



2019 **ANNUAL
MEETING**
& EXHIBIT

October 27-30
Toronto, Canada

Session 018: How Industry and Higher Education Can Work Together to Benefit the Actuarial Profession

[SOA Antitrust Compliance Guidelines](#)

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Academic-Industry Cooperation

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Session 18: October 28th 2019



SOCIETY OF ACTUARIES

Antitrust Compliance Guidelines

Active participation in the Society of Actuaries is an important aspect of membership. While the positive contributions of professional societies and associations are well-recognized and encouraged, association activities are vulnerable to close antitrust scrutiny. By their very nature, associations bring together industry competitors and other market participants.

The United States antitrust laws aim to protect consumers by preserving the free economy and prohibiting anti-competitive business practices; they promote competition. There are both state and federal antitrust laws, although state antitrust laws closely follow federal law. The Sherman Act, is the primary U.S. antitrust law pertaining to association activities. The Sherman Act prohibits every contract, combination or conspiracy that places an unreasonable restraint on trade. There are, however, some activities that are illegal under all circumstances, such as price fixing, market allocation and collusive bidding.

There is no safe harbor under the antitrust law for professional association activities. Therefore, association meeting participants should refrain from discussing any activity that could potentially be construed as having an anti-competitive effect. Discussions relating to product or service pricing, market allocations, membership restrictions, product standardization or other conditions on trade could arguably be perceived as a restraint on trade and may expose the SOA and its members to antitrust enforcement procedures.

While participating in all SOA in person meetings, webinars, teleconferences or side discussions, you should avoid discussing competitively sensitive information with competitors and follow these guidelines:

- **Do not** discuss prices for services or products or anything else that might affect prices
- **Do not** discuss what you or other entities plan to do in a particular geographic or product markets or with particular customers.
- **Do not** speak on behalf of the SOA or any of its committees unless specifically authorized to do so.
- **Do** leave a meeting where any anticompetitive pricing or market allocation discussion occurs.
- **Do** alert SOA staff and/or legal counsel to any concerning discussions
- **Do** consult with legal counsel before raising any matter or making a statement that may involve competitively sensitive information.

Adherence to these guidelines involves not only avoidance of antitrust violations, but avoidance of behavior which might be so construed. These guidelines only provide an overview of prohibited activities. SOA legal counsel reviews meeting agenda and materials as deemed appropriate and any discussion that departs from the formal agenda should be scrutinized carefully. Antitrust compliance is everyone's responsibility; however, please seek legal counsel if you have any questions or concerns.

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Academic Industry Cooperation



2019 Society of Actuaries Annual Meeting

Panelists:



Patrick Brockett, PhD
Ian Duncan, FSA, MAAA
Runhuan Feng, PhD, FSA, CERA

Patrick Brockett

- Gus S. Wortham Chair in Risk Management and Insurance, Director of Center for Risk management and Insurance, Professor of Information, Risk and Operations Management. University of Texas at Austin
- Board of Directors, Texas Property and Casualty Guaranty Association
- Editor-in-chief, North American Actuarial Journal
- Namesake of the Patrick Brockett & Arnold Shapiro Actuarial Research Award, American Risk and Insurance Association



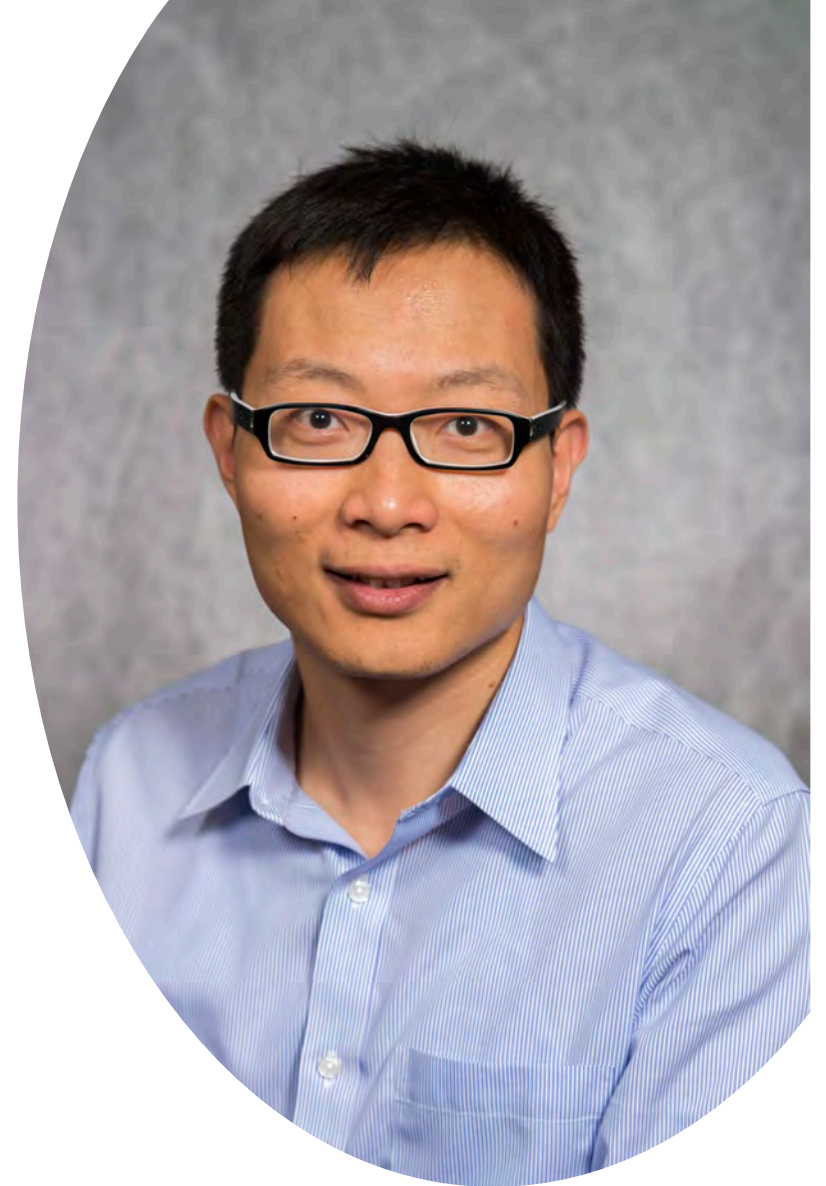


Ian Duncan

- Fellow, Institute of Actuaries (London)
- Fellow, Canadian Institute of Actuaries
- Fellow, Society of Actuaries (US)
- Fellow, Conference of Consulting Actuaries
- Certified Specialist in Predictive Analytics (CAS)
- Member of the American Actuarial Association
- Adjunct Professor at the University of California – Santa Barbara
- Founder and President, Santa Barbara Actuaries Inc.

Runhuan Feng

- Associate Professor, Director of Actuarial Science at the University of Illinois at Urbana-Champaign
- Founder of Illinois Risk Lab and RisCal Consulting
- State Farm Companies Foundation Scholar in Actuarial Science
- Fellow of the Society of Actuaries
- Chartered Enterprise Risk Analyst



Brief opening Statement:
Pat Brockett
Ian Duncan
Runhuan Fang



- **How actuarial science is evolving as a scientific discipline?**
- **What role does the industry play in shaping the direction of the discipline?**
- **What role do academics play in shaping the direction of the discipline?**

Challenges facing academic actuaries

“Actuarial science still struggles to be recognized as a discipline worthy of the interest of other scientists.”

-- Jean Lemaire, Professor of Insurance & Actuarial Science, University of Pennsylvania, in a 2005 editorial

Compared with other disciplines, actuaries are a very small profession.

~ 25,000 members (SOA), compared with:

- 1.1 million MDs
- 1.6 million engineers
- 0.7 million CPAs

Actuaries are (essentially) a one-industry profession

Challenges facing academic actuaries

Except in the very largest universities, actuarial departments are limited to a one or two professors. Unlike other scientific disciplines, no large “labs.”

SOA’s CAE program has encouraged more teaching and research positions; CAE research grants have encouraged larger teams and inter-disciplinary collaboration (climate change; agricultural insurance; data science).

Academic reality

US News National University Rankings	Universities and Colleges with Actuarial Programs
Top 10	2
Top 20	4
Top 50	15

- As scientific merits of this discipline are often underappreciated, there are fewer university resources devoted to actuarial science. As a result, there are fewer researchers engaging in actuarial scholarly activities than other fields and fewer actuarial educators teaching the next generation of actuaries.

Academic actuaries

- Mathematicians, statisticians versus actuarial scientists
- Tenure stream professors
- Clinical professors
- Criteria of academic success

Mis-match between academic actuarial focus and industry size;
e.g. +/- 2 health actuary researchers.

Actuarial research

- Actuarial journals are often considered ‘niche journals’, and consequently receive fewer citations than more broadly focused journals.
- Social Sciences Citation Index (SSCI) and Science Citation Index (SCI)
 - Used by governments and public universities to evaluate researchers
 - Limited number of actuarial and RMI journals and often not ranked high in tiered systems. (ABS/AJG, ABDC Journal Quality List, CAS Journal Ranking System, etc.)
- Impact analysis often favors theoretical development over practical problem solving.
- Lack of funding: actuarial research is not typically supported by funding agencies such as National Science Foundation.

Industry perception of academic actuaries

- Academics are only there to help students pass exams.
- Publications in academic journals seem to have very limited practical relevance.
- No attempts to address implementation concerns.

- “Sweet spot for academic applied research are techniques that are about 10 years away from being widely implementable.”
- Immediate applicability vs. radically new development
- Academic research vs. industrial R&D
- Self-correction, trial-and-error

Does the industry even need academic research?

- Technical development requires scientific rigor.
 - Interdisciplinary nature of academic research.
 - Fast changing landscape of data science.
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- Success story: development of credibility theory in 70—80's.
 - Success story: Financial mathematics/crash of 2008

Challenges of academic industry cooperation

- Academics are often not well-situated to develop industry connections: industry connections take *hard work*.
- Mismatch of interests and incentives.
- Proprietary data and information.
- Legal red tape; intellectual property.

Bring the two sides closer

- Learn from Engineering and Medicine.
- Different dynamics in Europe actuarial communities.
- Experiential learning program.
- Pending proposals from the SOA Education and Research Council (university-industry collaboration program).
- Unlike other disciplines, many practicing actuaries have only an undergraduate education, with no training in research.
 - No “two-way street” between industry and universities.

How Can Industry and Higher Education Work Together to Benefit the Actuarial Profession?



Examples of successful Industry-sponsored research

- What has worked?
- What has not worked?
- How was industry-sponsorship obtained?

How can actuaries achieve recognition?

- Within universities
- Within industry
- Recognition of our research

How can actuaries increase resources?

- Within universities

How should we be evolving actuarial education?

- Encourage more graduate studies
- Undergraduate and graduate research

How do we eliminate barriers to collaboration?

- Lack of industry-generated research ideas
- Unwillingness to share data
- Unwillingness to allow publication
- Funding...

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