

Direct Testimony and Schedule
R. Evan Inglis

Before the Minnesota Public Utilities Commission
State of Minnesota

In the Matter of the Application of Northern States Power Company
for Authority to Increase Rates for Electric Service in Minnesota

Docket No. E002/GR-15-826
Exhibit____(REI-1)

Pension Investments

November 2, 2015

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND OCCUPATION.

A. My name is R. Evan Inglis. I am an actuary and investment professional employed by Nuveen Asset Management. The primary focus of my current position is to develop investment strategies for pension plans. I advise Nuveen professionals internally and Nuveen's clients and prospective clients externally about pension risk and investment strategies that are appropriate for their pension plans. I also write white papers and speak publicly about pension plans, pension risk, and investment strategies.

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I am a Fellow of the Society of Actuaries (FSA) and a Certified Financial Analyst (CFA Charterholder). I attained my FSA designation in 1990 and became a CFA Charterholder in 2011. I have 30 years of experience working with pension plan sponsors on issues such as liability and cost measurement, plan design, pension accounting, funding strategies, and investment strategies. Starting in 2008, I was employed by one of the world's largest asset managers and guided the development of its investment methodologies for pension plans, focusing on liability-driven strategies for corporate pension plans. During the past eight years I have:

- educated thousands of pension and investment professionals about pension investment strategies through webcasts and presentations at conferences, in-person meetings, and phone conversations;
- designed, implemented and monitored investment strategies for dozens of pension funds;

- 1 • discussed and recommended strategies with professionals representing
2 dozens of additional pension funds;
- 3 • written white papers on subjects such as management of pension risk,
4 effects of the demographic profile of a pension plan population on the
5 investment strategy, investment glidepath de-risking strategies,
6 immunization investment strategies, investment strategies for
7 terminating pension plans, and investment strategies for cash balance
8 pension plans;
- 9 • spoken publicly on the previously mentioned topics as well as topics
10 such as evaluating the success of liability-driven investment strategies,
11 stochastic modeling of pension risk, pension investment strategies in a
12 low interest rate environment, pension investment risk from a
13 corporate finance perspective, and risk-based frameworks for decision-
14 making about pension plan investments and plan design;
- 15 • testified before the ERISA Advisory Council on the employer's
16 perspective in pension de-risking trends;
- 17 • testified for the Government Accounting Standards Board on
18 accounting standards for government pension plans;
- 19 • worked with some of the world's largest pension plans and advised the
20 sponsors of those plans about pension risk; and
- 21 • been retained by the World Bank to assist with pension matters and
22 retirement systems in developing countries such as Costa Rica.

23
24 I have recently been a member of the Board of Directors of the Society of
25 Actuaries (SOA) and the Board liaison to the SOA's Investment Section
26 Council, which directs research and education on investments for the actuarial
27 profession. I am also a member of the American Academy of Actuaries

1 (AAA) Public Interest Committee. I have been the chairperson for the
2 Pension Finance Task Force jointly sponsored by the SOA and AAA. In the
3 past, I have been elected to the SOA's Pension Section Council and appointed
4 to the AAA's Pension Practice Council.

5
6 Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

7 A. I am testifying on behalf of Northern States Power Company - Minnesota
8 (NSPM or Company).

9
10 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

11 A. The purpose of my testimony is to provide an independent, third-party
12 opinion regarding whether the investment strategies and target asset
13 allocations for the Company's pension funds are reasonable, based on the
14 demographics of the Company's workforce and other relevant factors.

15
16 Q. WHY ARE YOU PROVIDING TESTIMONY REGARDING THE INVESTMENT
17 STRATEGIES FOR AND TARGET ASSET ALLOCATIONS IN THE COMPANY'S
18 PENSION FUNDS?

19 A. It is my understanding that in the Company's most recent base rate case, the
20 Minnesota Public Utilities Commission (Commission) issued an Order Point
21 that required the Company to address the reasonableness of its target asset
22 allocations in the Company's next rate case. More specifically, I have been
23 informed by the Company that in Docket No. E002/GR-13-868, the
24 Commission issued the following Order Point that is relevant to my
25 testimony:

26 11. In the initial filing of its next electric rate case, the Company
27 shall:

- 1 a. Address why the target asset allocations for its pension fund are
2 reasonable, including ages of retirees and employees. The
3 Company must provide an update to its existing Exhibit 31
4 (Tyson Rebuttal), Schedule 1 and expand it to include this
5 demographic information.
6 b. Provide testimony on its investment strategies and target asset
7 allocations for the qualified pension fund and the justifications
8 for these decisions, for the period from 2007 to the date of its
9 next filing.
10

11 Based on these directives from the Commission, the Company asked me to
12 review its target asset allocations and provide an opinion regarding whether
13 those allocations are reasonable. The Company also asked me to review its
14 investment strategies and determine whether they are reasonable.
15

16 Q. IS ANY OTHER WITNESS PROVIDING TESTIMONY REGARDING THE COMPANY'S
17 TARGET ASSET ALLOCATION?

18 A. Yes. Company witness Mr. George E. Tyson, II is providing the factual
19 background relevant to the Company's target asset allocations and its
20 investment strategies.
21

22 Q. DID THE COMPANY PROVIDE YOU WITH INFORMATION BY WHICH TO ASSESS
23 THE REASONABLENESS OF THE TARGET ASSET ALLOCATIONS?

24 A. Yes. I have reviewed the testimony of Mr. Tyson. In addition, the Company
25 provided me with the following information to help me analyze the
26 reasonableness of the Company's target asset allocations:

- 27 • Investment policy statements (IPS), as they were amended from time to
28 time.

- 1 • Funded status and changes in both the Company's pension assets and
2 pension liability (which is sometimes referred to as the pension benefit
3 obligation, or PBO) on an accounting basis for 2007 – 2014.
- 4 • A breakdown of the pension plan liability according to benefit formula.
- 5 • Materials, including presentations by the investment consultant and
6 minutes from several investment committee meetings, over the period
7 2007 – 2014.
- 8 • Demographic information, such as counts, average age and average
9 service for the active, terminated and retired participants in the Xcel
10 Energy Pension Plan (XEPP).

11
12 I also reviewed several of the Form 5500 and 10-K filings for the plan from
13 the period 2007 – 2014, which are available publicly. From these I obtained
14 information about the plan provisions, plan populations and actuarial
15 assumptions. I reviewed research reports from Towers Watson and
16 Greenwich Associates with information about the asset allocation for
17 corporate pension plans in the U.S.

18
19 In addition to reviewing the materials, I was given the opportunity to speak
20 with Mr. Tyson and other Company representatives regarding the current and
21 prior investment strategies and the target asset allocations.

22
23 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

24 A. I have considered the Company's investment strategy and asset allocation,
25 based on the materials provided, and I found the stated strategy and asset
26 allocation to be reasonable over the relevant time period. The strategy
27 demonstrates key best practices, such as an understanding of how to measure

1 investment risk relative to the pension liability and the significance of funded
2 status on the desired level of risk. The strategy is similar to that of other large
3 pension funds throughout the relevant time period.

4
5 I analyzed the Company's target asset allocation as of the end of 2014 and the
6 changes to the target asset allocation since 2007. I have considered several key
7 factors that should influence the asset allocation of any pension plan:

- 8 • plan liability characteristics,
- 9 • demographic profile of the participants,
- 10 • status of the plan (open, closed or frozen),
- 11 • size of the plan relative to the size of the plan sponsor's business, and
- 12 • funded status of the plan.

13
14 I found that the Company's asset allocation is reasonable and that the
15 Company's approach to determining asset allocation reflects current best
16 practices.

17 18 **II. INVESTMENT STRATEGIES**

19
20 Q. WHAT TOPIC DO YOU DISCUSS IN THIS SECTION OF YOUR TESTIMONY?

21 A. I describe the Company's current investment strategy for its pension funds
22 and provide my opinion on the reasonableness of that strategy. I also address
23 the reasonableness of the Company's investment strategies and the changes in
24 those strategies from 2007 to the present.

25
26 Q. HAS THE COMPANY OUTLINED ITS INVESTMENT STRATEGY IN ANY
27 DOCUMENTS THAT YOU HAVE REVIEWED?

1 A. Yes, a fairly complete picture of the investment strategy can be derived from
2 Mr. Tyson's testimony and the documents I listed earlier.

3
4 Q. WHAT FACTORS SHOULD THE COMPANY CONSIDER WHEN DECIDING WHAT ITS
5 INVESTMENT STRATEGY SHOULD BE?

6 A. The investment strategy should define risk in the right way and identify tools
7 that are useful to manage risk to a level that is appropriate for pension fund
8 stakeholders. The return objectives should be consistent with the level of risk
9 determined. Some of the key factors to consider include:

- 10 • the fiduciary duty to secure benefits promised to the participants,
- 11 • the risk that funding requirements will be uncertain or volatile, thereby
- 12 disrupting the plan sponsor's business, and
- 13 • the perspective that the plan sponsor's shareholders or other financial
- 14 stakeholders, such as customers, might have on pension risk and
- 15 investment returns.

16
17 Q. WHAT IS THE COMPANY'S CURRENT INVESTMENT STRATEGY, AS YOU
18 UNDERSTAND IT?

19 A. At a high level, the Company uses a long-term investment horizon and
20 evaluates risk in an asset-liability framework in which the change in the value
21 of assets relative to the value of the liability is more important than the change
22 in value of the assets alone. In other words, changes in the pension plan's
23 funded status are the measure by which results and risk and measured. A
24 successful strategy would, over time, grow the assets faster than the pension
25 liability but would also keep contributions relatively stable and predictable.
26 The strategy is designed so that seeking returns and reducing risk can be

1 balanced and controlled, and funded status is used as a key factor in
2 determining how much risk to take.

3
4 Q. WHAT TOOLS DOES THE COMPANY RELY ON TO IMPLEMENT THAT STRATEGY?

5 A. The Company pursues its dual goal of pursuing growth while mitigating risk
6 relative to the liability by allocating its investments between a “Growth
7 Portfolio” and an “Immunization Portfolio,” both of which are described in
8 more detail by Mr. Tyson. The Company also dedicates a small portion of its
9 portfolio to near-term liquidity needs. While the Company has moved away
10 from using a formal “glidepath” to determine the portfolio allocations to
11 Growth and Immunization, funded status is still used as a key factor for this
12 determination. The Company uses some of the top pension expertise
13 available (a unit at JP Morgan that moved to Pacific Global Advisors, and very
14 recently to Goldman Sachs) to advise on and implement their strategy.

15
16 Q. DO YOU CONSIDER IT APPROPRIATE FOR THE COMPANY TO RELY ON PENSION
17 ADVISORS SUCH AS GOLDMAN SACHS?

18 A. Yes. Managing a pension fund is complex and requires information, resources
19 and expertise that is not directly available to the Company without hiring an
20 advisor. Rankings and analysis of investment managers, ALM (asset-liability
21 modeling) tools and actuarial expertise are some of the main resources that the
22 Company is able to access by using an advisor. In addition, an advisor is able
23 to discuss the Company’s strategy in the context of a wide variety of pension
24 fund managers.

25
26 Q. BASED UPON YOUR EXPERIENCE AND EXPERTISE, IS THE COMPANY’S CURRENT
27 INVESTMENT STRATEGY REASONABLE?

1 A. Yes. In my opinion, the strategy is reasonable because both pension plan
2 participants and the financial stakeholders of the Company are well-served by
3 a balanced approach to seeking returns and reducing risk. Other managers of
4 large pension funds use similar strategies. Using funded status and asset
5 returns relative to pension liability growth to understand risk and measure
6 results is the appropriate approach for a pension plan.

7
8 Q. HAS THE COMPANY'S INVESTMENT STRATEGY FOR ITS PENSION PLAN
9 CHANGED OVER TIME?

10 A. Yes, but not significantly. It would be more appropriate to say that a similar
11 strategy has been implemented in a different way since 2008. The overall
12 strategy has been defined by a long-term, diversified approach to seeking
13 returns, with risk measured by changes in funded status, using specific
14 allocations to growth assets and hedging assets. This did not change. The
15 overall target level of risk and approach to seeking returns did not change
16 significantly. After 2008, the separate Growth and Immunization portfolios
17 were created to be more explicit about the portfolio objectives and the balance
18 between risk and return. In addition, separate portfolios were developed for
19 each different pension plan, allowing the balance between risk and return to
20 more accurately reflect the plan provisions, demographics of the plan
21 population, funded status and other factors.

22
23 Q. HAVE YOU EVALUATED THE REASONABLENESS OF THE COMPANY'S PRIOR
24 INVESTMENT STRATEGIES?

25 A. Yes, I examined the Company's prior investment strategies as outlined in Mr.
26 Tyson's testimony and the materials provided to me by the Company.

1 Q. DO YOU CONSIDER THE COMPANY'S INVESTMENT STRATEGIES IN PRIOR YEARS
2 TO BE REASONABLE?

3 A. Yes. The Company's investment strategy has been reasonable considering the
4 economic environments and typical practices of pension fund investment
5 managers during this period. Prior to the market turmoil in 2008, the
6 Company had an aggressive approach to seeking returns and to managing
7 interest rate risk, within the context of a risk budget. The risk budget
8 encompassed the risk related to equity returns and interest rate risks. That
9 approach was relatively common amongst large pension plans. Similar to the
10 approach taken by other pension funds, the Company's strategy has become
11 even more focused on liability risk, and the portfolio of return-seeking assets
12 has become even more diversified after 2008. Pension funds have universally
13 reconsidered their level of risk and approach to seeking returns since the
14 economic crisis. Pension fund strategies have been influenced by the low level
15 of interest rates and an expectation that interest rates will rise.

16
17 Q. HAS THE COMPANY'S INVESTMENT STRATEGY BEEN SIMILAR TO THAT OF
18 OTHER PENSION PLANS?

19 A. Yes. The Company's strategy is, and generally has been, broadly similar to
20 other pension plans. The Company's strategy was already based on an asset-
21 liability perspective prior to 2009 – an approach that would have been
22 somewhat leading edge at the time, but that has continued to be adopted by
23 plans since. The use of a risk budget for determining overall risk levels and
24 for assigning risk to different parts of the portfolio was common prior to
25 2009. The higher level of focus on the pension liability, the use of separate
26 return-seeking (growth) and liability-hedging (immunization) portfolios and
27 the use of funded status as a factor driving the level of risk are all common

1 and have become even more common since 2008. In addition, many pension
2 funds have diversified their return-seeking assets by using more alternative
3 investments in recent years.

4
5 Q. HAS THE COMPANY'S INVESTMENT STRATEGY ACHIEVED ITS INTENDED
6 OBJECTIVES DURING THE TIME THIS STRATEGY HAS BEEN IN EFFECT?

7 A. Yes, the Company's investment strategy has largely achieved its intended
8 objectives in light of economic and market conditions. The period since the
9 economic crisis has been characterized by an unusual economic environment
10 where interest rates have unexpectedly dropped to historic lows and stayed at
11 that low level consistently. This has presented a challenging environment for
12 pension plans because pension liabilities increase when interest rates go down.
13 Pension plan funded statuses have generally dropped, and pension plan
14 sponsors have been forced to increase the level of contributions to their plans.
15 The Company has had a similar experience, but it has achieved a very stable
16 return with its diversified portfolio, captured excess returns from its growth
17 assets, and eliminated some of the effect of the drop in interest rates with the
18 hedging assets in the portfolio.

19
20 **III. TARGET ASSET ALLOCATIONS**

21
22 Q. WHAT TOPIC DO YOU DISCUSS IN THIS SECTION OF YOUR TESTIMONY?

23 A. I address the reasonableness of the Company's current target asset allocation
24 for its qualified pension funds. I also address the reasonableness of the
25 Company's prior target asset allocations from 2007 to the present.

1 Q. WHAT FACTORS SHOULD THE COMPANY CONSIDER WHEN DECIDING WHAT ITS
2 TARGET ASSET ALLOCATION SHOULD BE?

3 A. The target asset allocation should have the right level of risk, as defined by the
4 investment strategy. To achieve the right level of risk a number of factors
5 should be considered:

- 6 • the funded status of the plan,
- 7 • the status (open, closed or frozen) of the plan,
- 8 • the size of the pension plan relative to the size of the plan sponsor's
9 business,
- 10 • the financial health of the pension plan sponsor,
- 11 • liability profile of the pension plan formula,
- 12 • the duration (interest rate sensitivity) of the plan liability, and
- 13 • the demographic profile of the pension plan participants.

14
15 Q. IN YOUR OPINION, IS THE COMPANY'S TARGET ASSET ALLOCATION
16 REASONABLE, INCLUDING CONSIDERATION OF THE DEMOGRAPHIC PROFILE OF
17 THE PLAN PARTICIPANTS?

18 A. Yes. The Company's current asset allocation appears reasonable in light of the
19 various factors that I described above. A range of different asset allocations
20 might be considered reasonable, and the Company's current target is
21 comfortably within that range.

22
23 Q. HAVE YOU ALSO REVIEWED THE COMPANY'S TARGET ASSET ALLOCATION FOR
24 THE YEARS BACK TO 2007?

25 A. Yes.

1 Q. WAS THE COMPANY'S TARGET ASSET ALLOCATION REASONABLE DURING THE
2 PERIOD FROM 2007 TO 2014?

3 A. Yes. The Company has changed its target asset allocation several times during
4 this period, generally in the direction of more and better risk management. In
5 2007, the asset allocation had significant exposure to growth assets and a high
6 level of interest-rate hedge, with an overall level of risk consistent with a risk
7 budget. After the economic crisis in 2008, the Company's target allocation
8 was changed. My understanding is that this was done for several reasons:

- 9 • to recognize the different liability profiles of the individual pension
10 plans;
- 11 • to capture outsized gains from derivatives used to hedge interest rate
12 risk;
- 13 • to diversify the growth portfolio using more alternative investments;
- 14 • to reduce risk related to leverage;
- 15 • to allow for more liquidity; and
- 16 • to allow for changes in the allocation when funded status or interest
17 rates changed.

18
19 The overall change in approach has been similar to changes made by other
20 pension plans in reaction to the economic crisis.

21
22 Q. IS IT REASONABLE TO ASSUME THAT THE COMPANY'S RETURN ON ITS PENSION
23 FUND INVESTMENTS WILL MATCH THE U.S. STOCK MARKET RETURNS FOR A
24 PARTICULAR YEAR?

25 A. No, the return on the pension fund will reflect the combination of returns for
26 the asset classes that the portfolio is invested in. Equities (the stock market)
27 will generally have the highest return expectation in any portfolio, but those

1 returns are quite volatile, and in any one year they may have very high or very
2 low returns that are not reflective of the long-term expectation. A portfolio
3 designed to match returns in the U.S. equity market would be considered very
4 risky, despite having a high long-term expectation for returns. A well-
5 designed portfolio with a balance of objectives including seeking high return,
6 diversification, and other risk reduction will, over time, and in many years,
7 have returns lower than the U.S. equity market.

8
9 Q. WHAT IS YOUR OVERALL CONCLUSION REGARDING THE REASONABLENESS OF
10 THE COMPANY'S TARGET ASSET ALLOCATIONS?

11 A. Prior to the economic crisis the Company's pension portfolio was
12 characterized by a high level of interest-rate hedge and a high allocation to
13 return-seeking growth assets, which were both relatively common amongst
14 large plans at the time. These two aspects of the portfolio were likely seen as
15 having offsetting impacts within the context of an overall risk budget.
16 Changes in the asset allocation since 2008 have reduced both of these types of
17 exposure and have reflected broadly held views and practices about interest
18 rates and the diversification of return-seeking assets. The target asset
19 allocation for the the Company's pension plan is reasonable, and the changes
20 in the asset allocation since the economic crisis have been reasonable,
21 reflecting views commonly held by pension plan sponsors and many pension
22 investment experts.

23 24 IV. CONCLUSION

25
26 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

1 A. There is no single investment strategy or asset allocation that can be
2 considered appropriate and reasonable for any particular pension plan and
3 plan sponsor, but I consider the Company's investment strategy and asset
4 allocation to be reasonable because it reflects the right risk framework and the
5 level of risk is appropriate for the circumstances of the plan and the plan
6 population.

7
8 In addition, the current target allocation and changes in the asset allocation for
9 the Company's plan over the period 2007 – 2014 are similar to the asset
10 allocation and changes to asset allocation for the other large pension plans,
11 indicating that it is consistent with typical practice in the industry.

12
13 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

14 A. Yes.

R. Evan Inglis, FSA, CFA, MAAA, FCA

Mr. Inglis is a Senior Vice President working in the Institutional Solutions Group of Nuveen Asset Management. He advises on investment strategies for pension plans and represents the firm by writing and speaking publicly. He has over 30 years of experience working with employee benefit plan financial matters and is a frequent speaker and writer on a wide variety of pension issues and ideas.

The following summarizes Mr. Inglis' career:

- Nuveen Asset Management (January 2015 to present): Senior Vice President
- The Terry Group (1/2014 – 12/2014): Worked with the founders to develop business ideas and contacts and analyzed risks for a number of public pension situations.
- Vanguard (2008 – 2013): Served as the chief actuary and advised pension clients on liability-driven investment strategies and served as a resource for institutional clients on pension and related issues
- Watson Wyatt (2003 – 2008): Lead actuary for General Motors account and led a multi-office team advising and supporting GM on pension and OPEB issues
- Watson Wyatt (1998 – 2003): Served as director of quality and developed and implemented a global quality program focused on efficiency, risk management, and producing high-value work for clients
- Watson Wyatt (1983 – 1998): Senior consulting actuary in Portland (Oregon), Seattle, Oslo and Stockholm

Evan is a Fellow of the Society of Actuaries and a CFA Charterholder.

Evan has played significant leadership roles within the actuarial profession. He has served on the Society of Actuaries Board of Directors since 2012 and currently is a member of the American Academy of Actuaries Public Interest Committee. Previously, he chaired the Pension Finance Task Force, jointly sponsored by the Society and the Academy. He served on the Pension Practice Council of the Academy and the Pension Section Council of the Society, and has contributed to numerous other research and advocacy efforts within the profession.

Evan is a thought leader in the pension, investment and retirement industry, writing and speaking frequently on various topics. Some of Evan's recent contributions include:

- *How Old is Your Pension Plan? Matching Pension Investing to Plan Demographics* (Nuveen Asset Management, 2015)
- *Obligation-Based Asset Allocation for Public Pension Plans* (Nuveen Asset Management, 2015)
- *Derisking Investment Strategies in a Low Interest Environment* (2014 Enrolled Actuaries Meeting)
- *LDI: Where We've Been, Where We Are and Where We're Going* (Conference of Consulting Actuaries webcast, 2013)
- *Risk-Sharing Plan Designs - A Look at Variable Annuity Plans and Other Emerging Pension Plan Designs* (Society of Actuaries Annual Meeting, 2013)
- *A Risk-based Framework for Pension Decision-making* (Contingencies Magazine, 2013)

Recent Articles and Essays

Investment Fallacy: Active Management Overall Performs Differently than Passive Management
Society of Actuaries Investment E-Book, 2014

Trading Places: A Life and Pension Actuary Find Common Ground to Express Funding Concepts
Published in various Society of Actuaries Section Newsletters, 2014

Why are Corporate Pension Plans Reducing Risk Now?
Risk & Rewards, Pension Section News, 2012-2013

A Risk-based Framework for Pension Decision-making
Contingencies Magazine, 2013

Quoted extensively in CFO Magazine article on pension risk, *The Great Pension Derisking*, 2013

Understanding Liabilities Key to Well-Designed Pension Investment Strategies
Investment & Wealth Monitor, 2010

Speech, Panel and Webcast Highlights

Ethics in a Pension Context
2015 Society of Actuaries Annual Meeting

Are Financial Economics Principles Applicable to Public Pension Plans
2015 Society of Actuaries Annual Meeting

Communicating Risk
2015 Enrolled Actuaries Meeting General Session

Potpourri of Investment Topics (Demographic-based Investing)
2015 Enrolled Actuaries Meeting

Public vs. Private Pension Risk Management
2015 Society of Actuaries Investment Symposium

Public Pension Plans: Great Crisis, Small Crisis, or No Problem
2014 Society of Actuaries Meeting

Asset Management to and through Group Annuity Purchase
2014 Society of Actuaries Meeting

Pension Management from a Risk Management Perspective
2014 Society of Actuaries Meeting

Finding Common Ground – Financial Economists and Actuaries Look at Public Pension Plans
2014 Conference of Consulting Actuaries Meeting

Stochastic Modeling
2014 Enrolled Actuaries Meeting

Derisking Investment Strategies in a Low Interest Environment
2014 Enrolled Actuaries Meeting

LDI Challenges
2014 Society of Actuaries Investment Symposium
2014 Mid-Atlantic Actuarial Club Annual Meeting

Pension Risk Transfer & Investment Strategies
2013 Society of Actuaries Annual Meeting

Discount Rates for Pension Plans
Society of Actuaries webcast, 2013

Risk-Sharing Plan Designs - A Look at Variable Annuity Plans and Other Emerging Pension Plan Designs
Society of Actuaries Annual Meeting, 2013

Who's Managing the Risk Anyway? Perspectives on Risk, Risk Management and the Actuarial Profession
2013 Philadelphia Actuarial Club Annual Meeting

Intergenerational Equity: Who will Pay for Past Promises
Society of Actuaries Annual Meeting, 2013

LDI: Where We've Been, Where We Are and Where We're Going
Conference of Consulting Actuaries webcast, 2013

Measuring the Success of Hedging Portfolios
2013 Society of Actuaries Investment Symposium,
2012 Pensions & Investments Liability Driven Investing Conference

Pension Risk Transfer, Analysis of 2012 Derisking by GM from Corporate Finance Perspective
Society of Actuaries webcast, Michigan Actuarial Society annual meeting

Derisking is Job One: A Review of Ford and GM's Pension De-Risking Efforts and the Impact on Plan Sponsors
Society of Actuaries webcast, 2012

PBGC Risk-based premiums
2012 Society of Actuaries Meeting

Dynamic Asset Allocation
2012 Enrolled Actuaries Meeting

Derisking Pension Plans
2012 Enrolled Actuaries Meeting

Unique Issues for Hybrid Plans
2011 Society of Actuaries Annual Meeting

Pension Derisking: Start with the End in Mind
2011 Pensions & Investments Liability Driven Investing Conference

Green DB: Making Pension Plans Sustainable
2010 ACOPA Advanced Actuarial Conference
2010 Pensions & Investments Liability Driven Investing Conference

Plan Design for the Future
2010 Enrolled Actuaries Meeting

Assumption Setting for Retirement Plans: Market-based vs. Best Estimate
2010 Society of Actuaries Annual Meeting

Pension Investment Strategies for the 21st Century
2010 Enrolled Actuaries Meeting General Session

Research Highlights

How Old is Your Pension Plan? Matching Pension Investing to Plan Demographics (Nuveen Asset Management, 2015)

Obligation-based Asset Allocation for Public Pension Plans (Nuveen Asset Management, 2015)

Consideration for Frozen Pension Plans: Immunization or Termination? (Institutional Investor Guide to Pension and Longevity Risk Transfer, 2014)

Pension plan immunization strategies: How close can you get? (Vanguard, 2013)

Frozen pension plans: Is immunization or termination the right choice? (Vanguard, 2012)

Pension Derisking: Start with the end in mind (Vanguard, 2012)

For better pension liability matching, consider adding Treasuries (Vanguard, 2012)

Pension plan termination: Minimizing cost and risk (Vanguard, 2011)

Investment strategies for cash balance plans--more risk than you thought (Vanguard, 2011)

Other

Hired by The World Bank to support training and guidance on new regulations for Costa Rica's pension supervisory body, SUPEN, 2015

Testified on corporate view of pension risk transfer at DOL ERISA Advisory Committee hearings, 2013

Testified on behalf of American Academy of Actuaries to Government Accounting Standards Board, 2010 on Preliminary Views on Pension Accounting and Financial Reporting for Employers

Chairperson of Pension Finance Task Force (jointly sponsored by the Society of Actuaries and the American Academy of Actuaries), 2009 - 2012

Society of Actuaries Initiatives and Projects

- Program Chair for 2016 Investment Symposium
- SOA Policy Committee Chair, 2015
- Board partner for research initiatives, 2015
- Board liaison to Investment Section Council, 2013-2015
- Longevity pooling research, chair of project oversight group 2014-2015
- Investment Bootcamp for pension actuaries, 2013
- Investment Section Council, board partner 2012 - 2014
- Seminar on plan terminations, 2011 Annual Meeting
- Pension Section Council, elected member 2008 - 2010
- Retirement 20/20, 2006 - 2010
- Non-mortality decrement task force, 2002 - 2003

American Academy of Actuaries Initiatives and Issue Briefs

- Public Interest Committee's sustainability initiative, 2014
- Measuring Pension Obligations, 2013
- Retirement for the AGES, 2012 - 2013
- The 80% Funded Standard Myth, 2012

Enrolled Actuaries Meeting Pension Symposiums

- 2014, Retirement in the U.S. – Where Are We Headed? - panels on efficiency, alignment
- 2011, Retirement Security – A Call to Action, panel on retirement income