



Article from

## **The Modeling Platform**

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## Chairperson's Corner

# Bridging Academia and Practice

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Quiet courtyards, ivy-covered walls, not a cloth-covered cubicle in sight. The occasion of my visit to the 2015 Actuarial Research Conference held this past August at the Victoria College campus of the University of Toronto was a brief but pleasant reminder of differences in corporate versus academic lifestyles, but also a stimulus to thoughts about what modeling means to actuaries and mathematicians in the academic world.

The gulf between the world of academia and the corporate world is growing wider in many ways, with bridges between us too rare and too narrow for our own good. The main points of contact between practitioners and academia occur fleetingly when we hire a new student who is freshly graduated, or between terms of an actuarial science program, or when we look for guidance from academic research toward solving complex mathematical questions. I view the separation as widening because of the rapid evolution in power and complexity of actuarial financial models needed by life insurance companies and the types of problems that modeling actuaries are increasingly confronting.

Academics certainly don't seek to preserve this separation. Both in managing undergraduate curriculums and choosing areas of graduate research, leading institutions actively seek to prepare their students for real jobs in the business world and value research that has value to today's society and to practicing actuaries. But the business of life insurance, its products and the risks they present, and the modeling power and complexity required to support business decisions and reporting demands are all moving too quickly.

By nature and by training, mathematicians seek to generalize problems, to find underlying order behind chaos, to understand the nature of systems of a common type and, by doing so, offer insights that can have practical value even when reality is much more complex and diverse. But it is not always easy to take the lessons of ground-breaking research on simpler and more general problems and find ways to exploit them to improve our real-life financial models. And there is not a huge incentive to try if confidence in the real benefits to be realized is low.

Let me mention a real-life problem faced by the Modeling Section. A research project has been launched by the Society of Ac-

tuaries, with sponsorship by both the Modeling and Financial Reporting sections of the Society, into the troublesome issue presented by nested stochastic modeling and the huge computing resources that may be needed to accomplish it by brute force. The research project will look at various aspects of the problem but is not expected to involve hands-on modeling at this point, according to the proposed project outline on the SOA website. Initially it is very likely the research will be conducted by academics buttressed as much as possible by the benefits of practice experience. I think this approach will have value as an initial investigation of the problem and will provide a broad but useful perspective on potential solutions. However, in my view hands-on modeling involving realistic volumes of data based on typical product portfolios, and, therefore, using modern modeling software platforms will be eventually needed to realistically assess any alternative methodologies or modeling efficiency techniques that come out of such research.

Can researchers from academia lead or participate in such research? Not easily; they have no access to either the advanced commercial modeling platforms and sizable computing infrastructure required or realistic company portfolio data. The only apparent solution is to consider an innovative research approach combining the resources of academics with modeling actuaries of insurance companies and possibly software vendors. This is not an easy approach to translate into a real-life project plan.

Of course, academics will continue their research into modeling problems and will no doubt provide many interesting and potentially valuable insights for the profession and for practicing actuaries in particular, if we can communicate effectively with each other. The annual Actuarial Research Conference can be a useful forum and has produced a wide range of accessible papers on many topics, which are documented for your benefit by the Actuarial Research Clearing House on the SOA website.

Perhaps the Modeling Section can also provide a platform (pun intended) to communicate the nature and extent of our real-life modeling challenges to interested academics? They are certainly welcome to join the section either as members of the SOA or as nonmember affiliates and thereafter to participate actively in our discussions and educational efforts. Let's build more bridges (and lay more high-speed cables) and look for opportunities to collaborate! ■



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