

## Hedge Fund Statistical Analysis

## Prepared For:

# The City of Providence Employee Retirement System

Submitted by

## Wainwright Investment Counsel, LLC

One Boston Place Boston, MA 02108

On

May 23, 2013

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## Quellos-QBLK Strategic Class C Fund

HFRI Fund of Funds Composite Index S&P 500 TR Benchmark 1:

enchmark	c 2:	S&P 500 T	R											
						Histor	ical Perfor	mance						HFRI Fu
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	of Fund
2013	1.78%	0.45%	0.77%	0.58%									3.62%	4.10%
2012	1.57%	1.21%	0.77%	0.33%	-0.91%	0.22%	0.54%	1.05%	0.83%	0.43%	0.38%	1.08%	7.74%	4.79%
2011	1.03%	1.00%	0.67%	0.56%	0.42%	-0.51%	0.22%	-1.17%	-0.97%	0.78%	0.13%	-0.28%	1.87%	-5.72%
2010	1.06%	0.31%	1.54%	0.96%	-1.18%	-0.55%	0.85%	0.53%	2.20%	1.43%	0.70%	1.24%	9.43%	5.70%
2009	0.91%	0.55%	0.47%	2.29%	3.67%	2.79%	2.50%	2.92%	2.12%	0.90%	0.53%	1.44%	23.17%	11.47%
2008	-2.11%	1.28%	-2.28%	1.10%	1.83%	-0.89%	-2.42%	-1.26%	-7.92%	-8.76%	-4.26%	-2.43%	-25.25%	-21.379
2007	1.70%	1.20%	1.40%	1.50%	2.00%	0.60%	0.00%	-1.40%	1.40%	1.80%	-0.80%	0.30%	10.07%	10.25%
2006	2.00%	0.80%	1.30%	1.00%	-0.40%	0.20%	0.40%	1.00%	1.20%	1.40%	1.40%	1.87%	12.84%	10.39%
2005	0.40%	0.60%	-0.10%	-1.40%	0.30%	0.90%	1.30%	0.60%	0.80%	-0.60%	0.40%	1.73%	5.00%	7.49%
2004	1.30%	0.60%	0.50%	0.30%	-0.20%	0.10%	-0.20%	0.10%	0.20%	0.40%	1.30%	1.09%	5.61%	6.86%
2003	1.60%	0.40%	0.50%	1.10%	1.10%	0.70%	0.10%	0.40%	1.00%	0.80%	0.70%	0.64%	9.41%	11.61%
2002	0.80%	0.00%	0.50%	0.30%	0.50%	-0.70%	-0.40%	0.60%	0.10%	0.50%	0.90%	0.81%	3.97%	1.02%
2001				0.40%	0.60%	-0.20%	0.90%	0.80%	0.00%	0.70%	0.20%	0.16%	3.61%	2.05%
Ar	nnualized	Risk / Ret	urn Analy	sis	Мо	nthly Dist	ribution C	haracteris	tics					
		Fund	BM1	BM2			Fund	BM1	BM2		Distributi	on of Mon	tniy Retur	ns
mpound	ROR	5.27%	3.60%	4.71%	Skewness		-3.20	-1.50	-0.64					
ndard D	Deviation	5.12%	5.15%	15.54%	Kurtosis		16.86	4.54	1.18	80				
arpe Rat	tio (1.0%)	0.84	0.52	0.31						70 <del>-</del> 60 <del>-</del>				
o. Ratio		-	0.65	0.04		Drav	wdown An	alysis		€ 50 -				
ha		-	2.1%	4.3%	Depth	Length	Recover	Peak	Valley	- 05 Periods			L .	
a		-	0.87	0.19	-25.6%	14	24	Oct-07	Dec-08	Monthly 30			H	
relation		-	0.88	0.57	-2.4%	4	5	May-11	Sep-11	≥ 20 -				
2		-	0.77	0.33	-1.5%	2	3	Feb-05	Apr-05	0 —				
Capture			89%	9%	-1.4%	1	2	Jul-07	Aug-07	-10%	to -8	5 to -4 3 to -2 -1 to 0	1 to 2 3 to 4	7 to 8 9 to 10
wn Capt			64%	22%	-1.1%	2	3	May-02	Jul-02	, ,	-9 t	-3 1	← ω π	7 7 9 tc
acking Ei tive Pren		-	2.56% 1.67%	13.29% 0.56%	-0.9% -0.6%	1	3 2	Apr-12 Sep-05	May-12 Oct-05			Return Rang	e (%)	
ive Fiel	Illulii	Mon	thly/Cum			ı	2	3ep-03	001-00	Dick /	Return Sca	attorplot		
		IVIOI	ithly/ Culli	ulative Re	tuitis					KISK/I	Return Sca	atterpiot		
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			• •	• •	• • •	•		4	% 07		d Standard		14%	10%
	Monthly Ret	urn		Que	llos-QBLK Stra	ntegic Class (	C Fund			Allitualize	u Stariuaru	Deviation		
	-	of Funds Com	posite Index	——S&P	500 TR			Quell	los-QBLK Strate	gic Class C Fun	d AHFRI Fund	of Funds Comp	oosite Index 🔷 S	8&P 500 TR
			Fund	Terms							Disclosur			
bscriptio	ns:			High Wate	er Mark:			DISCLOSU	RE – The d	ata above w	vas gathere	d from sour	ces deeme	d to be
demptio	ns:			Min. Inves	stment:							to the data's	,	
quired N				Lockup:							-	nt fees. Th		
nageme								considered	l estimated	and unaudi	ted. Past p	erformance	is not a gu	arantee of
entive F								future inve	estment resi	ults.				
rdle Rat														
ale Rati	·.													

#### Renaissance Technologies LLC

Benchmark 1: HFRI Equity Hedge (Total) Index

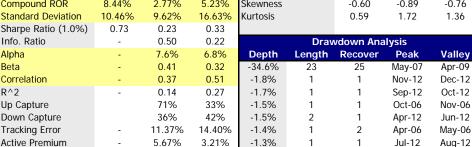
Benchmark 2: S&P 500 TR

#### **Investment Strategy Description**

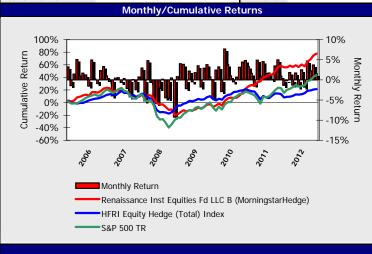
Renaissance Institutional Equities Funds ("RIEF") invest primarily in U.S. and non-U.S. equity securities publicly traded on U.S. exchanges, based on a quantitative, long-biased investment strategy. RIEF has been designed to achieve attractive risk-adjusted returns that, on a gross basis, exceed the average yearly returns of the S&P 500 Index with dividends reinvested ("Index") in the long term. RIEF seeks a higher Sharpe ratio than the Index, a beta to the Index of 0.4 or lower, and most returns generated as

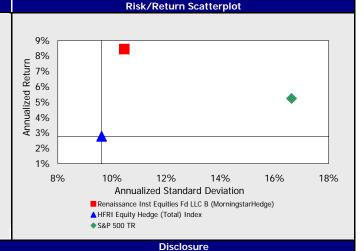
alpha relative to the Index. RIEF is not a tracking fund and seeks to provide diversifi cation from the Index. The RIEF investment process is automated and employs proprietary statistical models of price prediction, risk, and trading cost to build a portfolio of thousands of long/short positions. RIEF is also designed to be net \$100 long for each \$100 of equity, with leverage constraints that generally average 2.5 to 1.0 (1.75 long/75 short)

	that generally					4041140 01 101	igronoit poor	uono. rtier it	aloo doolgi	100 10 00 1101	Ψ100 long ii	οι ομοίι φτος	or oquity, w	iii iovorago	
						Histor	ical Perfor	mance						HFRI	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Equity	
2013	4.67%	2.28%	3.71%	1.51%									12.70%	5.56%	
2012	0.04%	3.45%	4.95%	0.97%	-1.33%	-0.20%	1.81%	-1.26%	1.69%	-1.70%	2.50%	-1.78%	9.25%	7.41%	
2011	0.68%	3.15%	4.39%	4.80%	3.29%	1.62%	-1.24%	4.87%	0.87%	4.53%	1.59%	1.69%	34.53%	-8.38%	
2010	-1.73%	2.89%	3.75%	0.74%	-4.42%	2.42%	3.20%	-2.88%	7.65%	3.77%	1.01%	-0.49%	16.42%	10.45%	
2009	-4.43%	-4.61%	0.49%	-9.25%	0.80%	4.01%	3.85%	-2.17%	2.20%	-0.49%	1.78%	3.48%	-5.15%	24.57%	
2008	-4.19%	0.04%	-2.47%	0.72%	2.95%	-5.24%	4.76%	-0.62%	-5.38%	-5.85%	-2.12%	0.16%	-16.48%	-26.65%	
2007	0.22%	-0.92%	2.29%	3.30%	0.98%	-0.41%	-3.96%	0.43%	0.56%	-0.62%	0.31%	-2.16%	-0.18%	10.48%	
2006				3.21%	-1.42%	1.42%	5.04%	0.98%	1.68%	1.24%	-1.53%	4.94%	16.43%	4.77%	
A	nnualized	Risk / Ret	urn Analys	sis	Мо	nthly Dist	ribution C	haracteris	tics	Distribution of Monthly Returns					
		Fund	BM1	BM2			Fund	BM1	BM2	Distribution of Monthly Returns					
Compound		8.44%	2.77%	5.23%	Skewness		-0.60	-0.89	-0.76						
Standard D		10.46%	9.62%	16.63%	Kurtosis		0.59	1.72	1.36	18					
Sharpe Ra	tio (1.0%)	0.73	0.23	0.33						14 -					









## DISCLOSURE – The data above was gathered from sources deemed to be

reliable, however, no assurance is made as to the data's accuracy. The returns are presented net of investment management fees. The returns should be considered estimated and unaudited. Past performance is not a guarantee of future investment results.

## Graham Capital Management - Enhanced Volatility

Benchmark 1: HFRI Macro (Total) Index

Benchmark 2: S&P 500 TR

#### **Investment Strategy Description**

The Discretionary-12V Portfolio combines GCM's most successful discretionary trading strategies into a single fund. Discretionary-12V's component strategies utilize a variety of discretionary trading methodologies and disciplines that participate primarily in the fixed income, commodity, currency and equity index markets. The trading strategies gain exposure to their markets through futures, over-the-counter and listed options, swaps contracts and cash instruments. Discretionary-12V provides clients with an investment that is diversified among highly liquid global markets and has low correlation to traditional and other alternative investments

Year							ical Perfor						.,	HFRI
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Macro
2013	2.98%	-0.02%	0.26%	0.29%									3.53%	2.14%
2012						-1.44%	1.60%	0.26%	0.78%	-0.66%	0.99%	3.28%	4.84%	-0.60%
							<u>                                     </u>							
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-														
Ar	nnualized	Risk / Ret	urn Analy	sis	Мо	nthly Distr	ribution C	haracteris	tics					
		Fund	BM1	BM2			Fund	BM1	BM2		Distribution	on of Mon	thly Returr	IS
ompound	ROR	9.35%	1.67%	26.86%	Skewness		0.57	-0.15	-0.28					
tandard D		4.93%	4.12%	6.65%	Kurtosis		0.02	-0.62	0.66	6				
narpe Rat	io (1.0%)	1.64	0.18	3.49						5				
nfo. Ratio		-	2.05	-1.95		Draw	vdown Ana	alysis		§ 4				
lpha		-	7.7%	6.8%	Depth	Length	Recover	Peak	Valley	₹ 3 ——				
eta		-	0.95	0.10	-1.4%	1	1	May-12	Jun-12	Monthly Periods				
orrelation		-	0.79	0.14	-0.7%	1	1	Sep-12	Oct-12	§ 1 -				
^2		-	0.63	0.02	0.0%	1	1	Jan-13	Feb-13	0				
p Capture			144%	35%						-10%	6 0 t	to -2	1 to 2 3 to 4 5 to 6	7 to 8
own Capt			3%	36%						<u>-</u>	-9 to -7 to to -5 to		3 t 5 t 5	7 to 8
racking Er		-	3.74%	8.96%								Return Range	e (%)	
ctive Pren	nium	-	7.67%	-17.51%				1						
		Mon	thly/Cum	ulative Re	turns					Risk/F	Return Sca	itterplot		
30%	% T					4	%	30%						
307					_	- 3	1%							•
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25% Committee Return 15% 15% 5% 0%	% + % + % +					- 2 - 1 - 0	1%	Return 20%						
Cumulative Return 10% 159 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5% 5%	% + % + % +			Ŷ		- 2 - 1 - 0	_	Annualized Return 10%			•			
Cumulative Return 15% 5% 0% 0% 0%	% + % + % +			ct. <sub>Op</sub> .		- 2 - 1 - 0	1%	Annualized Return 10% 5% 0%	3%	4%	5%		6%	7%
25% Committee Return 15% 15% 5% 0%	% + % + % +			ctoc		- 2 - 1 - 0	1%	Annualized Return 10% 5% 0%	3%	4% Annualiz	5%		6%	7%
259 209 159 109 09 -59	% + % + % +	rn			etionary-12V	- 2 - 1 0	1% 2%	Annualized Return 10% 5% 0% 3		Annualiz	ed Standard	d Deviation		
259 Cnmulative Return 59 09 -59	%			— Discr	etionary-12V 500 TR	- 2 - 1 0	1% 2%	Annualized Return 10% 5% 0% 3		Annualiz	ed Standard	d Deviation	6% I) Index ◆S	
259 209 159 109 09 -59	Monthly Retu	Total) Index		— Discr	500 TR	- 2 - 1 0	1% 2%	Annualized Return 10% 5% 0% 3		Annualiz	ed Standard ledge) 🛕 HF	d Deviation RI Macro (Tota		
259 209 159 109 109 09 -59	Monthly Retu	Total) Index	act Inform	— Discr	500 TR	- 2 - 1 0	1% 2%	20% 20% 15% 15% 10% 5% 0% 3	scretionary-12\	Annualiz	ed Standard ledge) ▲HF <b>Disclosur</b>	d Deviation RI Macro (Tota e	l) Index ◆S&	₽ 500 TR
259 209 159 109 09 -59	Monthly Retu	Total) Index	act Inform	— Discr	500 TR	- 2 - 1 0	1% 2%	DISCLOSU	scretionary-12\ RE – The da	Annualiza (MorningstarH ata above w	ed Standard ledge) AHF  Disclosur vas gathere	d Deviation RI Macro (Tota  e d from sour	I) Index ◆S&	to be
259 209 159 109 09 -59	Monthly Retu	Total) Index	act Inform	— Discr	500 TR	- 2 - 1 0	1% 2%	DISCLOSU reliable, ho	scretionary-12\ RE – The da owever, no	Annualization An	ed Standard ledge) AHF  Disclosur vas gatheres s made as t	d Deviation RI Macro (Tota  e d from sour o the data's	I) Index ◆S&	<sub>rP 500</sub> TR to be The retur
259 Cnmnlative Return 109 09 -59	Monthly Retu	Total) Index	act Inform	— Discr	500 TR	- 2 - 1 0	1% 2%	DISCLOSU reliable, ho are presen	RE – The da owever, no a ted net of i	Annualization (MorningstarHorningstarHorningstarHorningstarHorningstar Horningstar Horning	ed Standard ledge) AHF  Disclosur vas gatheres s made as t managemer	d Deviation RI Macro (Tota  e d from sour to the data's t fees. The	I) Index ◆S&	to be The returbuld be

### Graham Capital Management - Enhanced Volatility

Benchmark 1: HFRI Macro (Total) Index

Benchmark 2: S&P 500 TR

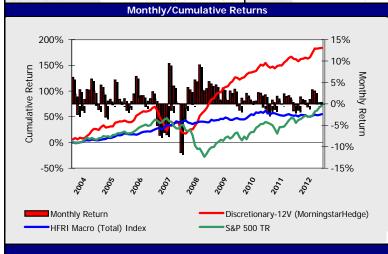
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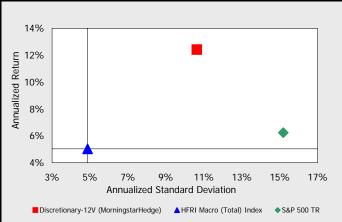
The Discretionary-12V Portfolio combines GCM's most successful discretionary trading strategies into a single fund. Discretionary-12V's component strategies utilize a variety of discretionary trading methodologies and disciplines that participate primarily in the fixed income, commodity, currency and equity index markets. The trading strategies gain exposure to their markets through futures, over-the-counter and listed options, swaps contracts and cash instruments. Discretionary-12V provides clients with an investment that is diversified among highly liquid global markets and has low correlation to traditional and other alternative investments

	Historical Performance												S&P 500	
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	TR
2013	2.98%	-0.02%	0.26%	0.29%									3.53%	12.74%
2012	1.53%	1.89%	0.92%	-1.61%	-0.30%	-1.44%	1.60%	0.26%	0.78%	-0.66%	0.99%	3.28%	7.37%	16.00%
2011	2.60%	2.47%	-0.76%	2.10%	-2.31%	-1.37%	0.84%	-1.28%	1.75%	0.61%	-0.09%	2.30%	6.91%	2.11%
2010	2.98%	1.76%	3.39%	-0.46%	-1.46%	1.32%	0.62%	2.43%	1.48%	0.18%	0.57%	0.64%	14.19%	15.06%
2009	3.25%	3.02%	3.56%	5.17%	4.64%	0.82%	4.41%	1.50%	0.60%	3.69%	1.22%	0.80%	37.85%	26.46%
2008	4.13%	0.43%	0.02%	-11.34%	-3.50%	-1.07%	3.80%	3.24%	-0.10%	5.57%	5.13%	9.06%	14.72%	-37.00%
2007	-0.58%	0.61%	1.18%	2.84%	1.13%	-5.04%	-7.33%	-4.89%	-6.66%	-7.17%	9.41%	-1.50%	-17.74%	5.49%
2006	0.85%	1.05%	-0.10%	1.21%	-1.48%	-0.82%	0.52%	2.33%	6.38%	1.63%	1.92%	1.90%	16.28%	15.79%
2005	3.21%	5.78%	2.98%	-0.35%	-1.30%	4.38%	2.61%	-3.07%	0.63%	1.05%	-0.19%	5.56%	22.99%	4.91%
2004			·			6.17%	2.24%	-2.45%	3.30%	-1.50%	1.02%	3.33%	12.47%	9.27%

Annualized	Monthly Distribution Characteristics							
	Fund	BM1	BM2			Fund	BM1	BM2
Compound ROR	12.42%	5.04%	6.23%	Skewness		-0.72	0.28	-0.82
Standard Deviation	10.63%	4.88%	15.19%	Kurtosis		2.96	-0.32	2.00
Sharpe Ratio (1.0%)	1.07	0.83	0.41					
Info. Ratio	-	0.62	0.33		Drav	vdown Ana	llysis	
Alpha	-	12.9%	13.2%	Depth	Length	Recover	Peak	Valley
Beta	-	0.03	-0.02	-30.8%	13	10	May-07	Jun-08
Correlation	-	0.02	-0.03	-4.1%	4	4	Apr-11	Aug-11
R^2	-	0.00	0.00	-3.3%	3	6	Mar-12	Jun-12
Up Capture		65%	17%	-3.1%	1	4	Jul-05	Aug-05
Down Capture		-158%	-40%	-2.5%	1	1	Jul-04	Aug-04
Tracking Error	-	11.82%	18.82%	-2.3%	2	2	Apr-06	Jun-06
Active Premium	-	7.38%	6.18%	-1.9%	2	3	Mar-10	May-10







#### Disclosure

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