



STUDENT RESEARCH
Case Study Challenge

QUESTIONS AND ANSWERS
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What are the expected benefits for participating students?

Participating in the Challenge offers a range of valuable benefits offering students a unique and rewarding experience that will enhance their academic and professional growth. Some of the expected benefits include:

- Practical application of math, statistics, and logic skills
- Skill development in critical thinking and problem-solving, including developing an approach to producing a solution
- Exposure to actuarial thinking for career readiness
- Business writing skills
- Networking opportunities and an enhanced resume
- Personal growth and increased confidence
- Prestige and academic recognition
- Showcasing practical skills to potential employers
- Monetary awards and recognition for winning teams and their universities

By asking students to analyze and communicate a topic they have likely not seen in the classroom, the Challenge helps students develop skills that are critical to their success as an actuary and in their future career in the field. Overall, it's an enriching experience for academic and professional growth meant to be highly engaging and rewarding.

What skills do you expect students to use and improve?

The Challenge focuses on skills that actuaries in business will need. Solving an open-ended case study in a competitive setting is new for most participants and requires:

- Understanding a nuanced problem
- Generating one or more reasonable lines of inquiry
- Making sense of and manipulating a dataset
- Conducting external research to put some realistic guardrails on the solution
- Exercising judgment beyond merely interpreting raw mathematical and statistical output from analyses
- Summarizing everything succinctly in a report accessible to an executive audience with a wide range of professional backgrounds

These skills build on the mathematical and statistical analyses that students have developed in the classroom.

Why submissions from undergraduate and graduate students judged together?

While the SOA Research Institute does not keep statistics on the number of submissions from undergraduate vs. graduate students, the overwhelming majority of finalists teams are undergraduate students. The judges know this because at the start of their presentations, finalist teams introduce themselves and include their year at university. In addition, many actuarial science graduate students are taking the same actuarial science courses as undergraduate students—their undergraduate degree was in a different field or their undergraduate university did not have an actuarial science program. The first-place team in 2018 were graduate students, but placing teams in 2019–2023 Challenges were all undergraduate students.

How are cases selected for the Challenge?

A team of 15–20 volunteers from around the world who are actuarial science professors¹ or actuaries from industry starts by brainstorming potential case study topics. The team creates a Challenge that will both challenge the students and expose them to topics they will likely not have considered in the classroom. Challenge topics tend to have the following characteristics:

- Is fairly new to the actuarial field. There is enough available information that students can research it.
- Is not yet an established actuarial practice, which challenges students to find unique solutions.
- Requires students to apply actuarial mathematics to “real world” problems that have multiple dimensions.
- Provides students an opportunity for students to show innovation.
- Social relevance to students.
- Has sufficient Challenge-provided data to allow students to analyze a large dataset.
- Unlikely that a student may have previously encountered the problem in an internship or other case study challenge.

What is the role of a faculty advisor?

A faculty advisor serves several purposes:

- The SOA Research Institute may consult faculty advisors to confirm that all members of a team are students at the university.
- Universities of teams that place first, second, or third in the Challenge receive a grant. The SOA Research Institute needs a university contact to enable payment of the grant.
- The SOA Research Institute encourages student teams to consult a faculty advisor as they think through how to approach the Challenge. Faculty advisors are not required to work with students in this capacity. Regardless of whether participating students consult a faculty advisor, the student team’s work must be from only the team.

May students ask questions about the case study challenge as they are preparing their submission?

SOA Research Institute strives to ensure that all participating teams are provided the same information. There fore, with two exceptions, questions to the SOA about preparing submissions will not be answered. The exceptions are:

- If students find inconsistent deadlines in the materials
- If students are unable to download or open materials

The SOA Research Institute encourages asking questions if one of the situations above arises. For all other questions, students are encouraged to consult a faculty advisor. Please remember that the work submitted by a student team must be from only the team.

¹ Judges who are actuarial science professors are not allowed to be faculty advisors for a student team.

Why does the Challenge ask for so much work and allow limited space to present and explain it?

The Challenge asks students to prepare their work for a business audience because that is the environment in which most actuaries work. The Challenge reproduces how businesses operate—businesspeople are extremely busy, must juggle many responsibilities, and need to have complex problems and solutions communicated in a manner that lets them understand key results and recommendations quickly.

The Challenge attempts to reproduce the work environment of an actuary by setting a timeline that is ambitious. However, the deadline by which a student team has to understand, analyze, and respond to a Challenge has been set to allow sufficient time for student teams to present results, recommendations, strengths, and weaknesses of the research and analysis. The timeline is created to reflect that students also have other demands on their time, such as classroom work and taking actuarial exams.

The Challenge also tries to imitate an actuary's work environment by requiring students to present results, recommendations, strengths, and weaknesses of the research succinctly. The amount of space allowed students is also designed to recognize that students are learning these communication skills.

What aspects do the judges value and pay the most attention to when judging submissions?

The criteria are outlined in the case study. Some of the criteria may vary across years, so it is important to read that section of the case study carefully. While specific criteria may vary from year to year, the focus is to judge how well students have analyzed the problem and communicated their results. The judges summarize the criteria into six categories, which have historically been given equal weight:

- Clear and complete responses
- Thorough analysis and secondary research
- Creative and strategic recommendations
- Documentation of limitations and assumptions
- External research
- Communication: organization, form, clarity, and cohesiveness appropriate for an audience of business executives of varying professional backgrounds

Winning submissions typically demonstrate a well-reasoned and accessible approach supported by insightful analysis and supporting evidence.

What is the Challenge judging structure?

The judges are a team of approximately 15 volunteers from around the world who are actuaries from industry or actuarial science professors.² Judging is comprised of three rounds:

1. Round 1: Judges are split into small groups, and submitted papers are split into the same number of groups. Each judging group reviews the papers in its group against the criteria outlined in the case study and advances to the semifinals the top approximately 25% of papers. Starting with the 2024 Challenge, to ensure more globally diverse semifinal papers, at least one paper from each of the following three geographic regions will be included in the roughly 25% of all submissions that advance to the semifinals:

² Judges are not allowed to be faculty advisors for a participating student team.

- a. US, Canada, Europe, Oceania
 - b. East Asia and Pacific³
 - c. South Asia,⁴ Middle East, Africa, Latin America
2. Semifinals: All judges review all semifinalist papers against the criteria outlined in the case study. Scores are compiled and analyzed using multiple approaches and techniques, and the top 6, possibly 7, papers advance to the finals. There are no geographical divisions in the semifinal round.
3. Finals: Finalist teams make a 15-minute virtual presentation of their work to the team of judges, and the judges ask questions for 15 minutes. All judges review all presentations, including responses to questions, and rank their overall results. The judges' rankings are compiled and analyzed using multiple approaches and techniques, and the top 3 placing teams are identified and announced.

Do non-native English-speaking participants have a disadvantage in the challenge?

The judges (some of whom are not native English speakers) understand that requiring all reports and presentations in English may create some additional challenges for non-native English speakers. The judges' focus is on the student team's ability to pull together information and analysis from many sources and communicate results in an organized, logical, and concise manner. Clear storytelling supported by meaningful visuals and tables often convey the key points better than voluminous text.

It is important to note that many prior years' finalist teams were not native English speakers.

The judges also recognize that speaking a non-native language requires an additional set of skills than does reading and writing a non-native language. For the finalist presentations, teams do need at least one team member who is able to speak English.

Changes to the judging structure beginning with the 2024 Challenge Judging are intended to ensure more globally diverse semifinalist teams.

What advice do you have for participants whose native language is not English?

We have the same advice for non-native English speakers as for native English speakers: address each deliverable in the body of your report by summarizing your recommendations and the main points of your supporting analysis and rationale in an organized, straightforward, logical, and concise manner. Reserve most formulas and detailed analyses or discussions for an appendix.

Teams that advance to the finals will need to have at least one team member who is able to speak English or bring to the presentation another student who will deliver the prepared remarks and act as an interpreter during questions and answers. However, if the team wins an award, an interpreter who was not involved in the preparation of the report would not be eligible to receive the award.

If your team advances to the finals and one or more of your team members has difficulty speaking English, we suggest that you inform the judges at the start of your presentation. During questions and answers, the judges will also understand if you need to consult among your team in your native language before responding in English.

³ Using the World Bank's regional definitions, the following countries are included in East Asia and Pacific: Cambodia, China, Indonesia, Korea, Laos, Malaysia, Mongolia, Myanmar, Pacific Islands, Papua New Guinea, Philippines, Singapore, Thailand, Timor-Leste, and Vietnam

⁴ Using the World Bank's regional definitions, the following countries are included in South Asia: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka

How many teams participate whose native language is not English?

Every year students from all over the world participate in the Challenge. Many participating teams are not native English speakers, *including* students at universities in English-speaking countries. Many winning teams have been comprised of some or all team members who are not native English speakers. While the SOA has not kept records of participating students who are not native English speakers, the following table shows the countries/territories of universities from which teams have participated from 2019 through 2023, as well as the number of teams that advanced to semifinalists and then to finalists.

Country/ Territory	Number of Participating Teams	Advanced to Semifinals	Advanced to Finals
USA	90	29	11
Australia	32	11	5
China, Mainland	44	13	4
Indonesia	14	2	1
Hong Kong SAR	3	1	1
Portugal	1	1	1
Singapore	1	1	1
UK	5	2	0
Egypt	7	1	0
Malaysia	4	1	0
South Korea	1	1	0
Canada	12	0	0
Lebanon	3	0	0
Mexico	2	0	0
India	1	0	0
Ireland	1	0	0
Kenya	1	0	0
Thailand	1	0	0
	223	63	24

About The Society of Actuaries Research Institute

Serving as the research arm of the Society of Actuaries (SOA), the SOA Research Institute provides objective, data-driven research bringing together tried and true practices and future-focused approaches to address societal challenges and your business needs. The Institute provides trusted knowledge, extensive experience and new technologies to help effectively identify, predict and manage risks.

Representing the thousands of actuaries who help conduct critical research, the SOA Research Institute provides clarity and solutions on risks and societal challenges. The Institute connects actuaries, academics, employers, the insurance industry, regulators, research partners, foundations and research institutions, sponsors and non-governmental organizations, building an effective network which provides support, knowledge and expertise regarding the management of risk to benefit the industry and the public.

Managed by experienced actuaries and research experts from a broad range of industries, the SOA Research Institute creates, funds, develops and distributes research to elevate actuaries as leaders in measuring and managing risk. These efforts include studies, essay collections, webcasts, research papers, survey reports, and original research on topics impacting society.

Harnessing its peer-reviewed research, leading-edge technologies, new data tools and innovative practices, the Institute seeks to understand the underlying causes of risk and the possible outcomes. The Institute develops objective research spanning a variety of topics with its [strategic research programs](#): aging and retirement; actuarial innovation and technology; mortality and longevity; diversity, equity and inclusion; health care cost trends; and catastrophe and climate risk. The Institute has a large volume of [topical research available](#), including an expanding collection of international and market-specific research, experience studies, models and timely research.

Society of Actuaries Research Institute
475 N. Martingale Road, Suite 600
Schaumburg, Illinois 60173
www.SOA.org