# The Renaissance Statistician

Radu V. Craiu, Department of Statistics, University of Toronto, writes: I am sitting in one of our weekly Departmental Seminars listening to a talk rooted in a remote area of Statistics. I am resigned that I will get little out of it (maybe some Beamer tips?) and pretty convinced that there will be no questions at the end, as the topic is 'exotic' to say the least. But then, out of the sleepy stupor that occasionally accompanies the end of such talks, a surprisingly penetrating question is asked by a colleague with a wildly different area of expertise, and all of a sudden the talk is not that cryptic any more and the question asked has opened a field of possibilities.

A few weeks later I am attending one of the plenary talks at the JSM and I have people literally breathing down my neck, that's how crowded this place is. As I am fighting hard to not get my seat stolen from under me, I try to figure out why is this place so crazily packed. As I listen to the talk (a great one, too!) all of a sudden it dawns on me: the speaker is one of those rare statisticians who can move with ease between various fields in statistics and his research has a reputation of bringing techniques from one field to solve problems in another. Not surprisingly, more than once, this has resulted in opening an entire new field for all of us, including the excited and squeezed-in audience, to work and build careers on.

What is the common link between these two statisticians? They are both Renaissance Statisticians—that enviable representative of a rarefied caste who moves with ease and authority in a respectable number of statistical domains, be they asymptotic, ergodic or astronomic. Their presence in Statistics has left an indelible mark on how we think about our discipline and we organize our aspirations. By stating that we are all playing in many sciences' backyard, Tukey, the

ultimate representative of this group, has simply implied that statisticians have to be Renaissance scientists. The Renaissance ideal may also explain the ubiquitous Departmental Seminar series to which all statisticians are expected to come, regardless of their field of expertise.

As Statistics gains depth and width as a discipline, researchers tend to become experts in narrower fields and their inclination to branch out becomes less and less likely. This really starts in graduate school where, faced with the impending doom of dissertation writing and a dwindling job market, few PhD students feel the urge to consider strategies that could broaden their statistical culture. The trend continues in tenure-track periods when, due to the criteria used for promotion in most Universities, nearly all choose to amplify their PhD work, without changing or alternating fields. For all these reasons(and possibly more), the Renaissance Statistician may



*The Renaissance ideal*

share the same future as the Siberian tiger.

Whereas for the latter our profession has limited avenues for action, we may have a few remedies for saving the former. For one, we could strongly encourage our graduate studies to take more courses than required for passing the comps and familiarizing with their chosen dissertation area. We should realistically admit that a large proportion of these students will go out in the world to work in companies, hospitals or banks. Do we really want to send them out there armed with only one serious tool—the field of expertise from their thesis? As statisticians start to play in everybody's front yard they will need a diverse set of toys. They will not have the luxury of selecting those problems that fall within their range, especially if the latter is fairly narrow. Can we develop courses that will truly develop the multivalent aspect emphasized here? Is experiential learning/ teaching the way to go? Can one train to be an aspiring Renaissance Statistician? If so, how could we measure the success of our attempts? These are questions that may need serious pondering and I believe that further discussion of this is important for our students' future and their societal impact.

As for those young researchers, toiling away towards the holy grail of tenure, maybe we should be more indulgent and truly allow them to mix things up, even if this means, at least for a while, scratching the surface of many fields in addition to digging a big hole in a single one. After all, if a complex statistical analysis appears at the horizon, wouldn't they be the ones most highly recommended to crack it?

For the sake of our students and colleagues who would like to change the world one application at a time, we should modify our programs so that the Renaissance Statistician can become a viable alternative instead of a vanished species.