Case Studies Overview

- “Real life” predicaments
- Structure of session
  - Read the case together
  - Review polling question
  - Discuss response

- Disclaimers:
  - Exercise is for educational purposes only.
  - Opinions expressed do not represent the opinion of the respective employers or the Casualty Actuarial Society.
  - No authoritative guidance should be expected of the panelists.

To Trend or Not to Trend

- You've been working on a pricing analysis for weeks and have a steep severity trend leading to a +10% rate indication in your largest state. After a peer review, your boss wants you to get the indication filed right away.

- While reading an economics article in your free time, you see that a recent and temporary economic phenomenon may be causing your severity issue. It makes you think that maybe you should back off of your severity trend.

- Once back at work, you realize that it will take a week or two to put together the analysis to determine if the economics article and your loss experience are really tied. This would make you miss your filing deadline.
- Just doing some sensitivity testing, if you take the trend to 0% which you think the new info might support, the indication goes slightly negative.

Overfit Model

- You were recently hired by a small but growing primary insurer which writes mostly personal lines. In the past, class plan reviews have been done using traditional actuarial methods, but for the upcoming homeowners review the chief actuary has asked the pricing actuaries to use GLMs to calculate relativities.
- The homeowners class plan analysis was completed shortly before you joined the company, and your first assignment is to oversee the filing, approval, and implementation of the new class plan.
- You review the model output, as well as the goodness-of-fit and lift results. Much to your surprise, you learn that the modelers never separated the data into training and test sets, and that the model lift is being evaluated on the data that was used to build the model.

Overfit Model (continued)

- You do some work to analyze the model's performance on holdout data, and in your opinion the model actually underperforms the current rating structure.
- You discuss these concerns with your boss, who is not an actuary, but he is very dismissive of them. He informs you that much work has gone into the new rating program, and that deadlines have been repeatedly pushed back. At this point, he says, your job is to file what we have, not redo the modeling.
- You try to explain to your boss that, in your opinion, the company would be better off keeping its current rating plan in place than filing the proposed one. His response is that, after all of the work that has gone into this project, they would look very foolish if they didn't implement something.

The Reinsurance Account

- You are an actuarial student with a reinsurer. You have determined an indicated rate on line of 10 price for an important account. You know that the reinsurance rates are not regulated in your state and that no filing is required with the state insurance department.
- You boss reviews your work and tells you that he believes the market will bear a rate on line of 40 and he wants you to help support his position.
- What, if anything, should you do?

The Faulty Rating Plan Filing

- You are a recent ACAS with a major personal lines insurer. Several months ago, you filed a new rating plan with State X, and you are having difficulty obtaining approval of the changes from the regulator. You come across an approved competitor filing that implemented a similar rating plan. The filing uses what you believe to be faulty logic. Your boss says "if the logic works, use it!", and directs you to use that same logic to get your own filing approved.

- Do you use this faulty logic in your negotiations with the regulator? If not, do you point out the error in the competitor's logic to the regulator?

The Auto Rate Discounts

- You are an FCAS in charge of annually reviewing indicated discounts for your private passenger automobile rating plan at a major insurance company. This year, you calculated indicated discounts for two discounts to be 25% each.

- Recently, you attended a generalized linear modeling (GLM) seminar. After your return from the seminar, you used GLM methods and determined that one of the discounts should be 35% and the other should be 0%. Your company has been aggressively marketing the 25% discounts, and has invested a lot of marketing effort and expense.

- What, if anything, should you do?

The Proprietary Rating Plan

- Ida Guest, FCAS and MAAA, worked for the Prestigious Insurance Company for 10 years and become a company officer. Ida leaves the company and goes into consulting. Ida has decided to start her own, single practitioner, consulting firm. Her resignation is effective on July 1.

- Just prior to leaving, Ida worked on the development of a new, very innovative automobile rating plan that Prestigious plans to market very aggressively to significant competitive advantage. Millions of dollars have already been spent on Prestigious' advertising campaign, which is ready to kick-off on August 1, just ahead of the release of the new model year.

- On July 15, Ida publishes a paper that explains, in great detail, the fine points of Prestigious' new rating plan. She is selling these reports for $25,000 each and offers her services to companies who would like to make similar filings. She took no work papers with her when she resigned from Prestigious. She recreated all the material in her paper from memory. She has a photographic memory.

- Is Ida in trouble?

The Coastal Rate Increase

- You are the chief actuary at the Insurance Department in the State of Coastal. A major personal lines insurer made a filing that would result in rate increases of 200% along the coastline. After reviewing the data, you agree that the rate increases are justified.

- The Insurance Commissioner tells you to disapprove the increase because it would result in rates that are not affordable. Your projections show that without the full 200% rate increase, the insurer may go bankrupt within two years. You have shared this information with the Commissioner, but he still refuses to agree to the large rate increase.

- What, if anything, should you do?