



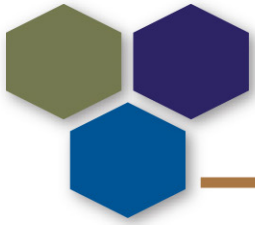
GRS and the Crossroads of Actuarial Science and Employee Benefits

R. Ryan Falls, FSA, FCA, EA, MAAA
April 19, 2013

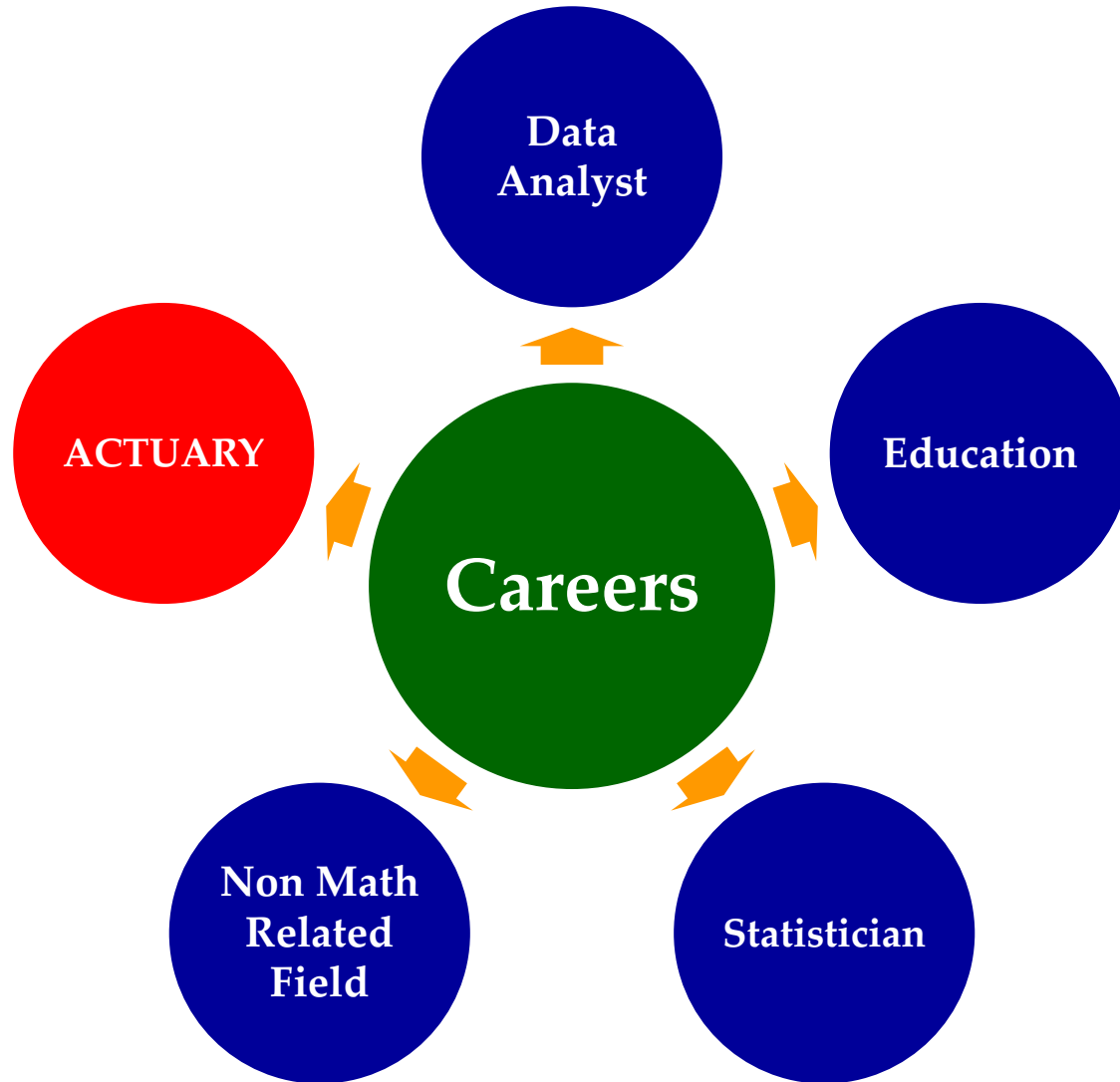
GRS

Gabriel Roeder Smith & Company
Consultants & Actuaries
www.gabrielroeder.com

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Careers in Math





What is an Actuary

Mathematician who:

- ◆ Evaluating the likelihood of future events using analytical and financial skills
- ◆ Perform calculations and projections which are the backbone of the Pension and Insurance Industries
- ◆ Assigns a price to future risk
- ◆ Designing creative ways to reduce the likelihood of undesirable events



The Perks of an Actuary

- ◆ High salary
- ◆ Professional prestige
- ◆ Quality work environment
- ◆ Challenging projects
- ◆ Low stress (Sometimes)



Persona of an Actuary

◆ Characteristics

- ▶ Passion of problem solving
- ▶ Enjoy being intellectually challenged
- ▶ Good communicator

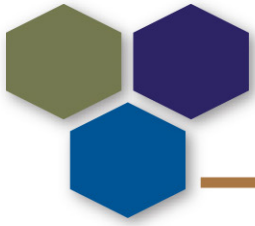
◆ Necessary Skills

- ▶ Reasoning ability
- ▶ Analytical skills
- ▶ Verbal and written communication
- ▶ Time management



Employers of Actuaries

- ◆ Insurance Companies
 - ▶ Medical
 - ▶ Life
 - ▶ Property and Casualty
- ◆ Benefit Consulting Companies
- ◆ Public Accounting Firms
- ◆ Government Agencies
 - ▶ Internal Revenue Service
 - ▶ Pension Benefit Guarantee Corporation (PBGC)



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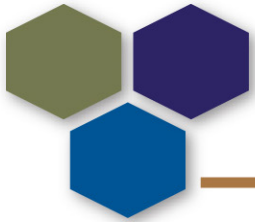


GRS and Public Retirement Systems

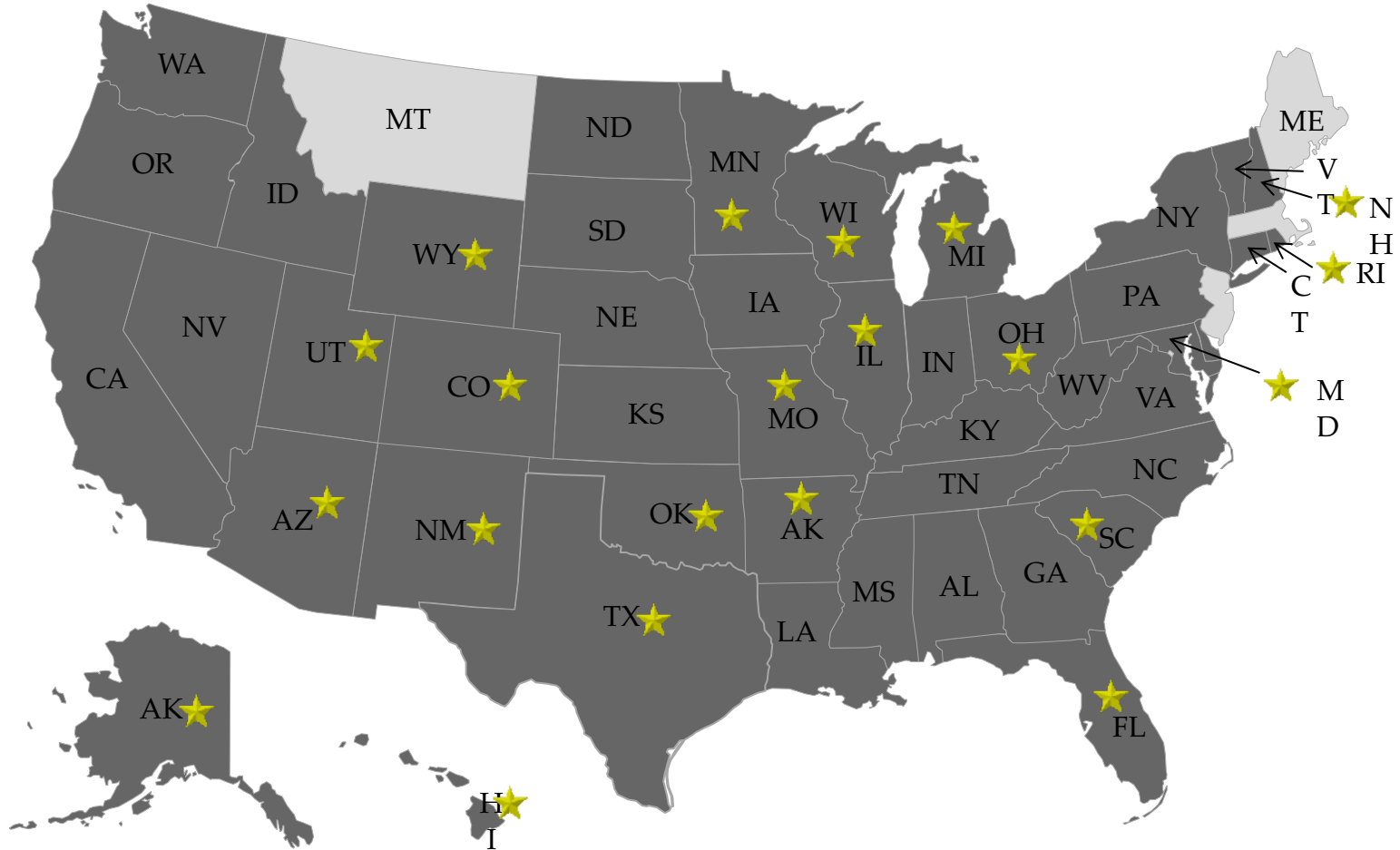
- ◆ National firm whose primary focus is the public sector
 - ▶ Started in 1938 – and still work with our first client
 - ▶ Serve 600+ public employee systems (Pension and OPEB)
 - ▶ Over 120 associates
 - ▶ Frequent speakers and active participants in public sector meetings and task forces
- ◆ GRS is headquartered in Southfield, Michigan and has offices in Colorado, Florida, Illinois, Minnesota, and Texas.

**GRS is the Premier Firm in the
Public Sector Consulting Business**

GRS



A National Perspective



★ States where GRS currently provides retained consulting services to statewide systems

■ States where GRS has provided actuarial and benefits consulting services



The GRS Approach

- ◆ We work to preserve defined benefit (DB) plans
 - ▶ Defined contribution (DC) plans have an important role, but
 - ▶ DB plans pay the *right* amount, to the *right* persons, beginning at the *right* time, for the *right* length of time, and do so at the *right* price
 - ▶ DB plans are worth preserving, with long-term sustainability
- ◆ We balance competing objectives
 - ▶ Financials – actuarially sound; costs that are affordable and stable; risk awareness
 - ▶ Benefits – adequate and competitive for retaining, recruiting, and for a respectable retirement income
- ◆ We are proactive
 - ▶ Ideas and trends
 - ▶ Examples later
- ◆ We listen; and we communicate (in jargon-free plain English)



Recent Headlines

Moody's: Pension liability's greater role in ratings could lead to downgrades

Grand Jury Blasts San Mateo County for Failing to Rein in Soaring Pension Costs

Total assets of major public pensions systems reach highest level since 2007 peak

Moody's Says New York's Pension Contribution Deferral Plan Has Long-Term Risks

California County Administrator's Pension Will Be \$423,644 a Year for Life

Detroit City Workers Worried About Pensions Amid Budget Cuts

Wyoming CIO on leave pending SEC insider-trading charges

Puerto Rico Governor Approves Pension Reform



Industry Challenges

◆ Corporate Retirement Plans

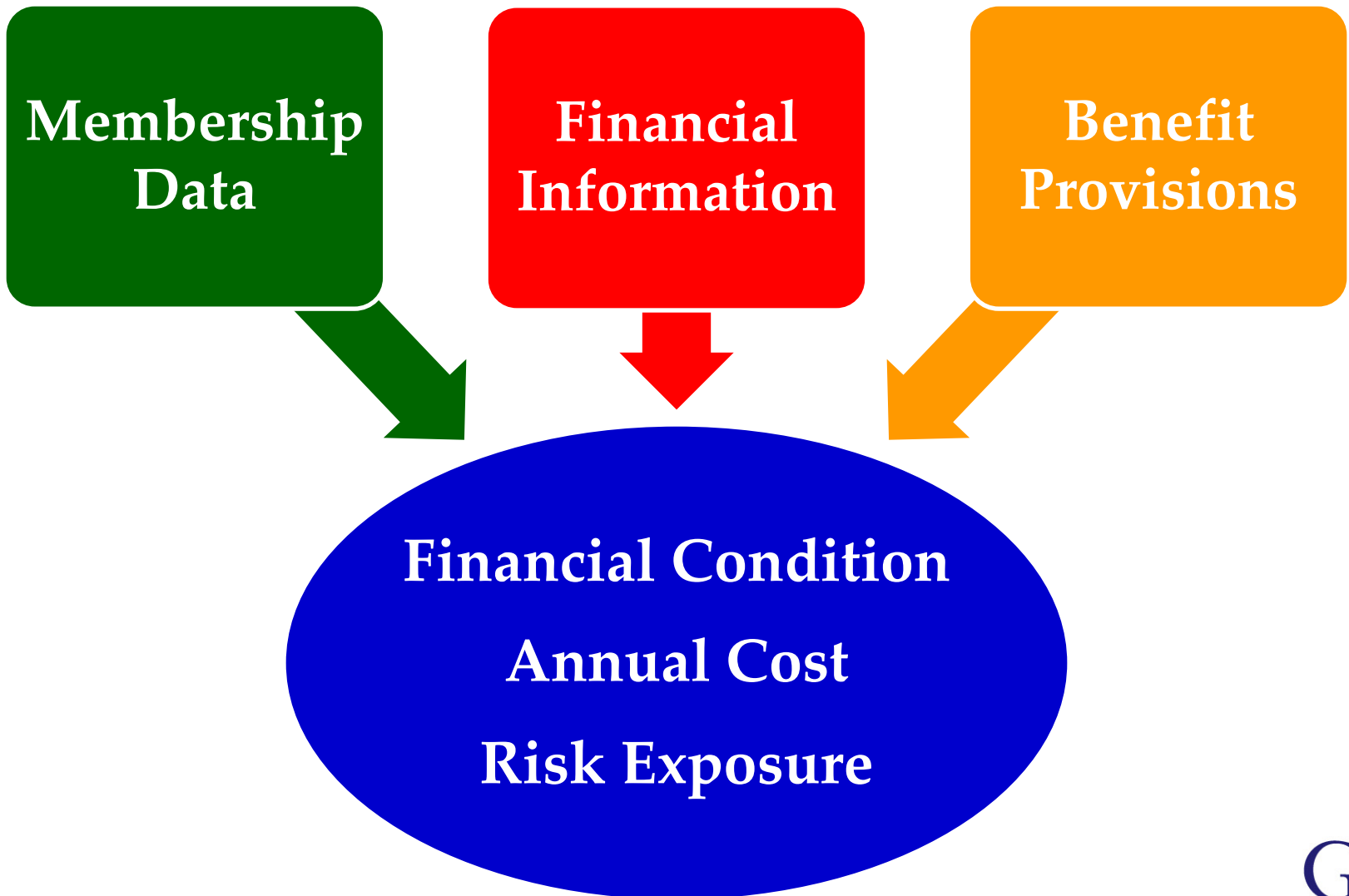
- ▶ Plan liabilities are based on future plan obligations discounted back to present time based on corporate bond rates
 - Extremely low interest rates = Extremely high liabilities!
- ▶ Publicly traded companies struggle with volatile pension liabilities on their balance sheet
- ▶ Employees value 401k over more valuation pension plan

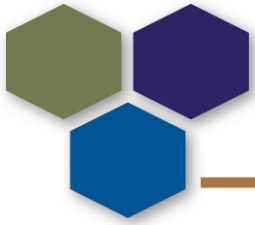
◆ Public Employee Retirement Plans

- ▶ Plan liabilities discounted back based on long-term portfolio returns (generally 7.5% to 8.0%)
- ▶ More transparency to citizens and media
 - Given the large number of plan members and dollars, can always find issue
- ▶ Level of benefits perceived to be too high
 - Almost all contribute themselves and many not in Social Security



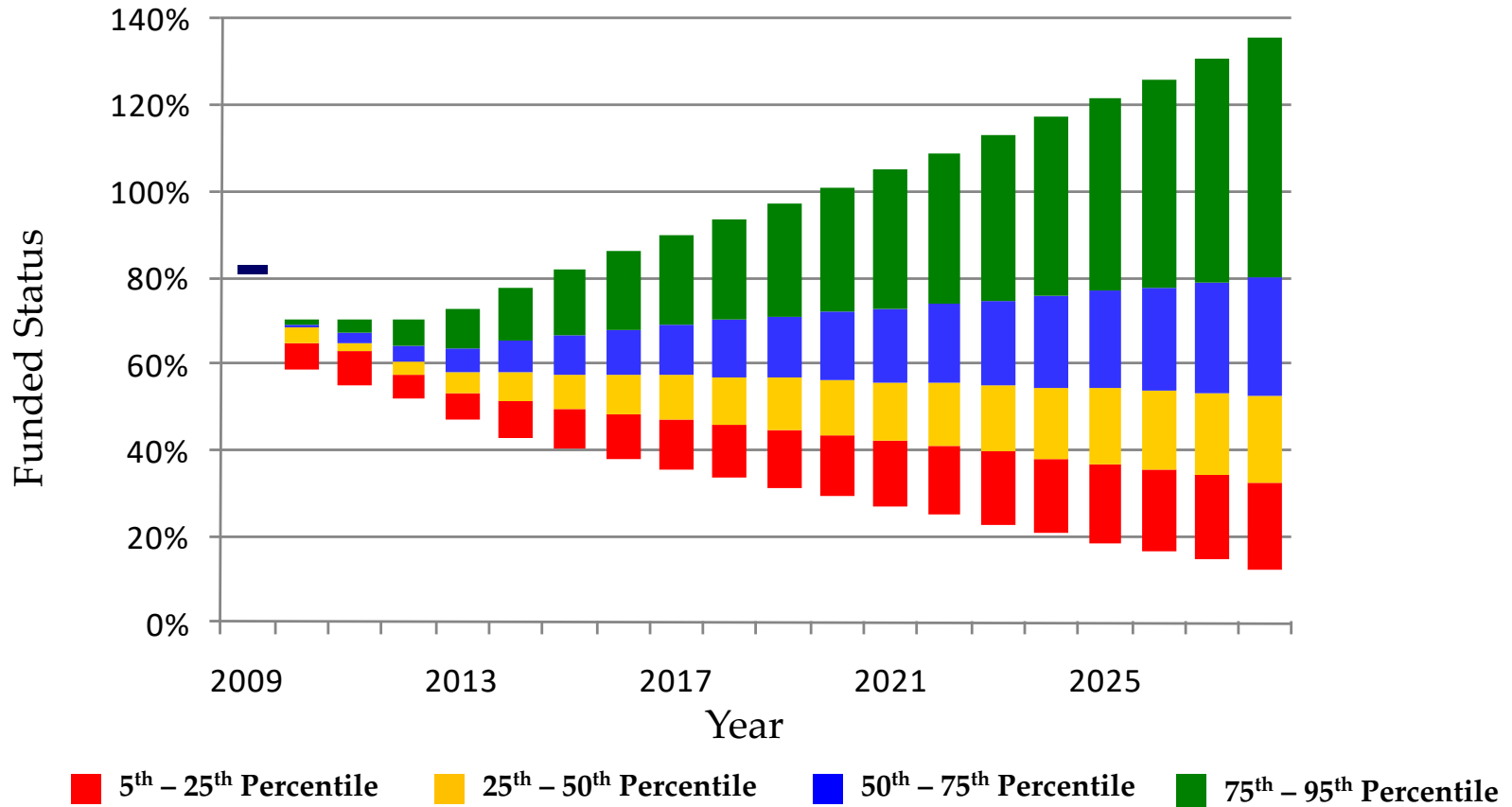
Pension Plan Valuation Process





Various Projection Techniques

Example use of Stochastic Projections



Assumptions

- Projected liabilities based on a plan with similar characteristics as Client XYZ
- Assumes employer contributions equal to 16.50% of covered payroll in all years
- Investment returns based 2010 capital market assumptions and Client XYZ 2009 target asset allocation



Closing Thoughts

- ◆ Your mathematics background will provide you an edge in the workforce
- ◆ Choose a career that involves something you are passionate about
- ◆ Continue learning and developing your skills