

# NORTHFIELD

## Northfield's 22<sup>nd</sup> Annual Summer Seminar

Friday, June 9, 2017

International Tennis Hall of Fame, 194 Bellevue Avenue, Newport, RI



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We are pleased to invite you and your colleagues to our annual summer seminar. The purpose of the seminar is to present recent research and technical advances to our clients and friends while enjoying the many pleasures afforded by our unique venue.

Newport has long been a famous sailing center and home of the America's Cup Races, as well as a cherished place to tour. This year we return to the International Tennis Hall of Fame, a venue that will allow us to take advantage of Newport's lovely summer days. The Newport Casino was designed as a social and sporting club and was the center of cultural life for the Astors, Vanderbilts and Newport Society in the "Gilded Age." Designed by Stanford White and considered a masterpiece of Victorian shingle-style architecture, the complex has a picturesque interior courtyard and oriental latticework screens that contribute to the buildings' many shapes and textures. The USTA Wing & Porch provides a private room with an extensive glass wall and doors that open to a 100 ft. long porch overlooking the Casino's horseshoe grass court.

As always, our meeting date has been selected to coincide with the US Professional Championships of Court Tennis. This year's tournament promises to be especially strong with a majority of the top 10 players in the world, including world champion Camden Riviere of the USA, and the previous world champion Robert Fahey of Australia. Court tennis is the medieval sport that is the progenitor of all modern racquet sports. Played by royal devotees such as Louis XIV and Henry VIII, it is perhaps the world's most exclusive sport. Quantitative finance professionals will appreciate that due to the complexity of matches, a paid expert is required just to keep score.

After tennis on Friday evening, we will be returning to The Ocean Cliff for an oceanfront dinner party. We hope that everyone will enjoy this historic evening venue and relax in one of the many chairs overlooking Narragansett Bay, while enjoying an evening cocktail. We look forward to seeing you!

View from the USTA Wing & Porch overlooking one of the grass courts.



View from one of the chairs overlooking Narragansett Bay at Ocean Cliff.

### Registration, Travel Arrangements and Accommodations

There is no charge for participation in any aspect of this event. We will accept any donation you might care to make on behalf of the Pine Street Inn, Boston's primary homeless shelter. Registrants are responsible for the cost of their transportation and lodging. Please note - we are accepting registrations online only at <http://www.northinfo.com/events.php>. As always, attendees are welcome to bring guests. For those planning to spend the night in Newport, ***please remember that this is a BUSY time in NEWPORT and most hotels have very limited space, so please plan accordingly.*** The Viking Hotel and Newport Harbor Hotel and Marina are recommended, along with the Newport Harbor Marriott and the Hyatt Regency Goat Island. Newport also has many delightful inns: further information is available at [www.newportinns.com](http://www.newportinns.com). For all questions, please contact Kathy Prasad at 617-208-2020 or [kathy@northinfo.com](mailto:kathy@northinfo.com). The deadline for all reservations is June 2, 2017.

# Agenda

8:30 AM **Continental Breakfast**

9:00 AM **Welcome**

9:10 AM **Value Tilts, ESG “Sustainable” Investing and Minimum Variance Strategies**

*Steve Dyer and Bill Zieff*

In this presentation, we will explore the intersection of three equity portfolio strategies. First, we will consider the ESG concept of “sustainable” investing which has been extensively debated in the finance literature and dozens of books. We will use the sustainability metric developed in diBartolomeo (2010) to show correspondence with common SRI/ESG concepts and to provide performance simulations of portfolio strategies based on sustainability over the quarter-century from 1992 to date. Next we will combine sustainability and “minimum variance” portfolio construction techniques to illustrate the apparent material benefits of using risk controlled optimization methods with ESG strategies. Finally, we will explore the hypothesis that the historically demonstrable benefits of tilting strategies toward “value factors” may arise from a simple, but persistent flaw in equity valuations because investors fail to account for sustainability.

10:00 AM **Replicating Residential Real Estate Using Liquid Market Securities**

*Emilian N. Belev, CFA, and Richard B. Gold*

The value of the U.S. residential real estate stock is estimated to be tens of trillions of dollars making it perhaps the nation’s largest investable asset class. While the vast majority of homes are not held for investment purposes, as home prices begin to wake up from their post crisis slumber, institutional investors are taking a renewed interest in this asset class as they search for yield. Conversely, mortgage lenders have made an implicit bet on home values as collateral for their outstanding loans. Homeowners themselves should be interested in the ability to hedge the risks of homeownership since their home equity typically represents a significant percentage of their net worth. Lastly, those seeking some of the benefits of homeownership (e.g. prospective home buyers saving for a down payment) should be interested in creating synthetic portfolios which mimic the movement in home prices. These observations point to the need to reliably measure the risks of residential real estate and to construct effective hedges using liquid, divisible, and accessible investment choices. In this presentation, we outline our approach to creating a replicating portfolio for some of the most widely followed residential real estate benchmarks such as the S&P CoreLogic Case Shiller house price index and the Federal Housing Administration HPI while simultaneously following the implications for the underlying risk factor model. We pay special attention to the question of smoothing, normally inherent in real estate indices, and how to account for its effect. Since real estate and property taxes are, respectively, the backbones of mortgage trusts and municipal finances, this modelling technique is also a key tool in decoding the risks of MBS and general municipal bond obligations. Both asset classes represent several trillion dollar markets. Finally, due to the common risk factor structure, this approach is an essential tool for risk management and portfolio construction at the enterprise portfolio level.

10:50 AM **Coffee Break**

11:10 AM **The MBTA Pension Fund’s Cliff Walk**

*Harry Markopolos, CFA, CFE*

In early 2015, the Northfield offices were twice visited by FBI agents seeking advice on unnamed financial fraud investigations. Shortly thereafter rumors began to circulate that there were financial irregularities at the retirement fund of the Massachusetts Bay Transit Authority. A public investigation was started by the *Boston Globe* which was then conducted by a volunteer citizen’s committee of experts from the Boston investment community. The tangible result of that investigation was a confidential PowerPoint presentation of more than 100 slides that was provided at the end of July, 2015 to a consortium of law enforcement agencies. The presentation suggested that the financial position of the MBTARF was probably misstated by *half a billion dollars* and the described many specific failures of due diligence that led to the hidden deficit. Despite an additional outside audit which uncovered no irregularities, there has now been public acknowledgement of the \$500 million previously undisclosed funding deficit by MBTA and state officials. Based on the MBTARF investigation, we believe that numerous similar funds around the country are in similarly bad position for similar reasons, as evidenced by recent news reports on the Dallas Police Retirement Plan and the Teamsters Union of New York City Retirement Fund.

12:00 PM **Asset Owner Risk Assessment Made Easy**

*Peter Horne*

As illustrated by the previous presentation, most asset owners who do not manage money internally simply have no material understanding of the risks that their funds routinely undertake. At this event in 2015 we presented Northfield’s vision for what could be done to get middle-market asset owners the kind of information needed to appropriately manage

the risk of their funds. This presentation will be a demonstration of our “almost ready” RAMP risk platform for asset owners, and will briefly comment on parallel offerings through Northfield partners such as State Street Global Exchange.

12:25 PM **A Newport Luncheon**

1:45 PM **An Optimized Approach to Scenario Driven Simulations with Higher Moments**  
*Dan diBartolomeo*

This presentation provides a new approach to return forecasts and risk assessment from numerical simulations. As risk-related regulation extends from commercial banking to other parts of the financial services industry, risk assessments arising from “stress tests” and “scenario analysis” have become more widely discussed and implemented. Unfortunately, traditional methods for this kind of risk assessment are often counter-productive for long term investors. Existing processes have worked in one of two ways. The first is Monte Carlo simulations where there is random sampling from a parametric or empirical distribution to get a range of possible outcomes. Risk assessments are based on the lower tail of the portfolio value distribution. The second process is to forecast a single return value for a series of specific exogenous scenarios. For example, “What will be the % change in the value of my portfolio if interest rates go up 2% and oil prices go down 30%?” It is argued that if we look at enough different “stress scenarios” we can gain an intuition about “worst case” outcomes. Unfortunately, the way most stress scenarios are formulated, their actual probability of occurrence is very, very small. Investors predicating investment strategy on such low probability outcomes end up with portfolios that are materially sub-optimal in the vast preponderance of situations. To resolve the shortcomings of numerical methods we have built a new process, extending the approach suggested in Meucci (2008) which combines Monte Carlos simulations with the flexibility to overlay complex explicit scenarios. The computational process involves an optimization problem that calibrates our “bootstrap” resampling process to one or more user defined scenarios. Our process also utilizes the approach of Satchell and Hall (2013) to appropriately incorporate portfolio assets whose distributions have material or kurtosis (e.g. derivatives). The analytical output of the process is a robust representation of the distribution of possible outcomes, while being consistent with any mathematically feasible “stress scenario”.

2:35 PM **Coffee Break**

2:55 PM **Risk, Uncertainty and Time Horizon: What Most Risk Models Get Wrong!**  
*Dan diBartolomeo*

Providers of risk systems often gloss over the most important attribute of any investment risk estimate. It is obvious that *all risk of investment performance is in the future*. If so, how far in the future: a day, a month, or a century? As we move from the intraday horizons of trading operations to the multiple-decade actuarial horizons of a sovereign wealth fund, the nature of the estimation problem changes profoundly, a fact which risk system providers often prefer to obscure in an effort to present their commercial offering as “one size fits all.” In this presentation, we will address several common errors in the modeling process that can greatly impact the validity of risk forecasts. Among these is the failure to distinguish between statistical risk (i.e. a known distribution) and “Knightian uncertainty” (uncertain distribution subject to change). A second error is the assumed shape of factor and asset return distribution in terms of “fat tails” over shorter horizons. Another frequently observed mistake is to include too many factors in the model than the available data can support in an effort to make risk decomposition reports more granular. Finally, the most common problem is the obvious mathematical error of using a relatively short estimation sample period in order to make a model “more responsive” to changes in volatility levels, *while annualizing those same time-varying risk assessments under mathematical assumptions that are valid only if volatility is constant*.

3:50 PM **Court Tennis Demonstration**

4:30 PM **Semi-Final Match, the US Pro Court Tennis Championships**

6:30 PM **Buffet Dinner and Open Bar, Ocean Cliff**

## **DIRECTIONS**

### **International Tennis Hall of Fame**

194 Bellevue Avenue  
Newport, RI 02840  
Telephone 401-849-3990

Newport is a 40 minute ride from Providence, RI, 90 minutes from metropolitan Boston and 3-1/2 hours from New York City.

#### **From Providence and Points NW:**

Take 95 South. Follow 95 South to exit 9 (Route 4). Route 4 merges into route 1 at a sharp right-hand curve. Follow route 1 (for less than 1 mile) and you will see a sign for 138 East and first right hand exit. Follow 138 East and it will bring you over the Jamestown Bridge and then Newport Bridge (\$2 Toll). At first exit off Newport Bridge, "Scenic Newport," bare right at bottom of the ramp and proceed to traffic light and straight through. Turn right at next light onto "America's Cup Avenue." Get in the left lane and at the fifth light proceed up Memorial Boulevard. Take a right at the second light onto Bellevue Avenue. The Tennis Hall of Fame will be in the first block on your left.

#### **From Boston and points north:**

Interstate 93 South, Route 128, Interstate 495 East or Interstate 195 to Route 24 South. Follow Route 24 through Fall River into Rhode Island. Take Exit 1 to Route 138 West. Take a left onto Route 138A. Go left at second traffic light. Proceed to the first major intersection and take a left onto Bellevue Avenue. The Tennis Hall of Fame will be first block on your left.

#### **From CT, NY, NJ and points south:**

Interstate 95 North into RI to Exit 3/ Route 138. Follow Route 138 over the Jamestown and Newport bridges. Take first exit to "Scenic Newport." Turn right and proceed through light. Turn right at next light onto "America's Cup Avenue." Get in the left lane and at the fifth light proceed up Memorial Boulevard. Take a right at the second light onto Bellevue Avenue. The Tennis Hall of Fame will be in the first block on your left.

#### **Directions from Green Airport Providence**

Take 95 South to Rt. 4 South Exit #9, left exit off of highway, "North Kingston." Continue on Rt. 4 for approximately 10 miles and it will merge to Rt. 1 South. Almost immediately after changing into Rt. 1 South there will be an exit for Rt. 138 East "Newport/Jamestown." Take a right and follow "Transportation and Visitors Center" signs to America's Cup Avenue. America's Cup Avenue turns into Memorial Boulevard (by the Post Office). Ascend hill and at second set of lights on Memorial Boulevard turn right onto Bellevue Avenue. Hall of Fame is half of a block down on the left. (194 Bellevue Avenue).

For more information regarding International Tennis Hall of Fame <http://www.tennisfame.com>

**Ocean Cliff**  
65 Ridge Road  
Newport, RI 02840  
Phone: (401) 841-8868