ACTUARIAL FIELDS WORKSHOP
GET TO KNOW THE CAREER PATHS AVAILABLE TO YOU
AGENDA

- Overview
- Insurance
- Consulting
- Insurance vs Consulting
- Non-Traditional Actuarial Roles
01.
Overview
WHAT IS AN ACTUARY?

- A business professional who uses statistical techniques to put price tags on risks by referring to historical data.

- Actuaries calculate the costs of uncertain future events that range from various natural disasters, such as tornados and hurricanes, to changes in life expectancy.
WHERE DO ACTUARIES WORK?

SOA Membership by Industry

- Not Listed: 25%
- Consulting: 24%
- Health: 10%
- Insurance: 28%
- Regulator/Govt: 3%
- Retired: 1%
- Technology: 2%
- Other: 3%
- Bank: 2%
- Academic: 2%
Actuaries work in insurance companies, consulting firms, accounting firms, governments, tech companies, and more.

**Major Lines of Business**
- Health and Benefits
- Property and Casualty
- Retirement
- Life
- Reinsurance

**Other Roles**
- Data Mining
- Catastrophe Modelling
- Investment Management
- Software Development
- Quantitative Analytics
WHY BECOME AN ACTUARY?

- Low Stress
- High Compensation
- Impactful work
- Low unemployment rate
- Balanced Lifestyle
- Employer-funded exam progression
  - No graduate school
- Steady career progression
  - Objective salary increase (with exams)
- High Job Security
  - No computer can replicate our work
  - Risk management is more important during economic recessions
There are two main actuarial organizations that govern different practices. Within each practice, actuaries can be divided into Insurance or Consulting:

- **Health**
- **Life**
- **Retirement**
- **Property and Casualty**
02.

Insurance
P&C actuaries help protect individuals and businesses against losses from automobile accidents, property damage, theft, and commercial liability. New technologies and developments in predictive analytics and modeling allow P&C actuaries to quantify and manage emerging risks such as self-driving cars, climate change, and ridesharing.
PROPERTY AND CASUALTY

- Home Insurance
- Personal & Commercial Auto
- Disaster Insurance
- Workers' Compensation
- Medical Malpractice

Logos of Liberty Mutual, Farmers Insurance, AAA, State Farm, and Allstate.
### QUESTIONS P&C ACTUARIES MIGHT ANSWER

<table>
<thead>
<tr>
<th>Pricing</th>
<th>Reserving</th>
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<tbody>
<tr>
<td>• How much more does the firm have to charge drivers who have a</td>
<td>• How much cash does the firm have to keep on-hand to pay for claims?</td>
</tr>
<tr>
<td>DUI conviction?</td>
<td>• How much can the firm use to invest for more profit?</td>
</tr>
<tr>
<td>• How much of a discount should the firm give drives whose cars have</td>
<td></td>
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<tr>
<td>more airbags?</td>
<td></td>
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Health actuaries help draft rates/premiums to cover cost of care for individuals and work with hospitals, medical device manufacturers, doctors, and pharmacists to make the whole health system work more efficiently.
HEALTH INSURANCE

Health Insurance
- Medical
- Vision
- Dental

Logos: Blue Shield, Aetna, Molina Healthcare, Kaiser Permanente, United Healthcare
## QUESTIONS HEALTH ACTUARIES MIGHT ANSWER

<table>
<thead>
<tr>
<th>Pricing &amp; Reserving</th>
<th>Healthcare Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>• How much more does the firm have to charge smokers?</td>
<td>• What happened to premiums when the Affordable Care Act required all people to buy health insurance?</td>
</tr>
<tr>
<td>• How much can the firm lower premiums if it invests the premiums they collect?</td>
<td>• What happens now that the individual mandate has been repealed?</td>
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</tbody>
</table>
Life actuaries use knowledge of capital markets, mortality, and financial concepts when developing life insurance and annuity policies for individuals and groups to ensure that families are financially secure in the event of the policyholder’s death. Modern life insurance actuaries are also involved in the investment of company assets to ensure solvency and strong long-term results.
Retirement actuaries work on companies’ PENSION PLANS and 401(k) BENEFITS to ensure they are attractive, competitive and sustainable.

Things that Retirement Actuaries consider:
- Age
- Time until retirement
- Mortality risk
- Interest rate
- Defined benefits versus defined contributions
### QUESTIONS FOR LIFE & RETIREMENT ACTUARIES

<table>
<thead>
<tr>
<th>Life</th>
<th>Retirement</th>
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</thead>
<tbody>
<tr>
<td>• How can life insurance products be adjusted to ensure attractive returns for policyholders in a low interest rate environment?</td>
<td>• Can a company’s pension program remain solvent when interest rates are low for a long period?</td>
</tr>
</tbody>
</table>
LIFE INSURANCE COMPANIES

- Pacific Life
- MetLife
- MassMutual
- Transamerica
- Prudential
03.
Consulting
Actuarial consultants advise clients on financial and insurance-related decisions for their companies.

- Must be great communicators
- Able to break down actuarial concepts
- Carry out benchmarking
- Common in Retirement and Health
# Lines of Business (LOBs)

<table>
<thead>
<tr>
<th>Lines of Business (LOBs)</th>
<th>Typical Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life</td>
<td>Clarify and analyze mortality rates</td>
</tr>
<tr>
<td>Health</td>
<td>Advise clients on the best healthcare plans for their company</td>
</tr>
<tr>
<td>Retirement</td>
<td>Help craft and price the best pension plan for their clients</td>
</tr>
<tr>
<td>Property &amp; Casualty (P&amp;C)</td>
<td>Create insurance products and provide strategic advice</td>
</tr>
</tbody>
</table>
## INSURANCE VS CONSULTING

<table>
<thead>
<tr>
<th>Insurance</th>
<th>Consulting</th>
</tr>
</thead>
<tbody>
<tr>
<td>More standard hours</td>
<td>Variable hours</td>
</tr>
<tr>
<td>Less travel</td>
<td>More travel</td>
</tr>
<tr>
<td>Less direct contact with clients</td>
<td>Work directly with clients often</td>
</tr>
<tr>
<td>Interact with various departments so you get a good idea of how the company works</td>
<td>Interact with various firms and clients so you get a better view of the industry as a whole (able to do benchmarking)</td>
</tr>
</tbody>
</table>
04. Non-Traditional Actuarial Roles
There are various risks and ways to maximize efficiency in every industry. While actuaries are most found in insurance companies, there are also actuaries in:

- Accounting/Auditing
- Government
- Banking/Finance
- Sports
- Meteorology
- Private corporations
- Teaching
- And many more!
There’s insurance for practically everything. For example, Lloyd’s of London has insured:

- Bruce Springsteen’s voice
- David Beckham’s legs
- Egon Ronay’s taste buds
- Alien abduction insurance for ~30000 policyholders
Even if you are an International Student, YOU HAVE OPTIONS and YOU CAN MAKE IT! 
Take charge of your own future and do your research 
Maximize the resources that are available to you 

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Basic Excel Workshop on Tuesday 11/8 in Kinsey Pavilion 1220B
Follow BAS on Social Media!

Like our page on Facebook for announcements, posts featuring actuaries, and more
https://www.facebook.com/bruinactuaries

Connect with us on LinkedIn and discover a network of fellow BAS members
https://www.linkedin.com/in/bruinactuaries/

Follow us on Instagram to stay updated with our events and workshops
https://www.instagram.com/bruinactuaries/
Questions?

Q&A