91 Day T-Bill</i>	-1.0%	10.9%	6.1%	0.9%	6.7%	15.3%	7.9%	1.4%	7.8%	13.3%	-19.4%
<b>Real Estate Composite</b>	<b>7.0%</b>	<b>6.5%</b>	<b>8.4%</b>	<b>14.4%</b>	<b>11.0%</b>	--	--	--	--	--	--
<i>NFI</i>	7.4%	6.7%	7.8%	13.9%	11.5%	12.9%	9.8%	15.0%	15.3%	-30.4%	-10.7%
<b>Rreef America II</b>	<b>7.4%</b>	<b>6.4%</b>	<b>8.1%</b>	<b>15.6%</b>	<b>12.0%</b>	--	--	--	--	--	--
<i>NFI</i>	7.4%	6.7%	7.8%	13.9%	11.5%	12.9%	9.8%	15.0%	15.3%	-30.4%	-10.7%
<b>Barings Core Property Fund</b>	<b>6.6%</b>	<b>6.6%</b>	<b>8.6%</b>	<b>13.0%</b>	--	--	--	--	--	--	--
<i>NFI</i>	7.4%	6.7%	7.8%	13.9%	11.5%	12.9%	9.8%	15.0%	15.3%	-30.4%	-10.7%

## Private Equity Composite

### Annualized Performance

Asset Class	Fund Company	Vintage Yr.	Perf. as of:	Net IRR
Venture	Birchmere Ventures III	2005	9/30/2018	-2.4%
Venture	Draper Triangle Venture II	2004	9/30/2018	4.3%
Venture	Draper Triangle Venture III	2013	9/30/2018	-7.3%
Venture	Novitas Capital Partners III	2003	9/30/2018	-35.6%
Global Diversified FoFs	Hirtle Callaghan PEP III	2003	9/30/2018	16.9%
Global Diversified FoFs	Hirtle Callaghan PEP IV	2004	9/30/2018	9.1%
Global Diversified FoFs	Hirtle Callaghan PEP V	2006	9/30/2018	1.9%
Mezzanine	Crescent Mezz Partners VI	2013	9/30/2018	8.6%
Mezzanine	Crescent Mezz Partners VII	2016	9/30/2018	6.4%
<b>Total Private Equity</b>				

### Since Inception Cash Flows

Asset Class	Fund Company	Commitment	Capital Calls	Distributions	Remaining Callable Amt.	Ending Value	<sup>1</sup> Cash Multiple
Venture	Birchmere Ventures III	\$1,000,000	\$1,000,000	\$893,272	\$0	\$69,610	1.0
Venture	Draper Triangle Venture II	\$1,000,000	\$1,000,000	\$1,272,598	\$0	\$191,312	1.5
Venture	Draper Triangle Venture III	\$2,000,000	\$1,652,414	\$82,133	\$0	\$1,281,137	0.8
Venture	Novitas Capital Partners III	\$1,000,000	\$989,904	\$425,899	\$0	\$0	0.4
Global Diversified FoFs	Hirtle Callaghan PEP III	\$8,000,000	\$7,600,835	\$12,277,293	\$0	\$0	1.6
Global Diversified FoFs	Hirtle Callaghan PEP IV	\$8,000,000	\$7,418,650	\$10,802,530	\$0	\$0	1.5
Global Diversified FoFs	Hirtle Callaghan PEP V	\$3,000,000	\$2,481,360	\$2,117,184	\$518,640	\$699,854	1.1
Mezzanine	Crescent Mezz Partners VI	\$10,000,000	\$8,952,898	\$7,216,097	\$1,047,102	\$4,223,191	1.3
Mezzanine	Crescent Mezz Partners VII	\$10,000,000	\$3,255,697	\$810,043	\$6,744,303	\$2,710,814	1.1
<b>Total Private Equity</b>		<b>\$44,000,000</b>	<b>\$34,351,758</b>	<b>\$35,897,049</b>	<b>\$8,310,045</b>	<b>\$9,175,918</b>	<b>1.3</b>

<sup>1</sup> Calculated as the sum of the distributions and ending value divided by the amount of all capital calls.

# Total Fund Composite

# Fee Schedule

Market Value: \$728.3 Million and 100.0% of Fund

Asset Class	Investment Manager	Fee Schedule	Expense Ratio & Estimated Annual Fee <sup>1</sup>	Industry Average <sup>2</sup>
Core Fixed Income	Federated Investors	0.25% on the Balance	0.25% \$135,937	0.26%
Core Fixed Income	BlackRock Total Return Fund	0.40% on the Balance	0.40% \$79,432	0.50%
Large-Cap Core	SSgA S&P 500 Index Fund	0.04% on the Balance	0.04% \$40,619	0.05%
Large-Cap Core	Twin Capital	0.35% on the first \$50 million 0.20% on the Balance	0.35% \$8,352	0.60%
Smid-Cap Core	Frontier Capital Management	0.75% on the Balance	0.75% \$206,847	0.84%
Small-Cap Core	Guyasuta Investment Advisors	0.45% on the Balance	0.45% \$115,963	0.88%
Small-Cap Core	CIM Investment Management	0.75% on the first \$1 million 0.65% on the next \$3 million 0.60% on the Balance	0.70% \$14,886	0.88%
Non-U.S. Large-Cap Core	MFS International Equity Fund	0.75% on the Balance	0.75% \$447,907	0.97%
Global Core Equity	Fusion Investment Group	0.70% on the Balance	0.70% \$14,767	0.40%
Emerging Markets	SSgA Active Emerging Markets Fund	0.75% on the Balance	0.75% \$60,739	0.95%
Emerging Markets	ABS Emerging Markets	0.80% on the Balance	0.80% \$71,156	1.00%
Hedged Equity Hedge FoF	ABS Offshore SPC Global	1.00% on the Balance	1.00% \$130,070	1.00%
Hedged Equity Hedge FoF	Entrust Diversified Select Equity Fund	1.30% on the Balance	1.30% \$16,377	1.00%
Multi-Strat. Hedge Fund	Entrust Special Opportunities Fund III	1.25% on the Balance Plus 10% incentive fee after 7.5% preferred return	1.25% \$129,624	1.00%
Defensive Equity	Parametric Defensive Equity	0.325% on the first \$50 million 0.30% on the next \$50 million 0.275% on the Balance	0.32% \$34,821	1.00%

## Total Fund Composite

## Fee Schedule

Market Value: \$728.3 Million and 100.0% of Fund

Asset Class	Investment Manager	Fee Schedule	Expense Ratio & Estimated Annual Fee <sup>1</sup>	Industry Average <sup>2</sup>
Core Real Estate	Rreef America II	0.95% on the Balance	0.95% \$215,828	1.01%
Core Real Estate	Barings Core Property Fund	1.10% on the first \$15 million 1.00% on the next \$10 million 0.80% on the Balance	1.07% \$233,847	1.01%
Venture Private Equity	Birchmere Ventures III, LP	2.50% on total commitments plus 20% carried interest after 8% preferred return	--- \$25,000	---
Venture Private Equity	Draper Triangle Ventures II, LP	1.00% on total commitments plus 20% carried interest	--- \$10,000	---
Global Divers. Private Equity FoF	Hirtle Callaghan Private Equity Fund V, LP	0.00% on the Balance	--- \$0	1.25%
Mezz. Private Equity	Crescent Mezzanine Partners VIB, LP	1.50% on total commitments plus 20% carried interest after 8% preferred return	3.55% \$150,000	4.14%
Mezzanine Debt	Crescent Mezzanine Partners VIIB, L.P.	0.75% on total commitments 0.75% on invested capital plus 20% carried interest	3.52% \$95,331	4.10%
Fixed Income Annuity	Dedicated Funding for CMPTF	0.00% on the Balance	0.00% \$0	0.00%
<b>Total Investment Management Fees</b>			<b>0.31%</b> <b>\$2,237,504</b>	<b>0.36%</b>
Custodian	PNC Bank	0.03% on the all assets, excluding Dedicated Funding for CMPTF	0.02% \$143,529	
<b>Total Fund</b>			<b>0.33%</b> <b>\$2,381,033</b>	

<sup>1</sup> Expense Ratio & Estimated Annual Fee are Based on Market Value at Month End.

<sup>2</sup> Source: 2016 Marquette Associates Investment Management Fee Study.