

The Ithaka Group
PORTFOLIO APPRAISAL
North Carolina Retirement System
North Carolina Department of State Treasurer
September 30, 2016

Quantity	Security	Unit Cost	Total Cost	Price	Market Value	Pct. Assets	Cur. Yield
CASH AND EQUIVALENTS							
	BNY MELLON MMF		110,563.13		110,563.13	0.6	0.0
	Dividend Accruals		741.12		741.12	0.0	0.0
			111,304.25		111,304.25	0.6	0.0
COMMON STOCK							
6,126.0000	Adobe Systems Inc.	87.71	537,302.70	108.54	664,916.04	3.3	0.0
3,582.0000	Alexion Pharmaceuticals	129.33	463,253.83	122.54	438,938.28	2.2	0.0
1,226.0000	Alphabet Inc. Class C	634.09	777,393.91	777.29	952,957.54	4.8	0.0
1,372.0000	Amazon.com Inc.	304.75	418,112.61	837.31	1,148,789.32	5.8	0.0
2,698.0000	BioMarin Pharmaceutical	112.76	304,234.72	92.52	249,618.96	1.2	0.0
705.0000	Biogen Inc.	372.59	262,676.21	313.03	220,686.15	1.1	0.0
6,677.0000	Celgene Corp.	78.01	520,847.32	104.53	697,946.81	3.5	0.0
3,342.0000	DexCom, Inc.	90.91	303,824.90	87.66	292,959.72	1.5	0.0
1,780.0000	Domino's Pizza, Inc.	109.44	194,799.64	151.85	270,293.00	1.4	1.0
5,448.0000	Edwards Lifesciences Corp.	105.75	576,126.92	120.56	656,810.88	3.3	0.0
11,978.0000	Facebook, Inc. cl A	42.23	505,846.81	128.27	1,536,418.06	7.7	0.0
2,823.0000	Home Depot Inc.	136.23	384,569.25	128.68	363,263.64	1.8	2.1
3,081.0000	Illumina Inc	189.39	583,499.36	181.66	559,694.46	2.8	0.0
3,392.0000	Incyte Corp	87.78	297,744.08	94.29	319,831.68	1.6	0.0
8,450.0000	Mastercard Inc.	54.55	460,972.85	101.77	859,956.50	4.3	0.7
3,550.0000	Middleby Corporation	84.56	300,184.17	123.62	438,851.00	2.2	0.0
4,632.0000	Nike Inc cl B	64.53	298,922.11	52.65	243,874.80	1.2	1.2
670.0000	O'Reilly Automotive, Inc.	255.47	171,167.24	280.11	187,673.70	0.9	0.0
3,790.0000	Palo Alto Networks, Inc.	154.55	585,740.14	159.33	603,860.70	3.0	0.0
10,542.0000	PayPal Holdings, Inc.	38.67	407,668.63	40.97	431,905.74	2.2	0.0
1,721.0000	Regeneron Pharmaceuticals	287.18	494,240.48	402.02	691,876.42	3.5	0.0
13,833.0000	Salesforce.com Inc	47.74	660,439.62	71.33	986,707.89	4.9	0.0
6,155.0000	Splunk Inc.	43.57	268,164.60	58.68	361,175.40	1.8	0.0
13,593.0000	Starbucks Corporation	33.75	458,749.95	54.14	735,925.02	3.7	1.5
6,256.0000	TJX Companies Inc.	68.08	425,929.12	74.78	467,823.68	2.3	1.4
580.0000	The Priceline Group Inc.	707.95	410,611.00	1,471.49	853,464.20	4.3	0.0
2,145.0000	Transdigm Group, Inc.	123.35	264,580.94	289.12	620,162.40	3.1	0.0
4,387.0000	Ulta Salon, Cosmetics	161.68	709,280.51	237.98	1,044,018.26	5.2	0.0
1,946.0000	Ultimate Software Group Inc.	184.86	359,744.09	204.39	397,742.94	2.0	0.0
8,529.0000	Under Armour, Inc. Cl A	14.90	127,109.77	38.68	329,901.72	1.7	0.0
8,589.0000	Under Armour, Inc. Cl C	14.42	123,839.81	33.86	290,823.54	1.5	0.0
13,678.0000	VISA Inc.	47.81	653,877.71	82.70	1,131,170.60	5.7	0.7
4,799.0000	Walt Disney Company	91.54	439,316.01	92.86	445,635.14	2.2	1.5
4,040.0000	Workday, Inc.	76.31	308,307.33	91.69	370,427.60	1.9	0.0
			14,059,078.34		19,866,101.79	99.4	0.3
TOTAL PORTFOLIO			14,170,382.59		19,977,406.04	100.0	0.3

The Ithaka Group
PERFORMANCE HISTORY
NET OF FEES
North Carolina Retirement System
From 05-02-13 to 09-30-16

Time Period			Percent Return				Cumulative TWR			
			Portfolio	Per Period		S&P 500	Basis = 100			
				Russell 1000 Growth	Russell 3000 Growth					
05-02-2013	to	05-02-2013					100.00	100.00	100.00	100.00
05-02-2013	to	05-31-2013	1.82	1.69	2.00	2.08	101.82	101.69	102.00	102.08
05-31-2013	to	06-30-2013	-2.21	-1.88	-1.78	-1.50	99.57	99.78	100.18	100.54
06-30-2013	to	07-31-2013	7.69	5.30	5.48	4.95	107.22	105.07	105.68	105.52
07-31-2013	to	08-31-2013	1.83	-1.71	-1.73	-3.13	109.19	103.27	103.84	102.21
08-31-2013	to	09-30-2013	8.56	4.46	4.66	2.97	118.53	107.87	108.68	105.26
09-30-2013	to	10-31-2013	2.80	4.42	4.21	4.46	121.85	112.64	113.26	109.95
10-31-2013	to	11-30-2013	3.28	2.82	2.92	2.80	125.84	115.82	116.57	113.03
11-30-2013	to	12-31-2013	2.75	2.86	2.79	2.36	129.30	119.13	119.82	115.70
12-31-2013	to	01-31-2014	-1.21	-2.85	-2.76	-3.56	127.74	115.73	116.51	111.58
01-31-2014	to	02-28-2014	6.81	5.15	5.12	4.31	136.44	121.69	122.48	116.39
02-28-2014	to	03-31-2014	-7.00	-1.01	-1.13	0.69	126.88	120.46	121.10	117.20
03-31-2014	to	04-30-2014	-5.12	0.00	-0.41	0.62	120.39	120.47	120.61	117.92
04-30-2014	to	05-31-2014	2.87	3.12	2.95	2.10	123.85	124.22	124.16	120.40
05-31-2014	to	06-30-2014	2.94	1.95	2.27	1.91	127.49	126.64	126.98	122.70
06-30-2014	to	07-31-2014	0.37	-1.53	-1.89	-1.51	127.96	124.70	124.58	120.85
07-31-2014	to	08-31-2014	5.38	4.58	4.66	3.77	134.85	130.42	130.39	125.40
08-31-2014	to	09-30-2014	-2.44	-1.45	-1.75	-1.55	131.56	128.53	128.11	123.45
09-30-2014	to	10-31-2014	3.03	2.64	2.90	2.32	135.55	131.91	131.82	126.32
10-31-2014	to	11-30-2014	1.56	3.17	2.98	2.45	137.66	136.09	135.74	129.42
11-30-2014	to	12-31-2014	-1.83	-1.04	-0.75	-0.42	135.14	134.67	134.73	128.88
12-31-2014	to	01-31-2015	0.72	-1.53	-1.59	-3.10	136.12	132.61	132.59	124.87
01-31-2015	to	02-28-2015	8.35	6.67	6.71	5.49	147.49	141.45	141.48	131.73
02-28-2015	to	03-31-2015	-1.45	-1.14	-0.92	-1.74	145.36	139.84	140.18	129.44
03-31-2015	to	04-30-2015	-0.32	0.50	0.23	0.85	144.89	140.54	140.51	130.54
04-30-2015	to	05-31-2015	0.28	1.41	1.58	1.05	145.30	142.52	142.73	131.91
05-31-2015	to	06-30-2015	1.24	-1.76	-1.52	-2.10	147.10	140.01	140.56	129.14
06-30-2015	to	07-31-2015	5.21	3.39	3.14	1.97	154.76	144.76	144.98	131.69
07-31-2015	to	08-31-2015	-6.87	-6.07	-6.19	-6.26	144.14	135.97	136.00	123.45
08-31-2015	to	09-30-2015	-2.66	-2.47	-2.78	-2.64	140.30	132.60	132.22	120.18
09-30-2015	to	10-31-2015	9.66	8.61	8.39	8.30	153.86	144.02	143.31	130.16
10-31-2015	to	11-30-2015	-0.14	0.28	0.53	0.05	153.65	144.43	144.07	130.22
11-30-2015	to	12-31-2015	-1.13	-1.47	-1.72	-1.75	151.91	142.31	141.59	127.94
12-31-2015	to	01-31-2016	-8.77	-5.58	-5.97	-5.07	138.59	134.36	133.13	121.45
01-31-2016	to	02-29-2016	-4.20	-0.04	-0.09	-0.41	132.77	134.31	133.01	120.95
02-29-2016	to	03-31-2016	5.42	6.74	6.81	6.60	139.97	143.36	142.07	128.93
03-31-2016	to	04-30-2016	0.51	-0.91	-0.78	0.27	140.68	142.05	140.96	129.28
04-30-2016	to	05-31-2016	2.33	1.94	2.00	1.53	143.95	144.81	143.78	131.26
05-31-2016	to	06-30-2016	-2.94	-0.39	-0.40	0.09	139.72	144.24	143.20	131.38
06-30-2016	to	07-31-2016	7.22	4.72	4.86	3.56	149.81	151.05	150.16	136.05
07-31-2016	to	08-31-2016	-0.44	-0.50	-0.38	-0.12	149.14	150.30	149.59	135.89
08-31-2016	to	09-30-2016	1.10	0.37	0.45	-0.12	150.79	150.85	150.26	135.72
Date to Date										
05-02-2013	to	09-30-2016	50.79	50.85	50.26	35.72				
Annualized			12.79	12.80	12.67	9.36				

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PERFORMANCE HISTORY
GROSS OF FEES
North Carolina Retirement System
From 05-02-13 to 09-30-16

Time Period			Percent Return				Cumulative TWR			
			Portfolio	Per Period		S&P 500	Basis = 100			
				Russell 1000 Growth	Russell 3000 Growth					
05-02-2013	to	05-02-2013					100.00	100.00	100.00	100.00
05-02-2013	to	05-31-2013	1.82	1.69	2.00	2.08	101.82	101.69	102.00	102.08
05-31-2013	to	06-30-2013	-2.21	-1.88	-1.78	-1.50	99.57	99.78	100.18	100.54
06-30-2013	to	07-31-2013	7.78	5.30	5.48	4.95	107.32	105.07	105.68	105.52
07-31-2013	to	08-31-2013	1.83	-1.71	-1.73	-3.13	109.28	103.27	103.84	102.21
08-31-2013	to	09-30-2013	8.60	4.46	4.66	2.97	118.68	107.87	108.68	105.26
09-30-2013	to	10-31-2013	2.94	4.42	4.21	4.46	122.17	112.64	113.26	109.95
10-31-2013	to	11-30-2013	3.28	2.82	2.92	2.80	126.18	115.82	116.57	113.03
11-30-2013	to	12-31-2013	2.75	2.86	2.79	2.36	129.64	119.13	119.82	115.70
12-31-2013	to	01-31-2014	-1.07	-2.85	-2.76	-3.56	128.26	115.73	116.51	111.58
01-31-2014	to	02-28-2014	6.81	5.15	5.12	4.31	137.00	121.69	122.48	116.39
02-28-2014	to	03-31-2014	-7.00	-1.01	-1.13	0.69	127.41	120.46	121.10	117.20
03-31-2014	to	04-30-2014	-4.97	0.00	-0.41	0.62	121.07	120.47	120.61	117.92
04-30-2014	to	05-31-2014	2.87	3.12	2.95	2.10	124.55	124.22	124.16	120.40
05-31-2014	to	06-30-2014	2.94	1.95	2.27	1.91	128.21	126.64	126.98	122.70
06-30-2014	to	07-31-2014	0.51	-1.53	-1.89	-1.51	128.87	124.70	124.58	120.85
07-31-2014	to	08-31-2014	5.38	4.58	4.66	3.77	135.81	130.42	130.39	125.40
08-31-2014	to	09-30-2014	-2.44	-1.45	-1.75	-1.55	132.49	128.53	128.11	123.45
09-30-2014	to	10-31-2014	3.18	2.64	2.90	2.32	136.71	131.91	131.82	126.32
10-31-2014	to	11-30-2014	1.56	3.17	2.98	2.45	138.84	136.09	135.74	129.42
11-30-2014	to	12-31-2014	-1.83	-1.04	-0.75	-0.42	136.30	134.67	134.73	128.88
12-31-2014	to	01-31-2015	0.87	-1.53	-1.59	-3.10	137.48	132.61	132.59	124.87
01-31-2015	to	02-28-2015	8.35	6.67	6.71	5.49	148.97	141.45	141.48	131.73
02-28-2015	to	03-31-2015	-1.39	-1.14	-0.92	-1.74	146.89	139.84	140.18	129.44
03-31-2015	to	04-30-2015	-0.32	0.50	0.23	0.85	146.42	140.54	140.51	130.54
04-30-2015	to	05-31-2015	0.28	1.41	1.58	1.05	146.83	142.52	142.73	131.91
05-31-2015	to	06-30-2015	1.44	-1.76	-1.52	-2.10	148.95	140.01	140.56	129.14
06-30-2015	to	07-31-2015	5.21	3.39	3.14	1.97	156.71	144.76	144.98	131.69
07-31-2015	to	08-31-2015	-6.87	-6.07	-6.19	-6.26	145.95	135.97	136.00	123.45
08-31-2015	to	09-30-2015	-2.45	-2.47	-2.78	-2.64	142.37	132.60	132.22	120.18
09-30-2015	to	10-31-2015	9.81	8.61	8.39	8.30	156.33	144.02	143.31	130.16
10-31-2015	to	11-30-2015	-0.14	0.28	0.53	0.05	156.12	144.43	144.07	130.22
11-30-2015	to	12-31-2015	-1.07	-1.47	-1.72	-1.75	154.45	142.31	141.59	127.94
12-31-2015	to	01-31-2016	-8.62	-5.58	-5.97	-5.07	141.13	134.36	133.13	121.45
01-31-2016	to	02-29-2016	-4.13	-0.04	-0.09	-0.41	135.30	134.31	133.01	120.95
02-29-2016	to	03-31-2016	5.42	6.74	6.81	6.60	142.63	143.36	142.07	128.93
03-31-2016	to	04-30-2016	0.65	-0.91	-0.78	0.27	143.55	142.05	140.96	129.28
04-30-2016	to	05-31-2016	2.33	1.94	2.00	1.53	146.89	144.81	143.78	131.26
05-31-2016	to	06-30-2016	-2.88	-0.39	-0.40	0.09	142.66	144.24	143.20	131.38
06-30-2016	to	07-31-2016	7.22	4.72	4.86	3.56	152.95	151.05	150.16	136.05
07-31-2016	to	08-31-2016	-0.44	-0.50	-0.38	-0.12	152.27	150.30	149.59	135.89
08-31-2016	to	09-30-2016	1.30	0.37	0.45	-0.12	154.25	150.85	150.26	135.72
Date to Date										
05-02-2013	to	09-30-2016	54.25	50.85	50.26	35.72				

The Ithaka Group
TRANSACTION SUMMARY
North Carolina Retirement System
North Carolina Department of State Treasurer
From 09-01-2016 To 09-30-2016

Tran Code	Security	Trade Date	Settle Date	Quantity	Close Meth.	S/D Type	S/D Symbol	Trade Amount	Lot
wd	Dividend Accruals	09-01-2016	09-01-2016			caus	BNYMMF	1,626.56	
dv	Nike Inc cl B	09-01-2016	10-03-2016			caus	divacc	741.12	
in	BNY MELLON MMF	09-02-2016	09-02-2016			caus	BNYMMF	22.67	
in	BNY MELLON MMF	09-02-2016	09-02-2016			caus	BNYMMF	76.15	
wd	Dividend Accruals	09-06-2016	09-06-2016			caus	BNYMMF	1,914.92	
dv	Domino's Pizza, Inc.	09-13-2016	09-30-2016			caus	divacc	676.40	
wd	Dividend Accruals	09-15-2016	09-15-2016			caus	BNYMMF	1,947.87	
dp	Other Management Fee - Non Ithaka	09-16-2016	09-16-2016			caus	BNYMMF	26,501.27	
2ND QTR MGT FEES 2016									
by	BioMarin Pharmaceutical	09-21-2016	09-26-2016	1,130.0000		caus	BNYMMF	108,937.65	2
by	Biogen Inc.	09-21-2016	09-26-2016	50.0000		caus	BNYMMF	15,295.25	3
sl	Facebook, Inc. cl A	09-21-2016	09-26-2016	428.0000 f		caus	BNYMMF	55,075.98	1
sl	Facebook, Inc. cl A	09-21-2016	09-26-2016	352.0000 f		caus	BNYMMF	45,296.13	2
dp	Management Fee	09-26-2016	09-26-2016			awus	client	11,311.46	
wd	Dividend Accruals	09-30-2016	09-30-2016			caus	BNYMMF	676.40	