THE ACTUARIAL CAREER

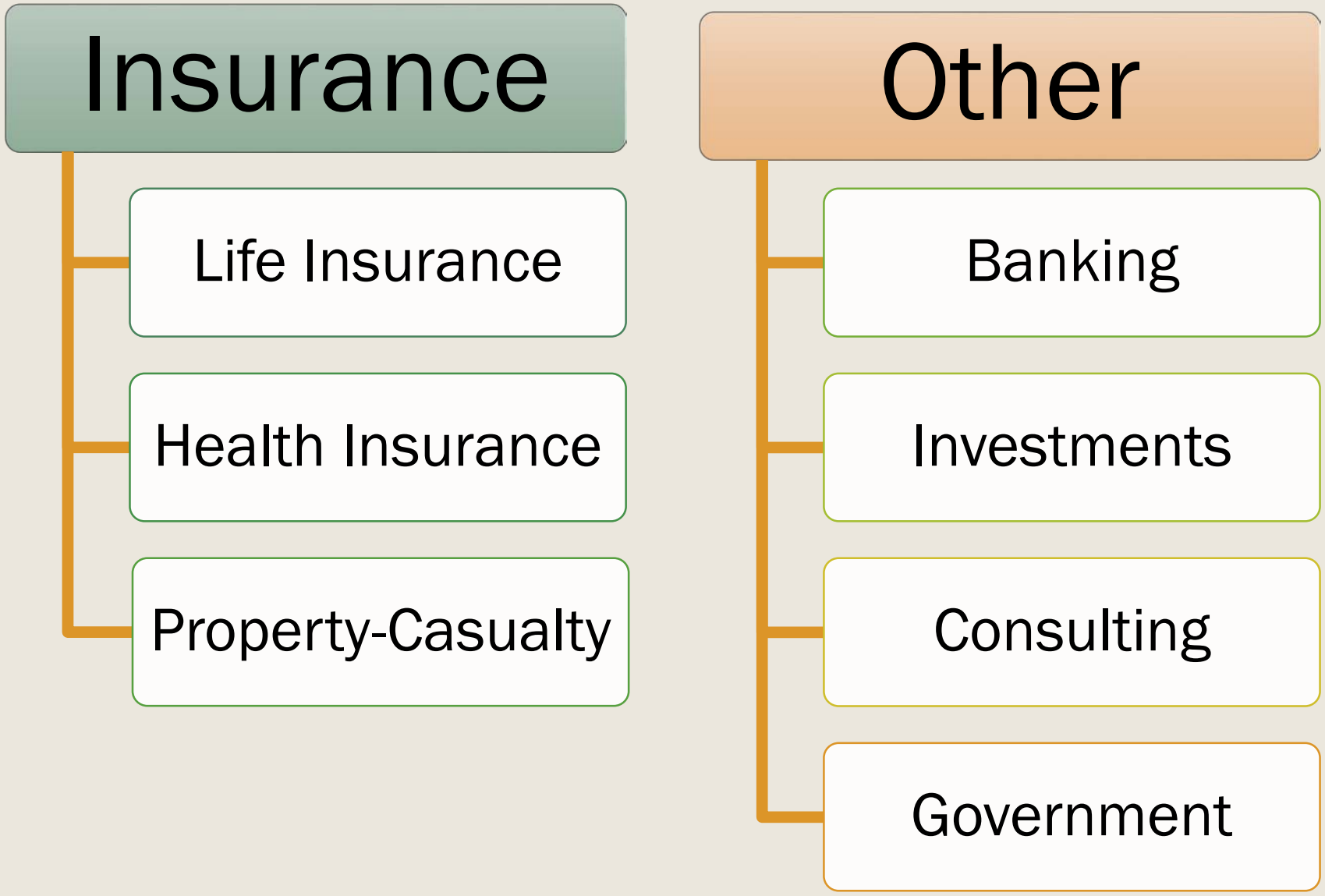
Kelly McManus, FSA, MAAA
John Hancock Financial Services

What Is An Actuary?

“Actuaries are highly sought-after professionals who develop and communicate solutions for complex financial issues.”

What Do Actuaries Do?

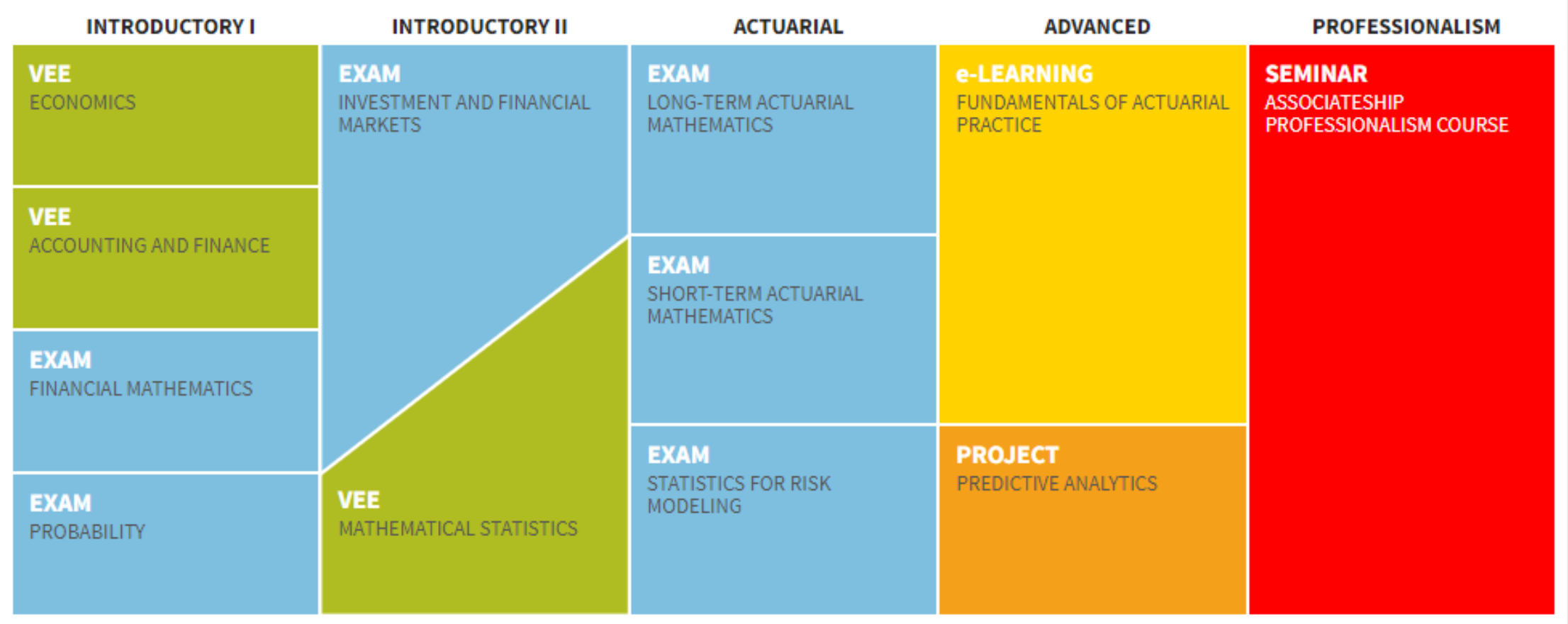
Where Do Actuaries Work?



- Life, Health, Annuities, General Insurance, Investments
- 11,851 Associates
- 17,310 Fellows

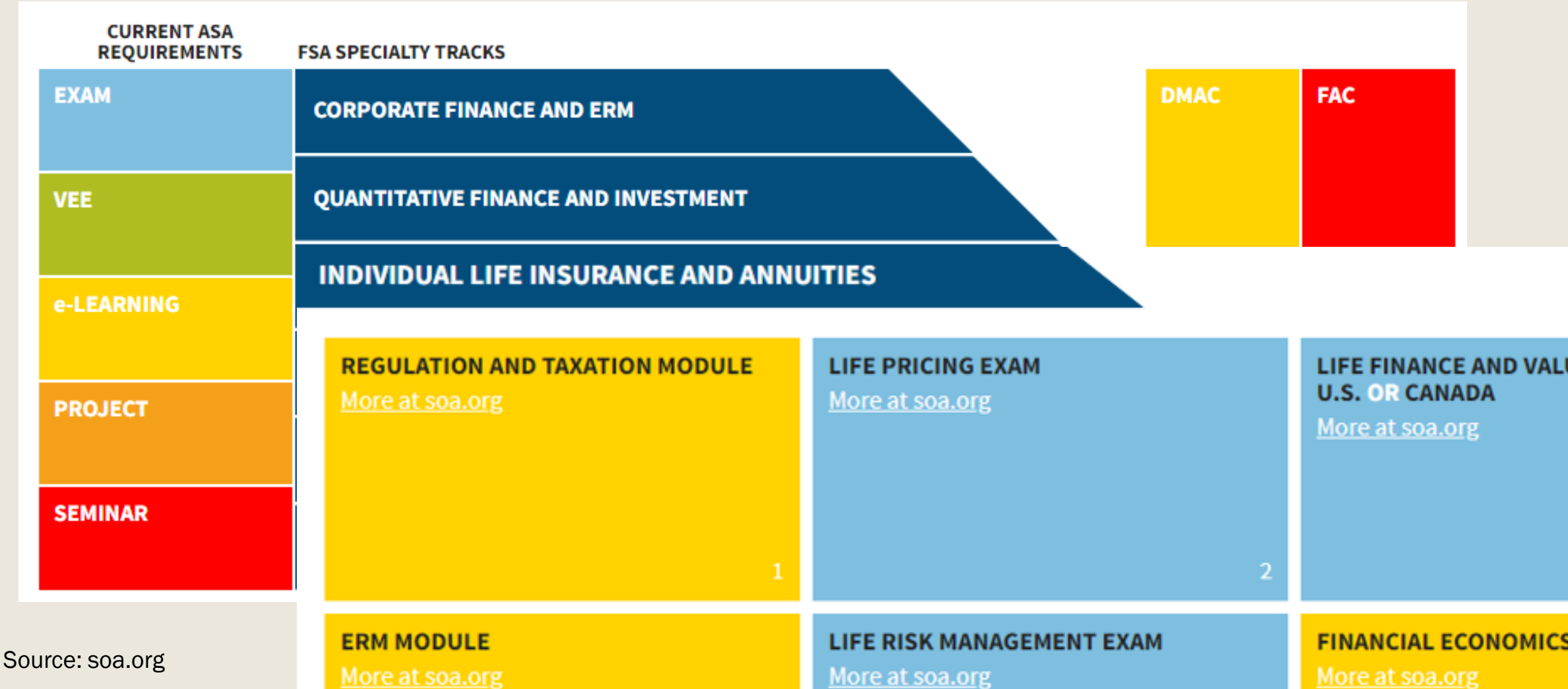
- Property and Casualty
- 2,206 Associates
- 4,709 Fellows

Becoming an Associate of the Society of Actuaries



Source: soa.org

Becoming a Fellow of the Society of Actuaries



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How to Become an Actuary

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STAM	Short-Term Actuarial Mathematics	Frequency and severity models, estimating parameters, aggregate models, credibility models, and basic methods of pricing and reserving for short-term insurance coverages.

How to Become an Actuary

Preliminary Exams

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LTAM	Long-Term Actuarial Mathematics	Theoretical basis of contingent payment models and the application of those models to insurance and other financial risks
STAM	Short-Term Actuarial Mathematics	Frequency and severity models, estimating parameters, aggregate models, credibility models, and basic methods of pricing and reserving for short-term insurance coverages.
SRM	Statistics for Risk Modeling	Introduction to methods and models for analyzing data. Regression models, time series models, principal components analysis, decision trees, and cluster analysis

Source: soa.org

A Day in the Life

7:30 AM: Wake up

8:30 AM: Commute to work

9:00 AM: Greet coworkers, catch up on people's evenings from the night before, and settle in to the workstation

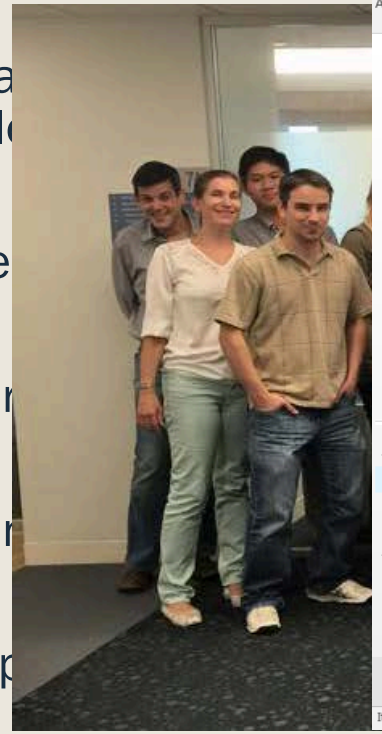
9:10 AM: Go through emails a accordingly. Glance at the cal out the day.

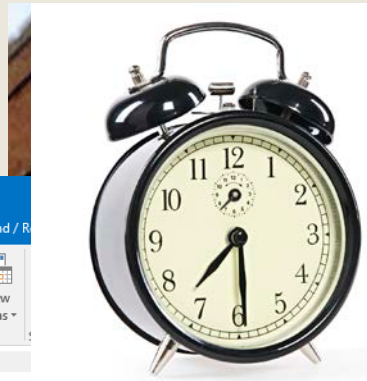
10:00 AM: Campus recruitme meeting

11:00 AM: Catch up with inter ask if they have questions on

11:30 AM: One on One meeti manager

12:00 PM: Lunch with a group





A Day in the Life

1:30 PM: Catch up on emails, send out agenda for my 3 p.m. meeting

2:00 PM: Get status updates from resources on their projects and tasks. Revise/update digital agenda accordingly.

3:00 PM: Meet with internal Audit

4:00 PM: Starbucks

5:30 PM: Gym

6:30 PM: Commute home

7:00 PM: Dinner

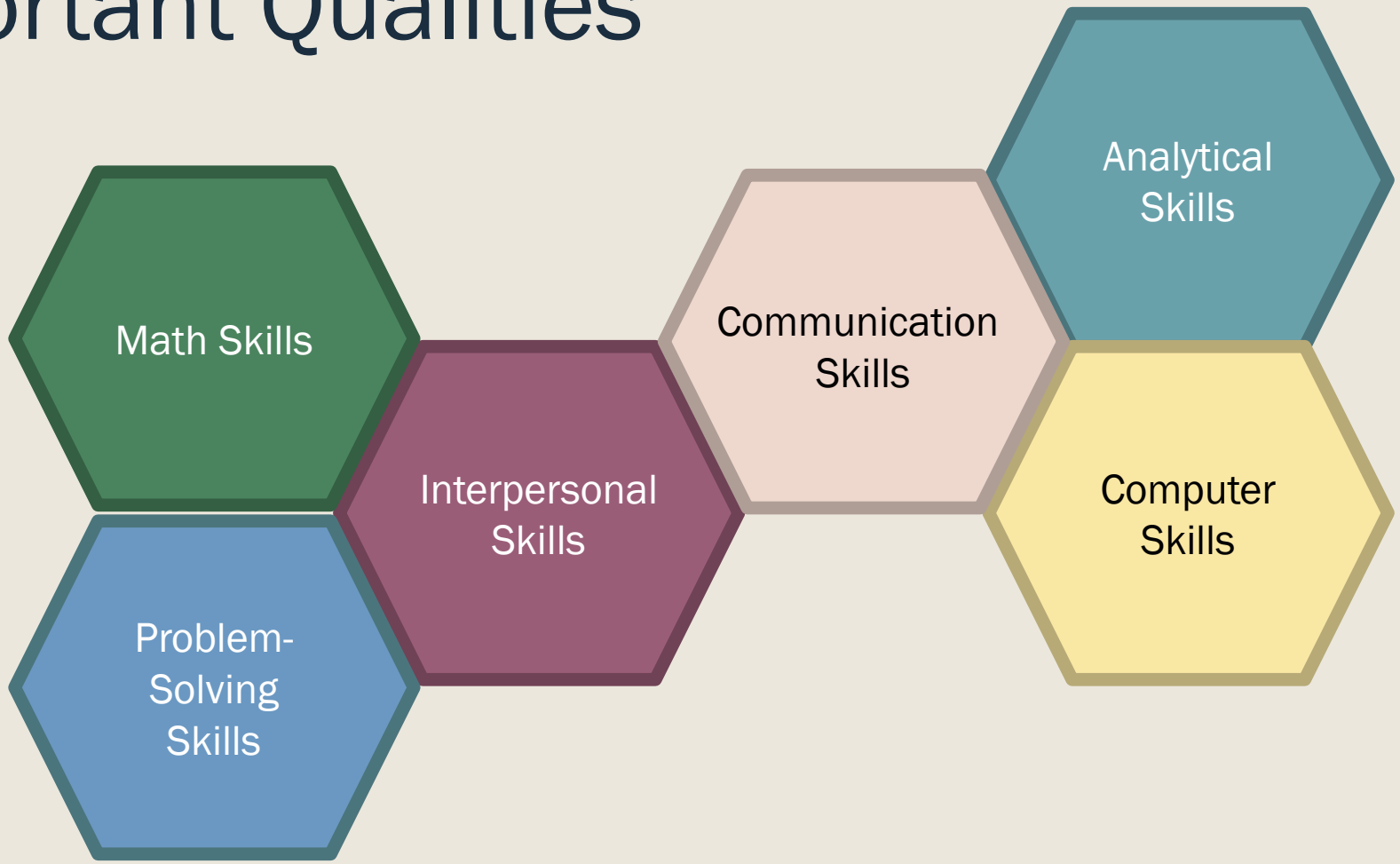
8:00 PM: Netflix

Quick Facts: Actuaries

2017 Median Pay	$101,560 per year $48.83 per hour
Typical Entry-Level Education	Bachelor's degree
On-the-job Training	Long-term on-the-job training
Number of Jobs, 2016	23,600
Job Outlook, 2016-26	22% (Much faster than average)
Employment Change, 2016-26	5,300

Source: bls.gov

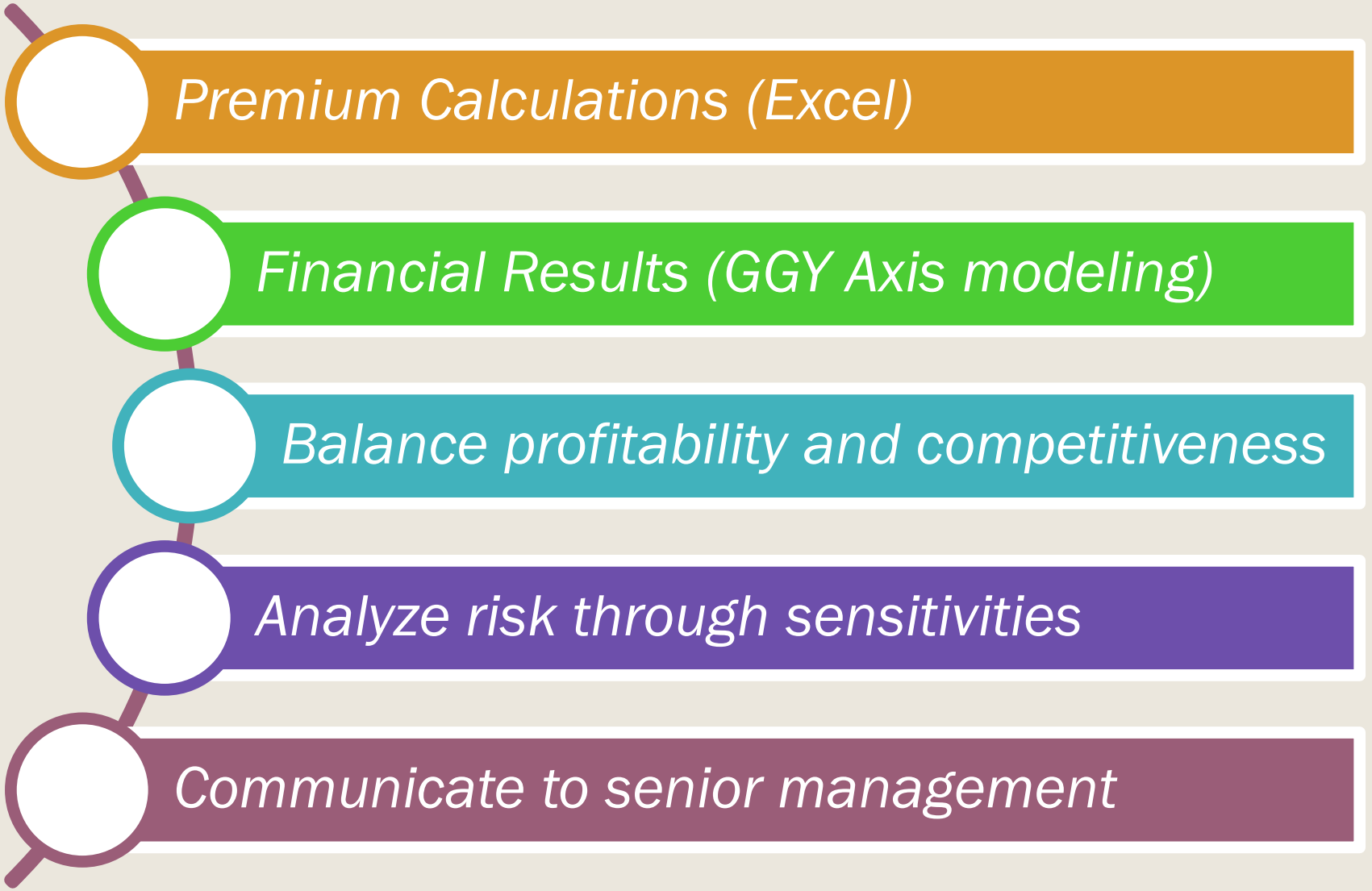
Important Qualities



Typical Student Programs

- Study Hours
- 2 Year rotations
- Exam raises
- Bonuses with credentials
- Seminars
- Exam Materials
- Celebrations

Insurance Product Pricing at John Hancock



Sample Problem

An insurance company determines that N, the number of claims received in a week, is a random variable with $P[N = n] = {}^{1}/_{2^{n+1}}$, where $n \geq 0$. The company also determines that the number of claims received in a given week is independent of the number of claims received in any other week. Determine the probability that exactly seven claims will be received during a given two week period.

(A) ${}^{1}/_{256}$

(B) ${}^{1}/_{128}$

(C) ${}^{7}/_{512}$

(D) ${}^{1}/_{64}$

(E) ${}^{1}/_{32}$

Solution: D

Let N_1 and N_2 denote the number of claims during weeks one and two, respectively. Then since N_1 and N_2 are independent,

$$\Pr[N_1 + N_2 = 7] = \sum_{n=0}^{7} \Pr[N_1 = n] \Pr[N_2 = 7 - n]$$

$$= \sum_{n=0}^{7} \left(\frac{1}{2^{n+1}}\right)\left(\frac{1}{2^{8-n}}\right)$$

$$= \sum_{n=0}^{7} \frac{1}{2^9}$$

$$= \frac{8}{2^9} = \frac{1}{2^6} = \frac{1}{64}$$

Questions

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