Interview with Ron Wasserstein

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Ron Wasserstein is Executive Director of the American Statistical Association. He previously served as Vice-President for Academic Affairs and Professor of Statistics at Washburn University.

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Beginnings

AR: Thanks very much, Ron, for agreeing to be interviewed for the Journal of Statistics Education. *Let me start not quite at the very beginning but fairly early on. Where were you when you were eighteen years old, and what were your plans for your career at that time?*

RW: There was no doubt in my mind that I was going to be a journalist, and go to New York, Washington, Chicago, or LA and work for a big-time newspaper. I got interested in journalism in high school, studied it in college for a couple of years, and was even made editor of the college newspaper. Ultimately, though, I realized that the courses I loved were the mathematics courses, and changed direction. I still gobble up newspapers and other news sources, but I've never regretted turning from journalism to math and then to statistics.

AR: I'm glad I asked, because that is certainly not the answer I was expecting. At what college were you an undergraduate? Did you initially study math or statistics in graduate school, and where was that?

RW: I majored in math at Washburn University, then went to Kansas State University for graduate study in statistics. A distinguishing feature of both experiences was that I received outstanding mentorship from the faculty. Al Riveland, Gary Schmidt, Larry Blumberg, Dick Shermoen, Terry McAdam, Gary Baker, and others, provided wonderful guidance during my undergraduate years. Ann Ukena from Washburn has been a lifelong friend, as has my graduate thesis advisor, John Boyer. Among many things, John encouraged me to join and get involved in the American Statistical Association. I've treasured his advice, and the relationships I've had with all these faculty, throughout my career.

AR: What appealed to you about those math and statistics courses, enticing you away from journalism?

RW: I remember being drawn to math early on, but I was particularly inspired by a middle school teacher who challenged a few of us who were bored to prove or disprove that .9999… was equal to one. Thinking about this problem and the concept of mathematical proof was an eye-opener. In college, when I finally took time to reflect, I realized that the classes I was most enjoying were quantitative in nature. As I neared completion of the bachelor's degree, I knew I was interested in applications, and looked at many different kinds of graduate programs, but when my undergraduate mentors took me to the department of statistics at K-State, I was wowed. I saw an amazing array of work that statisticians were doing, contributing to science in a rich variety of ways. I came home from that campus visit, and my wife could tell by looking at me that I had found what I was searching for. All these years later, I still marvel at the myriad ways statisticians contribute to improving decisions and bettering the human condition.

AR: What did you work on for your dissertation?

RW: I was looking at non-parametric tests for comparing scale parameters. I showed that linear rank tests for scale were non-resolving (their power did not go to one as the difference between the null and alternative grow without bound). I looked at the power properties of various permutation tests as alternatives. What I chuckle about today is that my phone has more computing power than the machines on which I ran those Fortran simulation programs a lifetime ago.

Teaching Career

AR: Did you develop an interest in teaching while in graduate school?

RW: I admired the quality of instruction I received while I was at Washburn, and had in the back of my mind when going to graduate school that I would like to teach someday. (I even had the crazy notion that I would like to return to Washburn to teach.) The opportunity to teach a class as a graduate teaching assistant solidified my interest. It was frightening and exhilarating as a 22-year-old to face my first class of college students in a business statistics class at Kansas State. I tried way too hard and made a lot of mistakes, but I loved it. I've never stopped loving it, and I never got over being frightened and exhilarated on the first day of any class.

AR: And you also achieved your crazy notion of returning to your alma mater! Did you return to Washburn immediately after graduate school? How strange was it to return in the role of faculty member, not terribly long after being a student there?

RW: I went to graduate school for two years, then I spent two years working as a statistician in the Affirmative Action Office at K-State. At the end of those two years I realized I would never achieve my dreams of teaching (and teaching at Washburn) unless I returned to grad school to finish the Ph.D. I had no idea about academic positions, or how unlikely it was that a job would open at Washburn when I was available to take it, but several unlikely events happened in sequence: Washburn wanted to hire a statistician (its first), they were willing to hire someone who hadn't yet completed the degree, and out of all the applicants, including some with completed Ph.Ds, I was selected for the position. I was thrilled!

It was strange to become a faculty member after recently being a student, but I was treated like a professional colleague from day one by everyone involved. I was hired to teach but also to start a consulting center. I say "consulting center," but really the consulting center was me. I served as a consultant to Washburn faculty, and eventually to many other people and agencies in the regional area. It was great experience.

I know we'll talk more about teaching, so I'll tell you a consulting story now. One of my first colleagues was a geneticist working with fruit flies. He was analyzing pigments in their eyes, which was telling him things about evolutionary changes across time and regions. Following my training, I asked if I could visit his lab and learn about how he collected the data. He showed me how his students retrieved the fruit flies, which arrive from very specific locations around the world. They were kept cold so they stayed alive but moved slowly so they could be easily caught. They took a fly out of cold storage, cut off its head, then did chemical analysis of the eye pigments. I pretended to look appalled, and asked my colleague if they offered the flies a blindfold and a cigarette first. I was the only one who thought that was funny. Perhaps I still am.

AR: I'll let JSE *readers be the judge of your last statement, but I can truthfully say that the count is now up to least two. What kinds of courses did you teach when you started at Washburn?*

RW: I began by teaching standard introductory statistics, a math stat course (Hogg and Craig level), and linear algebra. It was a math department at the time, becoming math and stats a few years later. I was also asked to develop two new courses: an introductory stat course for math majors and a second semester of the math stat course. Not long after that I was tasked with establishing an actuarial science curriculum. Nope, I wasn't an actuary, and did not play one on TV, but I still got that assignment.

AR: What was your teaching style as you were starting out, and how did it evolve?

RW: I was most definitely a lecturer at the outset. I prepared a thorough outline for each class period, had every example selected carefully and worked out in detail in advance, and stuck to the script. I tried to make it an interesting and compelling script, but it was still a script, and a very detailed one. Over time, I spent less of my prep time writing out everything in detail, and

more time thinking about how to present the story. Eventually, I think I spent about half of my prep time finding fresh and compelling examples with real data that illustrated the concepts and hopefully showed students a glimpse of the power and impact of statistics. Most of the rest of the prep time was spent in trying to make the classroom a more interactive experience. It did not come easily for me, and students struggled with it as well. I liked to talk, and they appeared content to listen, take notes, and chuckle at my so-called humor. However, I became increasingly convinced that learning was not being as effectively accomplished as it could be.

The change from lecturer to what I will call a "learning facilitator" was a long evolutionary process. It was much harder to prepare a classroom experience than it was to prepare a lecture. I made many missteps. I realized at one point, for example, that I was so carefully helping students sort out the problems and limitations of various studies that they were taking away the message that you could never get it right! I became in many ways much less confident in my skills as an instructor, but I feel that I made progress in the right direction.

I was helped immensely along the way by the marvelous work that was being done by colleagues in the Statistical Education Section of the ASA. Going to JSM sessions and networking in other ways with these amazing colleagues brought a lot of improvement to my teaching. I found great benefit in JSE and in the GAISE College Report, to name two other wonderful resources.

AR: Were you able to develop an actuarial science program, as you had been charged?

RW: Yes. It has been in place for 25 years now. Of course, many changes have occurred in the program because much has changed in the way actuaries are prepared and tested, but actuarial science is still an option for math majors at Washburn.

Academic Administration

AR: You eventually joined the ranks of academic administrators at Washburn. What led you in that direction?

RW: Statistics! In the late 80's there was a big administrative shakeup, and there was a vacancy in the dean position in the College of Arts and Sciences. A senior faculty member in psychology, Del Yelen, was asked to serve as interim dean of arts and sciences, and she said she would do it only if she could hire me as an associate dean. Del said she had spent many years watching deans make decisions without data, and she wanted that to change. She had worked with me on a committee that looked at faculty salary data, and wanted to bring statistical thinking to more aspects of administration.

It was a one-year appointment, and how could I turn it down? But I had no intention of making a career of it. Frankly, I did not enjoy that first year all that much, but the dean search was not successful, so Del and I were asked to stay on a second year. In that second year I began to realize what a tremendous opportunity to serve the university community had been handed to me. At the end of year two, a dean was hired, and he asked me to stay on. I spent a total of four years in the College of Arts and Sciences office, then eight years as associate VP for academic affairs, followed by seven years as VP for academic affairs.

AR: Please tell us what a VP for academic affairs does. Were you able to bring statistical thinking to that position?

RW: The vice president for academic affairs is the chief academic officer of the institution, providing leadership for the entire academic enterprise in consultation with the whole range of stakeholders – the faculty and students, deans and other academic administrators, and the wider community. I hope I did bring statistical thinking to the job, because I'd like to believe that statistical thinking is, well, how I think. To be quite candid, though, I was more successful the better I understood the importance of the variety of ways of thinking about the world that are reflected in a university. In other words, I needed to learn from the ways economists solve problems, and anthropologists, and musicians, and so on.

AR: What was the most important thing you learned about academia based on your time leading academic affairs at Washburn? What was the most surprising thing?

RW: Perhaps the most important thing I learned is that there are a lot of people in the world who are a lot smarter than I am, and a lot of ways of looking at the world that are very different than mine. I was most professionally successful and personally gratified when I would get past myself and listen carefully to the words and perspectives of others. I was surprised at how often in the academic world we failed to give each other credit and respect, as though certain disciplines were somehow "less worthy" than others. I hope I treated all colleagues as worthy of respect, and if I did not, shame on me.

AR: Before I ask about your career after Washburn, let me ask you to tell us a bit about Washburn itself. What's distinctive about the institution? What did you find so special about the place?

RW: Allan, Washburn was, and is, deeply a part of me. It was an extension of my home and my family. Like others I celebrated the successes of individuals and the university as a whole. Like others I went to weddings and funerals, visited people in the hospital, chatted with folks at the grocery store. It was a community. It was my community.

What was distinctive about it? Well, I think we have a natural tendency to imagine our organizations to be more unique and distinctive than they are, and of course I can't be unbiased, so I'll tell you some of what I love about Washburn, and leave "distinctive" as a judgment for others.

Excellence in teaching matters at Washburn. Student success matters. Washburn faculty and staff know that the college experience is transformative for students, and want to make that experience of transformation as positive and productive as possible. They also know that the local community pays a lot of the bills, and rather than separating itself from the community, Washburn welcomes the community, with many events and activities designed to engage them.

At the end of the day, though, the people were the most special. The wonderful people with whom I worked and learned from over my 40-year connection to Washburn have had an enormously positive impact on me. I count myself extraordinarily fortunate.

Executive Director of ASA

AR: This leads us to the question of how you came to leave Washburn to become executive director of ASA.

RW: I loved being an academic administrator and faculty member at Washburn, and thought I would work there throughout my career. My early career was shaped by keen administrative mentors like Dick Shermoen, Del Yelen, Carl Slater, and Bob Burns. I worked for a wonderful president, Dr. Jerry Farley, who is a mentor and a friend, and a truly remarkable leader. I had wonderful staff in my office, and faculty and staff colleagues throughout the university who were a pleasure to work with. I was as happy as could be!

But throughout that 23 years of service at Washburn I was devoting time and energy elsewhere as well. John Boyer encouraged me in the mid 80's to get involved in the ASA, and that I did. I volunteered in numerous roles in the ASA, including service on the ASA Board of Directors, and I assumed I would continue to volunteer with the ASA over the course of my career.

However, in 2006 those two parallel life tracks intersected when an opening for the position of executive director of the ASA was announced. After much soul-searching, I decided to apply for the position. It was a hard choice. I was firmly rooted at Washburn and in Topeka, but I was fortunate to be selected for the job, so with many tears we uprooted and moved to the DC area.

I am deeply grateful for those years at Washburn. I was nurtured and given the chance to nurture others. I was given every opportunity and resource to thrive. Now I am equally grateful for the opportunity to serve our association and profession. To have worked in two places that have been such a joy is truly a blessing!

AR: Please tell us more about your volunteer work for ASA before your move to Alexandria. What roles did you have, working with what committees or sections or chapters?

RW: As I mentioned, my mentor John Boyer said I should get involved in the ASA. By the way, John took his own advice. He is the only person ever to have been chair of both the Council of Sections and the Council of Chapters, and is the recipient of the ASA Founders Award, our highest recognition of outstanding service. John said "get involved" and I said "how?" He suggested finding some section at JSM that sounded interesting, and go to the meetings. I was teaching and doing consulting, so Stat Ed and Stat Consulting were natural places to go. (They had different names then.) I also got involved in Kansas-Western Missouri Chapter. I served as chair of the Stat Ed Section and the Stat Consulting Section, and held other offices in those sections. I twice served as chapter president and served a long stint as the chapter representative. I was chair of the Council of Chapters. I've been on the JSM program committee a couple of times, and served on several other committees as well. I was a member of the ASA Board of Directors from 2001-2003.

Service as an ASA volunteer was deeply rewarding to me. Every investment made in it was returned several-fold. For example, I met people in those early days of volunteering who are still friends and close professional colleagues nearly 25 years later. Of course, I never imagined that the volunteer work would lead to a job!

As Executive Director, I am keenly aware, based on my own experiences and the experiences of many others, how important volunteers are to the health of our association. We couldn't do most of what the ASA does without the generosity of the hundreds of members who share their time and talent with us every year.

AR: One of your volunteer activities was coordinating the Section on Statistical Education's Best Contributed Paper Award, which has served to encourage high-quality presentations about education at JSM for many years. When and how did you get involved with this award, and why have you continued your involvement even since you've become Executive Director?

RW: I'll repeat a story I told at a Stat Ed Section Business Meeting a few years ago. When I was a kid, I learned quickly to ride a bike. First time up I had the balance to make the bike go. What I had a really hard time learning was stopping! I realize that has been a metaphor for my life. I took on the responsibility for coordinating the Best Contributed Paper Award in 1988, because it seemed important to encourage and promote excellence in presentations. I just kept doing it! All these many years later, it seems no less important.

AR: I'm very glad that this award is now named for you, in recognition of your tireless dedication to this important work. I'd like to ask several questions about your work as ASA Executive Director. Let me start with the basics, because I suspect that many JSE *readers have experience as an ASA member and volunteer, but perhaps few have much experience with the ASA office and staff. Please tell us about how the ASA office and staff positions are organized. And, did you do much reorganizing when you took the position?*

RW: Thirty-four people comprise the ASA's staff, and most of them are located in our headquarters building in the Old Town section of Alexandria, Virginia. It is surprising to many people to learn that only three ASA staff members are statisticians (Lynn Palmer, Director of Programs; Rebecca Nichols, Director of Education; and me), but this is not really uncommon. As a general rule in associations, most staff members work in positions that are fundamental to the operation of *any* association, be it the ASA or any of the hundreds of other professional and trade associations in our neighborhood. (The DC area in general, and Alexandria in particular, is home to a LOT of associations.)

While only a few ASA staff members are statisticians, the rest are talented professionals in specific areas of expertise, and without them there would be a much less vibrant ASA. Broadly speaking, ASA staffing areas are:

- Accounting, finance, and HR (5 people)
- Committee, section, and chapter support (3)
- Communications and PR (5)
- Customer care (5)

- Education and advocacy (2)
- Executive staff (3)
- Information technology (3)
- Marketing (2)
- Meetings planning (4)
- Publications and advertising (2)

Of course, in a business operation the size of the ASA, almost everyone is called on to do work that crosses the boundaries of these broad areas.

I did very little reorganizing, because my predecessors as executive director, Ray Waller and Bill Smith, had assembled a great team and organized it well. Steve Porzio, the Associate Executive Director and Director of Operations, is skilled at making appropriate adjustments as the needs of the association change.

AR: Can you talk me through a typical day or week in your position? Actually, let me rephrase that, because that question is too general. Other than answering questions via email from a longtime ASA member, what are you doing today, the day after the Seahawks' convincing victory over the Broncos in the Super Bowl? And what were some highlights from your work last week? And what do you have on your plate for the rest of this week?

RW: The thing that typifies my days is that there is so little "typical" about them. Today, for example, I met by phone with a group of ASA volunteers and with professional fundraising consultants to help us more fully develop our fundraising program. I worked with staff on some issues related to JSM 2014. I wrote a blog for the 175th anniversary, and worked on several other projects related to that anniversary celebration. I responded to inquiries about accreditation, and I worked briefly on a project to develop an International Prize in Statistics. Then I had lunch!

Most days I'm meeting with people away from the ASA Office, because of the important relationships and connections that we have with many other organizations. Tomorrow, for example, I'll be having meetings at the National Science Foundation. Wednesday I'll be working with a firm that is helping us develop a national outreach campaign to encourage young people to become more statistically literate and perhaps even to major in statistics. Last week I went to meetings at the American Association for the Advancement of Science, and attended the executive committee meeting of the Consortium of Social Science Organizations. I met with ASA President Nat Schenker to talk about the JSM and about strategic activities of the ASA.

You joked about email messages, but I answer tons of messages each day, and a fair number of phone calls as well. One of the best parts of my job is interacting with members. After all, that's what I'm here for – I work for you all.

AR: Wow, I'm feeling tired just from reading about your morning! You mentioned that this year is the 175th anniversary of ASA, on the heels of 2013 being the International Year of Statistics. What are some celebratory events being planned for this occasion?

RW: We are planning a big party for Tuesday night of JSM right after the President's Address and Awards – which will start earlier to accommodate the party. The highlights of the party will be a champagne toast and a talent show. There will be several other fun activities at JSM 2014 as well.

However, not everyone will be able to attend JSM, and we'd like this anniversary celebration to connect with everyone in some way. We're encouraging chapters and sections to hold events or activities in honor of this occasion. There are a bunch of ways individuals can participate, too. Take a look at http://www.amstat.org/asa175/celebratewithus.cfm.

The theme we have chosen for this special anniversary is "Celebrate our past, energize our future." It is wonderful to remind ourselves of the long and rich history of our association, and to remind ourselves of the choices and sacrifices others have made in order to bring us to this milestone. It is equally important to make choices now that help ensure that the 200th anniversary (and the 225th, and so on) are prosperous milestones as well. Thus, while we plan to party like we're 175, we're working on several projects that we hope will have lasting impact for the association.

I'll mention two of those that I think will be of most interest to JSE readers. With funding from the ASA, Chris Franklin and Tim Jacobbe are leading a team to develop a paper entitled "The Statistical Education of Teachers" (SET). SET will be the statistical parallel to the Mathematical Education of Teachers (MET) and its update (MET2), which is produced by the Conference Board of the Mathematical Sciences. Another major project is the national outreach campaign I mentioned earlier. We're looking to take some major steps over the coming years to increase the visibility of our profession among young people.

Challenges and Opportunities for the Profession

AR: Those projects both sound very exciting. I think we've had some good public relations as a profession lately, helped by the media attention for Nate Silver and the internet sensation of Hans Rosling, along with a general recognition that companies like Google and amazon.com have changed the world by making good use of data. We're seeing some benefits in terms of increasing numbers of students studying statistics in high school and as undergraduates. Let me ask perhaps a harder question, because it strikes me that generating interest in the discipline of statistics is different from attracting young statistics professionals to become active in ASA. Beyond enticing more people to become statisticians, what do you think can be done in order to convince younger statisticians, particularly those focused on education, to heed the advice that John Boyer gave you about how beneficial involvement with ASA can be to one's career?

RW: It is an important question. We are doing some things to encourage the involvement of younger statisticians. At the association level, we're making an effort to provide opportunities for younger statisticians to be involved in the ASA and the profession through appointments to committees. Sections are encouraging younger members to be candidates for election to section offices. Chapters have a long history of encouraging people new to the profession to take an active role in chapter leadership. We seek the input of young statisticians for articles in Amstat News and in our STATtr@k website, which is specifically aimed at young professionals. The

ASA President Nat Schenker's column for the current (February 2014) Amstat News is specifically about the topic of participation in the ASA, and his address at JSM will have a similar theme.

But more could be done. The motivations and interests of my generation are not very relevant. Not only am I no longer a young statistician, I can't even remember having been one! (By something like the mean value theorem, I figure I MUST have been young at some point.)

We need to be more proactive in asking younger statisticians what would motivate them to be involved in the ASA, and what opportunities for engagement they seek that we don't currently offer. As I said before, the strength of our association is in the commitment of members to serve and lead.

AR: Another challenge facing our profession and ASA, a related one, concerns what it means to be a statistician in the era of "big data." Let me ask a rambling question about this. What do you think about the popular field of "data science" that is getting so much attention and publicity? Is this just a trendy name for what we think of as statistics; if not, how is it related to statistics? Are you concerned that so much of what you and I might recognize as statistics is being done by professionals who don't consider themselves statisticians, might have limited background in statistics, and don't acknowledge that their work is statistical? I suspect that you take a "big tent" approach to these issues, to borrow from the title of the 2012 ASA Presidential Address by Bob Rodriguez, but feel free to address any aspect of this unfocused attempt at a question that you'd like.

RW: I am trying to deepen my understanding of data science and its relationship to statistics, and I have a lot to learn. Please think of this response as an "emerging response." It is subject to change as I learn more. With that caveat, here goes…

Sorting out the difference between "data science" and "statistics" is particularly challenging because there is no settled definition of the former, and the definition of the latter is not universally agreed upon, either. If we think of statistics, for purposes of this discussion, as the scientific discipline taught in traditional statistics departments, it seems clear that data science and statistics have substantial overlap, but are distinct in other ways. The statistical community and the data science community are both very diverse. There are many individuals belonging to that overlap group who used to call themselves statisticians, or who have degrees in statistics, that may now refer to themselves as data scientists. There are also data scientists not classically trained in statistics, but who tend to come from computer science, physics, or other disciplines. Therefore, at the risk of oversimplification (perhaps inevitable), I will call the first group "statisticians" and the second "data scientists," just for the purpose of drawing a few distinctions.

Data scientists tend to be expert in large data set curation, standardization, and access, as well as in programming, machine learning, and visualization. They play a very important but different role in business, industry and academic research. They can develop and use tools to process massive amounts of data that are increasing in real time and residing on multiple platforms, including data that are unstructured.

However, data scientists do not typically have the inclinations, training, or the tools to address the issues with data that statisticians address. It is in the DNA of statisticians to describe their assumptions, draw appropriate inferences, and quantify the limitations and uncertainty in their conclusions. Statisticians, like data scientists, look for structure in large data. In addition, statisticians guard against false discovery, bias and confounding. Statisticians, like data scientists, apply techniques to explain, predict, and forecast, but statisticians qualify these efforts with measures of uncertainty. Statisticians, like data scientists, work with existing data, but statisticians also design efficient studies to produce data with the required information. Most importantly, statisticians contribute through a discipline and profession that is well established, with theory, research, continuing education, accreditation, formally adopted ethical standards, and community.

Even though there is a significant overlap between statisticians and data scientists, the rest of the statistical community is not as connected as it can be to the community who identify themselves as data scientists. As you may know, data scientists are strongly identified with big data in the eyes of the media, funding agencies, and policymakers. Nonetheless, I am optimistic, because more and more statisticians are involved with prominent big data projects, and because media, federal agencies and policy makers see the benefits of valid statistical inference and well-designed experiments that statisticians bring to innovation, discoveries and economic development. Continuing this trend will require developing the capacity and workforce of statisticians with strong core, computational and communication skills.

We are always thinking about the diverse roles and responsibilities of a statistician as businesses, education, engineering and other sciences are becoming more and more computationally- and data-enabled, and collaborative, and what the implications of that are for our profession and our association in the future. Next week, as part of an initiative started by the ASA's presidents (see the June 2013 President's Corner in Amstat News), several statistical leaders from the ASA are meeting with a group of leaders in industries actively using big data in their business operations. The group represents healthcare, insurance, financial services, and retail. We hope to learn from their experiences as they develop their workforce in statistics or perhaps data science. For example, I'd like to know whether they even think about the distinctions between these areas, or whether their focus is on particular sets of skills, whatever those sets might be called. Next month, I'll speak on the topic of data science and statistics to a group of data scientists in New York City. I'm sure I'll know a lot more by the time these opportunities are complete.

We're also trying to identify changes that would enhance the curriculum in statistics degrees at various levels in light of the emerging areas of practice spawned by "the age of big data." We're increasing the breadth of our professional development courses to help prepare statisticians to work in these emerging areas.

The ASA is "The Big Tent for Statistics," so we take an inclusionary view when it comes to the meaning of "statistician." As new areas of practice emerge, we want to do our best to connect with them, which is a win for everyone. The new areas of practice benefit from the connection with the current statistics community, as we have knowledge, experience, and expertise to

contribute. The statistics community benefits from adding these new areas to our community, because by doing so we discover new problems to work on and new ways to approach them. There are statisticians who are currently making these connections, and these benefits are beginning to appear, but there is much more to do, and there is plenty of room under the Big Tent to work together to address big data challenges.

Bottom line: The ASA would love to be part of drawing these various communities of practice closer together.

AR: Thanks for that. In addition to what we've addressed in the previous two questions, what do you consider some other important challenges facing ASA and the statistics profession?

RW: The most important challenges we face are summed up in the two themes of the ASA's strategic plan: (1) The ASA as "The Big Tent for Statistics" and (2) Increasing the Visibility of the Profession. The first theme focuses on the society itself, while the latter focuses on the profession, but the two are deeply intertwined.

Being the Big Tent means being inclusive, and there are two specific challenges to successfully remaining an inclusive society. First, there is no guarantee the ASA will continue to be a big tent. This is a status that has to continually be re-earned. There is a natural tendency among professional organizations to splinter into separate societies. So we have to consider on a continual basis what the needs of our members are and how to meet them.

A strength of the ASA is that there is a lot of room for groups to form and thrive under the Big Tent. Chapters provide the opportunity for statisticians to network in regional groups. Sections and interest groups are a forum for members to convene around topics of common interest, and the number of sections and interest groups has grown rapidly in the past few years. The ASA's newest structure, outreach groups, allows still another means for statisticians who wish to collaborate in unique and specific ways to do so while remaining a part of the Big Tent for Statistics. The ASA Community is a software platform that allows not only for interaction of existing ASA groups but the formation of informal groups within the platform. ASA Committees address issues across a broad spectrum of statistical practice. The combined impact of these ASA groups is impressive, and vitally important to our association and our profession.

The second challenge to being an inclusive society is that we have to reach out to those who are not already under the tent. This is a big part of what I was addressing in the previous question. In particular, it is our responsibility to recognize the continual broadening of our profession, and attempt to connect with emerging areas of practice. For examples, many disciplines that have "omics" or "informatics" as a suffix have important ties to statistics. Business analytics and data science are two more examples. There are people in these communities who do not think of themselves as statisticians but who are doing work that is fundamentally statistical, yet have very little connection with the statistical community. For reasons I mentioned earlier, we need to facilitate these connections and bring communities together.

Equally challenging for us is to increase the visibility of statistics and statisticians. You might ask, "Visibility where?" It would be easier to list the places in which we are highly visible than to list all the places we aren't but should be!

As Bob Rodriguez pointed out to the ASA Board, we don't really even know what visibility would look like. What would it mean to be more visible in the sciences, in the business world, and in government? What would it look like to be highly visible for young people as they make career choices? Can we visualize the public seeing us as more than collectors of arcane numbers?

Lack of visibility is not a new problem – we've been talking about it in our profession for decades – but it seems that now is an ideal time for us to redouble our efforts, thanks to some stunning public displays of the power of statistics (Nate Silver's work, as a highly visible example) and to attention focused on how much data is being gathered and how important it is to understand it. Many of the things I've mentioned earlier – the International Year of Statistics, an international prize for statistics, collaborations with AAAS, a national outreach campaign to reach students – are entirely the result of the ASA's efforts to increase the visibility of the profession.

Fortunately, we are in an excellent position to address these challenges. The ASA's leadership is focusing energy and resources to address them. We are in sound financial shape, so we can and are making investments to broaden and strengthen the Big Tent and to increase the visibility of the profession. We have great partnerships with other statistical societies around the world who want to collaborate with us to make statistics and statisticians more visible, and we have the enthusiasm and expertise of thousands of members who volunteer their time to advance the ASA's agenda to promote the practice and profession of statistics.

AR: You mentioned Nate Silver. I must say that the highlight of the 2013 JSM for me was the ASA President's Invited Address that he delivered. And one of the highlights of that session was your skillful posing to Silver of questions submitted by audience members via twitter. What was that experience like for you?

RW: I was thrilled with the Nate Silver presentation and the turnout by the JSM participants. 2013 ASA President Marie Davidian worked very hard to make that fantastic session happen. It was a great honor and pleasure to serve as the facilitator for the Q&A. It was also slightly terrifying. We'd never done it before, and we had no way to practice. Twitter is an enormously powerful tool, and a good part of its power is in its accessibility. I was well aware that everyone who wanted to could look at the same stream I was viewing and evaluate my judgment in question selection. That was humbling, but it sure kept me on my toes. Thank you for the compliment about my role, but other people deserve the credit. I'll name two. First, Nate Silver is an easy person to interview. Second, going back to your very first question about me 40 years ago, I credit my high school speech teacher, Terri Owen, who I never saw again after high school but to whom I owe a great deal. Ms. Owen, if you somehow read this, and even more amazingly, still remember me, thank you! You can't imagine how often I've depended on what you taught me.

Wouldn't it be great if we got that kind of turnout every year for the President's Invited Address at JSM? There is almost no reason for people to miss it, regardless of the speaker. It is a chance for the statistical community at JSM to gather for a valuable shared experience. At JSM 2014, the speaker is none other than Stephen Stigler, the perfect person for our 175th anniversary. I hope we'll have a turnout that is just as spectacular!

Education Activities at ASA

AR: I want to go back to the "big tent" idea and ask a question related to education. A much-discussed concern among statisticians who specialize in education has been that statistics courses, especially introductory ones, have often been taught by mathematicians or others with limited background and experience with statistics. On many campuses, statisticians have faced an uphill battle in arguing that statistics courses, especially introductory ones, should be taught by statisticians and not by mathematicians or by professors in applied fields such as social science. I see that the ASA and MAA have recently released recommendations for qualifications of instructors of introductory statistics, which call for such teachers to have "deep knowledge of statistics as well as an appreciation of the differences between statistical thinking and mathematical thinking." Do you see any conflict between this perspective and the "big tent" attitude for statistics to be very welcoming toward professionals with a wide variety of backgrounds and interests?

RW: Actually, I see a perfect match. The ASA-MAA Joint Committee on Undergraduate Statistics, who put together these recommendations, are well aware that the demand for people to teach statistics far outstrips the number of people who are properly trained and available to teach. With that in mind, the committee focused a fair amount of attention to providing lists of resources to help people develop the needed skills. All of us would welcome these people to connect to the statistical community. If I was suddenly asked to teach a mathematics course, I would hope and expect to find resources and people to help me develop the skills needed to teach that course more effectively. It is critically important to note that these recommendations come jointly from the ASA and the MAA, which speaks to thinking broadly and inclusively about these matters.

AR: This prompts me to think about how many different constituencies within ASA contribute to statistics education. Two sections of ASA are devoted to education and teaching. Several ASA committees, including joint committees with organizations such as NCTM, AMATYC, and MAA, have education at the focus of their mission. Various ASA task forces and working groups address education issues, two current examples being the committee to revise guidelines for undergraduate programs and the one to reconsider the GAISE recommendations.

But I suspect that JSE *readers and ASA members know the least about what ASA's staff members do with regard to education. You mentioned Rebecca Nichols, ASA's Direction of Education, earlier. Can you summarize her role? And also please give us an overview of ASA's efforts in continuing education for its members.*

RW: Our education staff consists of three people: Rebecca Nichols, Rick Peterson, and Lynn Palmer. Of these three, only Rebecca devotes all of her time to education. Rick handles

continuing education, but also takes care of chapters and sections, and as Director of Programs, Lynn is a senior staff member with a wide variety of responsibilities.

As Director of Education for the ASA, Rebecca Nichols has the opportunity to work closely with the ASA Education Council and the education related committees, sections, and groups in their work to enhance statistics education through programs, workshops, webinars, publications, policy work, and other outreach initiatives.

Some of the current projects at the K-12 level with the ASA/NCTM Joint Committee include Census at School, Meeting Within a Meeting (MWM) statistics workshop for math and science teachers, Beyond AP Statistics (BAPS) workshop, free K-12 statistics education webinars for teachers, peer-reviewed Statistics Education Web (STEW) lesson plans, poster and project competitions, and publications including Bridging the Gap Between Common Core State Standards and Teaching Statistics, Making Sense of Statistical Studies, the printed GAISE Report: A Pre-K–12 Curriculum Framework, and the Statistics Teacher Network (STN) newsletter. ASA and NCTM recently released the policy statement "Preparing Pre-K–12 Teachers of Statistics." ASA and MAA recently released the policy statement "Qualifications for Teaching an Introductory Statistics Course" due to the efforts of the ASA/MAA Joint Committee. Policy work includes organizing reviews of national standards and reports, participating in forums and meetings with other societies, and engaging with the work of the Science, Technology, Engineering, and Mathematics (STEM) Education Coalition. Other outreach projects include the Educational Ambassador Program and the presidential workgroup updating the undergraduate curriculum guidelines and their associated webinar series. There are always opportunities for statisticians and statistics educators to get involved in education outreach projects.

As mentioned before, Rick manages our continuing education programs. Each year ASA organizes over 100 continuing education offerings for its members. These focus on methodology and practice as well as the use of technology in the profession. The cornerstone of this program is the more than forty Continuing Education short courses and Computer Technology workshops offered at each JSM. Other ASA conferences also offer short courses and tutorials such as the Conference on Statistical Practice, the FDA/Industry Statistics Workshop, the Quality and Productivity Research Conference, and more. The Council of Chapters sponsors Traveling Courses throughout the year hosted by ASA chapters across North America. ASA sections sponsor distance learning webinars that are viewed by statisticians all over the world. At the local level many ASA chapters organize their own conferences, short courses, and lectures.

Recently ASA has expanded its focus on continuing education to include Personal Skills Development (PSD), and Lynn is taking the lead on these. PSD will include courses, workshops and other training sometimes referred to as "soft skills" such as communication, collaboration, career planning and leadership. These offerings have already begun to appear at the Conference on Statistical Practice and in 2014 will also appear at JSM.

Pop Quiz

AR: Now, with your indulgence, let's begin what I call the "pop quiz" portion of the interview. Please tell us about your family.

RW: My wife, Sherry, and I have been married for nearly 38 years. We have nine children, plus four more what my wife calls "children-in-love," spouses or partners of my kids. My children are all grown, and they are interesting and fun. I learn from them all the time. In addition, we are in the final stages of adopting two ten-year-old boys from Haiti. I love being Executive Director of the ASA, but my favorite title is "Dad." We have one grandson, age six. "Grandpa" is a pretty great title, too!

AR: Wow, you could almost staff the entire ASA office with your immediate family! I don't know if you have any time left after ASA and family, but my next question is to describe some of your hobbies.

RW: My dad had real hobbies (model airplanes, trains, etc.), but not me. My wife and I love theater and movies across a broad spectrum, although she says that I prefer movies that involve explosions. I enjoy reading, especially listening to books on mp3. I devour those, especially during the daily commute. My tastes in literature are rather unsophisticated. But in terms of recreation, I'm probably happiest sitting in a baseball stadium on a warm summer evening watching a game with family and friends.

AR: What are some books that you've read in the past few months, and what is your favorite baseball team?

RW: Like I said, I'm not a sophisticated reader, but I am avid. I've read a series by Jonathan Maberry about a character named Joe Ledger. I've read a couple of hilarious books by Eion Colfer, whose writing is very much in the style of the late great Elmore Leonard. I howled through a series by Rick Gualtieri about "Bill the Vampire." Now I'm working my way through books by Lee Child.

Without question, the Kansas City Royals are my team. I grew up with them, and I've loved them through thick and thin. It has mostly been thin. Since moving to DC, I've also grown very fond of the Washington Nationals, and we go to several Nats games every summer.

Combining reading and baseball, I enjoy reading a baseball newsletter by Joe Sheehan and the "Rany on the Royals" blog by Rany Jazayerli.

But in the interest of full disclosure, what I read most is…email.

AR: I'm afraid that I've been adding to your email reading obligation during this interview. We're both statisticians, so I can't resist asking for some data about this. Can you tell us how many email messages you send *on a typical day? Better yet, let me make that more specific: Could you look in your "sent" folder and tell me how many email messages you sent each day for the past week?*

RW: I sent 46 messages last Sunday, 39 on Monday, 99 on Tuesday, 76 on Wednesday, 72 on Thursday, 98 on Friday, and 59 on Saturday. Monday is usually very busy, but I was traveling on Monday, so that explains the high number on Tuesday.

AR: I'm afraid that I've been adding to your email reading list during this interview. I know that you travel a good bit for your ASA role. What have been your favorite travel destinations? Perhaps you could name one or two places that you have enjoyed based on professional travel, and a couple others for which your travel was more personal.

RW: My ASA role has taken me many places, indeed, and for many reasons, but most of the travel has been to build or enhance connections with other organizations. We're the largest statistical society in the world, but we can't do everything that needs to be done on our own, and I don't know why we'd want to try. As to travel, I could list some places that I've been that are pretty cool, but what I have really enjoyed, what I have in fact been in awe of, is the generous hospitality that I have received everywhere I've been. I have been welcomed to many countries with warmth and a level of care that has been stunning and humbling. When I think about what I most have enjoyed about my professional travels, it isn't the places – it's the people.

As far as personal travel, the most fun thing I've ever done, probably ever will do, was to take most of my family to Ireland for a week. It is a big family, as previously noted, so it was an expensive trip. (In fact, my calculations now show that I cannot afford to retire until three years after my death.) But it was worth it! I don't even know how to describe the joy of that shared experience together. It's been 2.5 years since the trip, and it is still fresh on all of our minds. My grandson was too young to go on that trip, so we made the ultimate sacrifice as grandparents and took him and his parents to Hawaii about a year later. He still talks about that trip, and wonders when we are going again. (Probably not soon, unfortunately.)

AR: Here's the most fanciful question that I'll ask: Suppose that the ASA Board of Directors were to offer to pay all of your expenses for you to have dinner with three other statisticians, anywhere in the world. Whom would you invite, and where would you go?

RW: Oh my, Allan, a question like that can only get me in trouble! After all, I owe my job to the statistics community, particularly those who are ASA members. I shouldn't choose favorites. Instead, I'll tell you three TYPES of statisticians I'd love to invite to dinner: (1) people with passion about our profession and who effectively communicate that passion; (2) people who think inclusively about our profession and know how to reach out to those we are not connected with; and (3) people who understand and practice good statistical leadership. Time spent with those people would help me be a better person and a better Executive Director.

AR: I suspect that readers of this interview have already learned many things about you that they did not already know, but I'll nevertheless ask one of my standard questions: Please tell us something about yourself that you expect to come as a surprise to JSE *readers.*

RW: I once had hair and was a halfway decent tennis player. (OK, that's two things.)

AR: I don't know if this will surprise JSE *readers or not, but I see that you have a Twitter account (@Ron_Wasserstein), with which you tweet about ASA news and other items of interest to statisticians. How involved are you, and how involved is ASA, with social media?*

RW: I use Twitter regularly for matters pertaining to the ASA and the profession. I have a personal Facebook account, but I admit that I don't look at it often enough. My wife uses Facebook a lot, and keeps me up-to-date and kids, friends, friends' kids, etc. I also use LinkedIn a bit. I find these tools useful and fascinating, but I lack time to use them to their full potential. However, the ASA staff puts Twitter and Facebook to good use. @AmstatNews and @ASA_SciPol are accounts *JSE* readers may want to follow. @ASTATWORLD is the Twitter account for the International Year of Statistics, and ASA staff members are responsible for tweeting from that account as well. You can find us on Facebook by searching The American Statistical Association. Members have formed groups on LinkedIn, so we work with those groups rather than starting our own.

By the way, the ASA Community (community.amstat.org) is a form of social media that we also use heavily.

AR: Back when you were a faculty member, what was your favorite course to teach?

RW: I taught the general introductory course in statistics almost every semester for over two decades, and I never got tired of it, because it is extraordinarily challenging to teach well.

AR: How long has it been since you were teaching on a regular basis? Do you miss that?

RW: I haven't taught a regular course since starting at the ASA 6.5 years ago. I miss the fun and challenge of communicating statistical concepts. I miss students, and I miss seeing them have "aha!" moments. I don't miss grading assignments or exams.

Parting Thoughts

AR: I had intended to start wrapping up this interview at this point, but your comments about teaching introductory statistics have intrigued me. I agree completely that this course is very challenging to teach well, but let me ask you to expound a bit on that. What do you think makes the class so challenging, and how did you address that challenge when you were a faculty member?

RW: There are many factors that make it a challenge. Students come to the course with a wide variety of backgrounds, mathematical skills, and fears and expectations. Some will go on to take other courses requiring statistics, and the faculty/departments teaching those courses have expectation about what the students will know when they leave your course. For other students, this is their one exposure to the subject, so you want it to be a good one. Finding the right mix of lecture and hands-on/student led activities is tough, or at least it was for me. But these things are true of many "service courses." The differences, though, are these: (1) Other faculty teaching the course may not be trained in statistics (if you are not in a department with a lot of statisticians). That makes things like textbook selection and syllabus development challenging. (2) When

computing is necessary, the tools available for students are not always what you might hope, and some computing environments are popular with students but not especially wonderful for statistics instruction. (3) The most difficult thing for me was to develop and maintain a strong set of examples from a rich variety of disciplines that show students statistics in action and expose them well to statistical thinking. Keeping examples current and relevant is very time-consuming.

Fortunately, early in my career I found my way to the Section on Statistical Education of the ASA, which provided an enormous set of resources, the most abundant resource being experienced people who wanted to excel and to help others do so. As the years passed, the *Journal of Statistics Education* came into being, as did the GAISE Report, and other resources to help me navigate the intro course.

With each passing year, however, I became less certain of my ability to be an effective teacher. My students liked me, and the department was pleased with my work, but I always felt that I was falling way short of what was needed. Still, there was great fun in trying to get better each semester.

AR: I'm always struck by how teachers I admire are always working to improve and often feel that they are not meeting their goals for student learning. I'm willing to bet that even if you were falling short of your own goals, you were providing rich learning experiences for students and surpassing reasonable expectations.

Thanks very much, Ron, for taking the time to answer these questions so thoroughly and thoughtfully. I've enjoyed chatting with you. I have just two more questions. First, among all of your professional accomplishments as a statistician and educator and administrator, what are you most proud of?

RW: I'm wired to look at what is ahead, at what is still unaccomplished, and not to look back. Maybe the best is yet to come! Perhaps someday I will reflect on professional accomplishments, but I'm not ready for that yet. I'm still dreaming big!

I am very proud to have had the privilege of being connected with Washburn University for 40 years (and counting), and I'm thrilled to have the opportunity to work with the ASA Board, staff, and huge cadre of wonderful volunteers to provide leadership to our association and profession. I am truly blessed.

AR: Fair enough. I hope to have the opportunity to ask you this question about proudest accomplishments again in 15-20 or more years. My final question is definitely about the future: What advice do you have for those who are just starting their careers in statistics education?

RW: If you are just starting out, I encourage you to connect. There is a large and very collegial community of statistics educators willing to help you along your path to teaching excellence. The ASA's Section on Statistical Education is a great place to connect, and there are many sessions and learning opportunities organized by this section each year at the Joint Statistical Meetings. The US Conference on Teaching Statistics (every two years) and the International

Conference on Teaching Statistics (every four years, including this year) also provide opportunities to meet with colleagues. It is a wonderful community – join it!
