



Beyond Exams: Exploring Research Opportunities for Small Actuarial Programs

Jiacheng Cai, Salisbury University

Zhixin Wu, DePauw University

2025 Actuarial Research Conference - Toronto

Salisbury University (SU)

- Eastern Shore of Maryland, Rural Area
- Public Teaching School with 6000+ students

Actuarial Science Program at SU

- Established in 2010 by a retired actuary and two stat faculty. Took over by Cai (math/stat) in 2019.
- 10 - 25 students in total.
- SOA UCAP - IC in 2019.
- Curriculum Development for the past 6 years to cover 5 SOA Exams and All VEE.



DePauw University (DPU)

- Located in Greencastle, IN, 45 mins from Indianapolis
- Liberal Art College with 1800 students

Actuarial Science & Risk Management Program at DPU

- Awarded the CAS University Program Recognition Silver Level in spring 2025 and in SOA UCAP-IC since 2015
- 35 students in total and 50+ actuarial alumni
- Housed in the Math Dept, and listed as one of the four majors in our new Business School
- Expanded to include the Risk Management Curriculum in the past 2 years

Barriers to Research Engagement

Limited faculty bandwidth

Lack of institutional support

Fewer industry connections

Lack of real-world projects/data

**Student unfamiliarity with research
methods**



The Power of Case Study Competitions

Accessible
and practical

Real-world
topics

Structured
and guided



CAS Student Case Competition

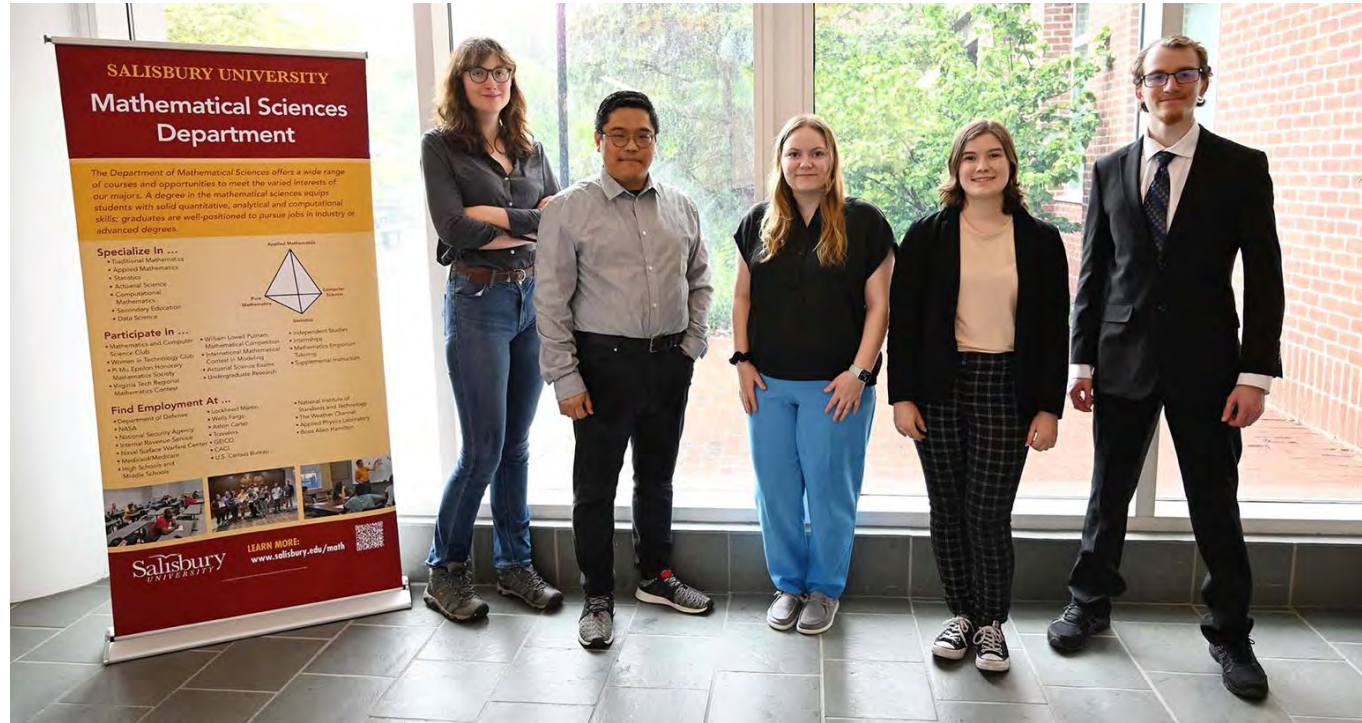
CAS provides comprehensive support for student case competitions on various topics, including:

- Facilitator University Guide
- Promotional Flyer Template
- Introductory Presentation
- Case Study Details
- Judging Rubrics and Suggested Solutions
- Grading Sheet
- Award Certificate

Topics including Warranty, Data Visualization, HomeOwner Insurance, Workers Comp, Predictive Modeling, and a new case study Reinsurance available soon.

2024 SOA Student Research Case Study Challenge

- **Objective:** Apply actuarial skills to a real-world business problem in a team setting
- **Case Study Theme:**
 - Life insurer **SuperLife** seeks to improve policyholder mortality
 - Focus on designing **health incentive programs** to pair with long-term life insurance products
- **Project Goals:**
 - Incentivize healthy behaviors
 - Decrease expected mortality
 - Increase life insurance sales
 - Improve product marketability
 - Add economic value to SuperLife
- **2024 Winners:**
 -  **University of New South Wales (\$5,000)**
 -  **University of New South Wales (\$3,000)**
 -  **Salisbury University (USA) (\$2,000)**
- **Tasks for Teams:**
 - Analyze data and medical research
 - Develop actuarial models and health incentive strategies
 - Present findings in a written report for executive-level stakeholders



2024 SOA Student Research Case Study 3rd Place Winner
Salisbury University

Global Insurance Symposium Student Case Study Competition

- **Objective:**
 - Analyze industry growth trends
 - Propose strategies for insurers to leverage these trends
- **Case Study Question:**
 - *What trends present the greatest opportunities for growth in the insurance industry, and how can insurers effectively leverage these trends?*
- **Submission Format:**
 - Video presentation of case study
- Award top 3 teams (\$1,500, \$1,000, \$750)

2025 Spencer-RIMS Student Risk Management Challenge

- **Objective:**
 - Analyze a real-world risk scenario
 - Develop a comprehensive 10 page Risk Management Report for the first round submission
 - Present findings to a panel of industry professionals in the finalist competition
- **2025 Case Study Focus:**
 - City of Huntington, West Virginia (USA)
 - Identify top 3-5 risks that the city faces due to climate change
 - Advise the city on how to protect itself against these risks, and describe how to implement your suggested solutions.
- **Top 8 Teams:**
 - Sponsored to present at **RISKWORLD Conference** in Chicago
 - Finalists presented live and answered questions from a professional judging panel
- **2025 Winners:**
 -  **Team Loss Aversion** – University of Wisconsin-Madison (\$10,000)
 -  **Team Forward Thinkers** – DePauw University (\$7,500)
 -  **The Mamba Minds** – IIRM Hyderabad (\$5,000)



Spencer-RIMS Student Risk Management Challenge 2nd Place Winner
DePauw University

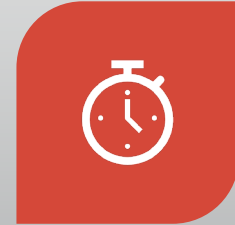
Equipping Educators for Research Mentorship



**Developing
Guiding Rubrics**



**Fostering
Interdisciplinary
collaboration**



**Time Management
Tips for Mentoring
Teams**

Curriculum Integration



Prerequisite Courses (actuarial science, risk management, data science, statistics, programming)



Senior seminar or capstone tied to a case competition



Embedding case study to some statistics/data science courses



Research bootcamp or workshops

INTERNAL:

**STUDENT ORGANIZATIONS,
COURSE CREDIT, MENTORSHIP**

EXTERNAL:

**INDUSTRY SPONSORS,
ACTUARIAL SOCIETIES, RISK
MANAGEMENT SOCIETIES**

**Making It
Work with
Limited
Resources**



**Kick-off Meeting
with Sample
Cases**



**Assign Student
Leaders and
Roles**



**Iterative Drafts
+ Feedback
Cycles**



**Presentations
with External
Judges**



Implementation: Timeline and Strategy

Student Growth Through Research



Engagement and
Motivation



Skill Development
(Communication,
Writing,
Collaboration,
analytics)



Professional
Readiness
(Internships, Job
Offers)



Alumni Success
Stories

Future Plans and Model for Others



Institutionalize competitions
within curriculum



Create peer mentorship
cycles



Interdisciplinary
collaborations



Questions ??

Email:

jxcai@salisbury.edu

zhixinwu@depauw.edu