

After switching my major numerous times, switching undergraduate universities and burning out while student teaching math to middle students, I decided to attend graduate school with a key component of that experience being that I wanted to teach. I had no idea what I was doing, only what I had seen others do. I'd taken a grand total of a single statistics course (intro stats) as a math major undergraduate.

Nevertheless, I'd seen people teach my whole life, had some modest training during a brief stint as a math education major and, before I knew it, 20 years ago during the last week of August, 2001 – I selected a textbook and was thrust in front of a classroom of pre-med students at Stony Brook University in Long Island, NY – just outside of NY city. There were, as you might imagine, laughable failures – substantial gaps in content understanding, no pedagogical training, no support, no experience. Most students didn't want to be there, didn't appreciate the subject and didn't learn anything. Being pre-meds – there was a singular focus: get an A – whether you learned anything was of nearly inconsequential significance. And, of course, two weeks into the semester: the world trade centers collapsed. Most of students were from NYC, and many were directly impacted losing loved ones and acquaintances, or having those folks on the front lines of the recovery efforts. It didn't take long for me to realize that teaching, even at the college level, was going to involve a lot more than just 'standing in front of the class telling people stuff.' True teaching---having a true impact on students the world – would mean I'd need strategies to connect with students, to motivate students, to come alongside students who were being challenged both in and outside of the classroom. But, there were glimmers of what it could be.

After four semesters of teaching, I took 3 semesters off to finish my dissertation and then, in spring 2005- a recently minted PhD awaiting a move to MI to start my first tenure-track position at Hope College, and a brand new member of the American Statistical Association – I adjunct taught a course at a local college for students wanting to start a non-profit about using data to help inform their organizations mission, strategy, feasibility and profitability. Here, I learned that pre-meds were pretty unique! Now I had students who didn't think statistics was helpful – in fact in might be a hindrance and didn't really care about there grades!

It was into this context that I received my first copy of AmStat News. There was an ad in the back for something called "The first US conference on teaching statistics". The conference wasn't too expensive and wasn't too far away (Columbus while I was in NY city). So, I bought my ticket and went to my first ever teaching statistics conference.

I was absolutely amazed. The people there were like me! They wanted to teach statistics – vs. thinking of teaching as an annoying side bar as so many of my peers and professors did during graduate school.

Furthermore, the talks were compelling, illuminating and challenging- and, yet, unlike so many other conferences I'd been to – the speakers were accessible, normal 'real people who you could talk to'. I attended every session I could – enjoying talks by Ann Watkins, Robin Lock, Roger Woodard, Allan Rossman, Beth Chance, and so many others. I even got to have lunch with Dick Scheaffer!

But, more than any of those talks, there is one thing I will never forget. It was truly a life changing, career-trajectory-altering hour and 30 minutes. On Friday night, May 20, 2005, I took my seat with 100s of others in the Pfahl hall ballroom at The Ohio State University thinking that I was going to enjoy a nice

dinner. Instead, what I heard was a talk that was transformational . It would be first time I'd ever heard the name George Cobb, let alone hear him speak.

But, speak he did. In his quiet humble way, he stood at the podium. The room was so quiet you could hear a pin drop (at least that's how I remember it). He wove stories, with ideas. Compelling ideas, challenging ideas, visionary ideas about what introductory statistics could be, what it should be. His eloquence was exceptionally exquisite. Years later I would find out that George majored in Russian as an undergraduate. There is no doubt this interest in words, language, word play and the written and spoken word played a major role in lending to the impact of George's ideas. But, even if they had been said less eloquently the ideas were impressively impactful.

That night, George argued that the content we taught in introductory statistics was primarily the cogs in the mechanism, instead of the principle – and, hence, we had a 'saber tooth curriculum'. He wove a beautiful narrative about the history of the course – honoring those key people who brought it to its current place, and, yet, held nothing back in challenging us to think big about the future.

I'll never forget one of the stories he told. A story right out of Appalachia of a man who only plucked a single note on his banjo, over and over again. To those who asked "why" the man simply replied that while so many who played were looking for the right note, he'd already found it." But it's what came next from George that got to the core of who I was: "What if we in statistics education say "We found it" "We're done" "There's nothing more to do"?

Yes, I learned a lot about myself that night. That I was not one to settle for teaching things the way they always had been – not when I could see already that it wasn't working for me or my students. Not when I was staring a lifelong calling for teaching introductory statistics in the face. No, I resolved, while George talked – I follow George's challenge to be different. I would challenge the norm.

Then, George went on to talk about simulation. In the remainder of the talk, he would plant the seeds of thought that I couldn't shake – and haven't shaken to this day – seeds of a core idea of how to radically change the teaching of introductory statistics.

Before I go any further, I do want to point out that, as I found out later and as you will hear from others today, George's impact goes well, well beyond a single talk, on a single night challenging us to think about using simulation to radically reshape introductory statistics. But, my story with George starts there, so I thought I'd focus on that.

As I started my first teaching position: teaching 2-3 sections of intro stat every semester (and little else!) for 6 years, every semester was spent challenging the norm – taking to heart what George had challenged me to do: How could I know my students were learning? How could I improve what I was doing? How could I improve what my students were learning?

Along the way I found that I wholeheartedly agreed that simulation was the way to go –

- I was using simulation in my research developing new methods for genetics data and seeing how they radically developed even very strong math students' abilities to understand statistical thinking.
- I began trying modules from George, Allan, Beth, and John Holcomb using simulations

- And a few years later, one night, seeking to continue to be 'radical,' I showed my current textbook the circular file only days before the start of the semester in order to go 'all in' on a course based in simulation-based inference

In 2011 at another conference over dinner, I was incredibly humbled and privileged to formally be invited to start working with George, Allan and Beth and others on a project to change intro stats using simulations. To focus on the big picture – not the cogs in the mechanism. And continuing a career trajectory that started that one night in Columbus.

The remainder of my remarks focus on the remaining 10 years of working directly with George. Talking with him and our team of statistics educators almost every week during that time. Presenting alongside him. Writing together, talking together and dreaming of a future of statistics education for intro stats students.

Our team remembers

1. Banjo playing
2. Quietly listening while we'd debate and chiming in with humble eloquence to capture, quantify and synthesize the arguments all the while subtly pushing us all to think more radically
3. Driving to the airport with George– talking about our upbringings, feeling a true and genuine interest in who I was, what I believed, what I was passionate about, and caring about who I was
4. Beth remembers George's impact on her in the 1990s when she, too, was a new educator. Hearing George talk for the first time about using slime to teach ANOVA. A brilliant talk, having profound, lifelong impact on her and her teaching: helping her see a clearer way to connect with students and bring the subject alive for him.
5. Todd Swanson (another member of our team) went back through emails from George- often coming having a particularly compelling discussion by our team and showing us the eloquence, brilliance and vision were 'every day' occurrences for George- not simply reserved for once in a decade plenary speeches.