



Article from

Predictive Analytics and Futurism

December 2015

Issue 12

SOA Launches Predictive Analytics Initiative

By Ian G. Duncan

It is hard to avoid hearing about predictive analytics, big data and data science nowadays. Although this has not been a mainstream focus of actuaries, there are many of us who have been practicing in this area for a number of years, as members of the Predictive Analytics & Futurism Section (PAF) will attest. Recent actions by the SOA leadership and board promise to move Predictive Analytics (PA) front and center for actuaries of the future.

To gauge the prevalence of PA among actuaries, and to learn the type of projects that actuaries are doing, we conducted a survey targeted to members of sections most likely to be involved in PA. The survey showed, among other findings, that:

- Of more than 500 responses, more than half have been involved in predictive analytics over the past 12 months, and of those not involved, 94 percent expressed an interest in learning about predictive analytics;
- Health care is one of largest areas of growing demand from employers followed by life insurers;
- Employer familiarity with actuaries is relatively low compared with other professionals and actuaries appear to be losing relevance as compared to prior research; and
- Actuaries who can combine a study of policyholder behavior, predictive analytics and business intelligence are highly regarded.

A sub-group of the SOA's Cultivate Opportunities Team (COT) has been looking at what is needed to increase actuaries' relevance and recognition in this field. The COT made recommendations to the SOA's board at the June meeting, which were unanimously endorsed, and a sizeable budget has been set aside to promote the initiative among both employers and actuaries. Plans include:

- Identify education/training needs for PA actuaries.

The survey referenced above evidenced considerable concern

that actuaries are inadequately trained in the type of statistics and models that are required for PA. There are many roles in a PA project, however, from data management, through modeling to implementation (where business knowledge and skills are important), so the interested actuary has opportunities that do not necessarily involve advanced statistics and modeling. A workgroup is, however, currently considering (see below) what knowledge and techniques will be required for actuaries in the future.

The SOA has offered PA continuing education for some time, including the Advanced Business Analytics Seminar. A second seminar specifically aimed at Health Actuaries will be offered beginning in 2016. Continuing education offerings are increasing (the PAF Section being a leader in this regard) and we can expect them to continue to increase in the future.

- Develop a marketing communications campaign to promote actuaries in these roles, target potential employers and inform members of these opportunities.

A key component of the SOA's PA strategy is marketing the capabilities of actuaries, both to potential clients and employers, as well as to actuaries. Recruiters tell us that there are many opportunities for actuaries in analytical roles—more than there are actuaries qualified to fill them. At the same time, as we move to increase the supply of qualified actuaries we need to ensure that employers are aware of our capabilities when hiring, so that the default action (hire a statistician) becomes a more nuanced decision. The campaign will highlight some of the leading actuaries and their work in the space. Expect to see a number of section members featured as the campaign rolls out!

- Providing educational opportunities for members in predictive modeling:
 - University courses/preliminary exams/fellowship track.

Many universities teach students the fundamentals of modeling (Time Series, Regression and Generalized Linear Modeling, for example). It is often difficult to fit practical applications of this material into the undergraduate syllabus, given the SOA's and universities' course requirements. Once they graduate and enter actuarial student programs, students frequently do not have opportunities to apply their knowledge of PA, either. Thus the strategy has to be two-pronged: encourage more hands-on modeling at the university level, and encourage more rotations and jobs at actuarial firms that apply these models.



was due partly to a desire to be aligned with the SOA's strategic direction, and partly to be more transparent to members about the mission of the section. With the enhanced marketing of PA coming in 2016, expect more attention and opportunities for PAF section members.

These are just some of the plans for the Predictive Analytics initiative. If readers have suggestions or questions, please contact me (Duncan@pstat.ucsb.edu); Jim Trimble, chair of the Cultivate Opportunities Team (james.trimble@uconn.edu); or Courtney Nashan, the SOA staff person who actually does all the work! (cnashan@soa.org)

I have been pleased to be involved in this initiative for the past two years, and to have been the board partner for PAF over the past year. It has been a great opportunity to learn about the section and its work, and to move it to the forefront of this new initiative. Section members should be excited by the focus that the SOA is bringing to the initiative—I wish the incoming council every success in the new year, and look forward to staying involved with you as we roll out this important initiative. ■

One of the key recommendations of both the COT and the Learning Strategy Task Force (LSTF) was that the Predictive Analytics should be added to the ASA syllabus. A syllabus re-design committee is currently considering this issue, which is not without challenges: PA is not a subject that can be adequately tested in a multiple-choice environment. Simultaneously with the SOA's decision to enhance the syllabus, other actuarial bodies have similar initiatives (e.g., the CAS with its new exam S and the International Actuarial Association's recommendation to include data and predictive modeling on the syllabus for the "qualified actuary" (essentially the SOA's ASA).

The LSTF also made recommendations for the fellowship exams and continuing education. Fellowship exam committees will be encouraged to add practical applications of PA to exam tracks. Actuaries at the fellowship level will not be required to perform the type of modeling that will be expected from associates, but they will be expected to know how the models are applied in practice.

- The SOA has significantly increased its research budget in recent years and this will be directed at projects in PA, particularly in Life.
- Multiple articles: the PAF section is the winner in this regard, by a mile! The recent change in the section's name



Ian G. Duncan, FIA, FCIA, FSA, FCA, MAAA, is Adj. Assoc. Professor of Statistics and Applied Probability at University of California - Santa Barbara. He can be reached at duncan@pstat.ucsb.edu.