convinced by a local teacher that Evarist should attend a secondary school that leads to entrance to a university. Evarist succeeded with distinction and studied mathematics at the *Universitat de Barcelona*, obtaining the degree of *Llicenciat* (comparable to BSc.) in 1967. Evarist met and married his wife Rosalind Eastaway in that time. Partly because of the Franco regime and partly because of their adventurous characters, they left Catalonia, and after some time teaching mathematics in Venezuela, Evarist was admitted to the PhD program in Mathematics at the *Massachusetts Institute of Technology (MIT)*. Evarist completed his PhD in 1973, under the supervision of Richard M. Dudley, his main work being on statistical tests for uniformity on Riemannian manifolds, published in the *Annals of Statistics*. This early work, highly cited in statistical literature in the following years, already showed one of the main features of Evarist's research: his deep interest in the problems motivated by mathematical statistics, where there was a need to develop both subtle and powerful mathematical tools. His prolific mathematical abilities produced 2 further papers during his PhD years, both published in the *Annals of Probability* that started one of the main lines of his research, the study of limit theorems in infinite-dimensional Banach spaces.

Evarist then spent 1974-1975 in Berkeley as a lecturer, where he met Le Cam and the other greats of that Berkeley Golden Age in statistics. After some 'wandering years' that included a return to Venezuela, where Evarist was Head of the Mathematics Department, *Instituto Venezolano de Investigaciones Cientificas*, and extended visiting positions at the *Universitat Autonoma de Barcelona*, Evarist finally settled at *Texas A&M University*, becoming a Professor there in 1983. Some of Evarist's most influential and original work was done in that time with Joel Zinn, a colleague and friend at Texas A&M. Their joint work resulted in the development of the most important tools of empirical processes theory, such as symmetrization inequalities, entropy bounds and random multiplier inequalities that later penetrated many areas of mathematics, statistics and computer science (in particular, machine learning). After two years as a professor in New York at *CUNY*. Evarist took up a professorship at the *University of Connecticut* in 1990, where he stayed until his death, ultimately as the head of the department of mathematics there. Evarist has had 8 PhD students, most notably Miguel Arcones, and had a substantial impact on a whole generation of probabilists and theoretical statisticians that had their formative academic years between 1990-2010.

That Evarist is gone leaves a great emptiness in the mathematical community. For those who knew him personally and worked with him, he will always remain a great friend with whom they spent endless hours talking mathematics at the board or in his warm and hospitable house. The loss is even greater for his family: he is survived by his wife Rosalind, his two daughters Núria and Roser, and his two grandchildren, Liam and Mireia. But his great enthusiasm, intellectual brilliance and profound original ideas will live on for many generations to come, through his mathematical writings, in our memories and in his family.

Vladimir Koltchinskii, Richard Nickl, Sara van de Geer, Jon Wellner

David's Musings: Data Science for Everyone, and Probability Models meet Player Ratings

The Chancellor here at U.C. Berkeley is proposing that every undergraduate should take some course in Data Science. Recall that U.S. universities usually impose "breadth requirements", for instance that every student take some "quantitative" course; this new proposal is presumably intended as a modernization of that requirement. A committee formed to plan implementation suggests that a variety of courses be offered by different departments, and interprets "data science" to mean *something uniting computation, statistics, information management and application-domain engagement with real-life data.* An interesting recent arXiv article by Ben Baumer at Smith College (liberal arts) relates his experience in teaching such a course. My first two rather frivolous thoughts are: (i) "big data" is an impressive sounding phrase when applied to commerce, but calling an academic unit "Department of Big Data" would sound very weird. This is why the phrase Data Science has become prominent in the academic community. There is a rapidly growing list of Masters Programs in Data Science, and surely the first Department of Data Science will appear soon. (ii) The author of a definitive text *A First Course in Data Science* will surely become rich and famous.

Now some readers may have heard me rant as follows. Matrices arise in many areas of the mathematical sciences, but there is no such thing as Matrix Science. PDEs arise in many areas of the mathematical sciences, but there is no such thing as PDE Science. Networks -- that is, graphs with context-dependent extra structure -- arise in many areas of the mathematical sciences, *but there is no such thing as Network Science.* So you might expect me to say the same about Data Science. But no; I am objecting only to the format "X Science" when X is a mathematical object, not when X is something from the real world. Despite my rant and my frivolous thoughts above, I am greatly in favor of teaching something of the Data Science kind as a substitute for, or complement to, a traditional first course in Statistics. The whole thrust of 20th century introductory Statistics teaching -- the emphasis on probability models leading to tests of significance -- has always struck me as wildly misguided. Most interesting data does not now, and never has, come from a plausible probability model, so why build a discipline upon the assumption that it does? What specific content should be taught in a 21st century introductory Data Science course is very unclear to me -- I have no original thoughts on that -- but am looking forward to seeing what Berkeley and other universities will create.

Changing topics, I am always keen to uncover uses of probability which seem overlooked in our "applied probability" community, in the sense of not appearing in our textbooks or research journals. The notion of *chess rating* may be familiar -- your rating increases or decreases when you win or lose a game, but the size of the jump depends on your rating relative to your opponents. You may not realize that similar "Elo-type" rating schemes are widely used in games in which many amateur players participate without organized scheduling. Indeed in many online games such ratings are automatically given and updated. Now there is a natural probability model for games; each player has a strength, and the probability of a given player winning over another is a function of their differences in strengths. (With the logistic function, this is a reinterpretation of the Bradley-Terry statistical model for consensus rankings.) While there is an obvious heuristic connection between the probability model and such rating schemes, the precise relation between the model and the rating algorithm has apparently not been well studied, and many projects for students suggest themselves. For instance, within the model one can ask *what is the chance that the actual winner of a recent tournament was actually the best player?* In this connection, one finds that many mathematicians have thought about tournament design (e.g. search on "Lewis Carroll lawn tennis tournaments"). In other directions, Xbox Live uses a slightly more elaborate two-component rating scheme, the point of such rating schemes being both to motivate individual players and also to match players with equally skillful opponents. And a recent undergraduate-level book *The Science of Ranking and Rating* treats the general area of sports ratings but from a different viewpoint. Anyway, this is fertile ground for a lecture in my Probability in the Real World course.

David Aldous
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Editor's Note: This is the tenth installment of a regular opinion column.

Mobile Apps for Conferences

The 2014 edition of the SPA conference was organized by the probability group at Buenos Aires. On this occasion, we decided to develop an application for mobile (smart)phones and tablets. We thought that such an application could be useful for most of the participants which was later on confirmed by the feedback we had. Here are some sparks of our experience that we think can be of interest in case you would want to develop such an application for your conference.

How to start: there are several options one can choose to get this application. The obvious one: you can hire a programmer and ask him for a tailor-made application. Instead we decided to use the platform at https://www.adianteapps.com/. This platform allows one to build applications for conferences following very easy steps.

At this point, I recommend to stop reading this note, click on the link above and continue there. But in case you insist, here is more info.

Prices. The costs depend on the option you choose. In our case, we could develop the app for USD 360.

Things to keep in mind:

- If you choose adiante apps, your application will be available for iphone and android at the apple store and play store, respectively. But it will not be available for Windows phones.
- The Apple store takes around two weeks to publish the application once it is ready. After that you can make changes and they are updated automatically, but the first version requires some paper work.
- This app builder allows the inclusion of titles and abstracts for the talks, schedules, maps with venues and places to eat, links to web pages of the speakers among other things.
- The application is very useful if the conference has multiple parallel events during the same slot. In this case, the app really helps to choose where to go.

I hope this note was convincing enough and that you shall choose to have an app for your conference. Your participants will really appreciate it.

Pablo Groisman
Buenos Aires