

Section U (Statistics) Business Meeting Minutes
February 19, 2005
Washington, DC

Present: Ivelisse Avilés, Karen Bandeen-Roche, Mark Becker, Lynne Billard, Mary Ellen Bock, Joe Cavanaugh, Kathryn Chaloner, Michael P. Cohen, William Cumberland (by phone), Bob Fay, Mary Foulkes, John Gardenier, Turkan Gardenier, Jim Gentle, Mary Gray, Madge Haven, Rick Ittenbach, Rob Kass, Wendy Martinez, Gil Omenn, Roger Pease, Cynthia Robinson, E. Siguel, Juliet Shaffer, Kate Travis, Ed Wegman

The Business meeting opened at 10 am. The minutes from the 2004 Section business meeting were approved as corrected.

Statistical review in *Science*

Rob Kass indicated that AAAS is about spreading the word about science, educating, advocacy. At the last meeting, there was a discussion with the Editor (Don Kennedy) of statistical reviewing in *Science*. *Science* had appointed Bill Cumberland to be statistical reviewer, and Bill joined this discussion by phone. The editors send papers with substantial statistical content to Bill. He described the process in place, and indicated that he had been reviewing for more than a couple of years. Initially, the editors originally had suggested about 6 papers per week for review, but compromised on about three per week, so it's manageable. The editorial staff sends him papers that take more time than other editors to review because, compared to other scientists, statisticians have to evaluate the statistical content in an area completely outside their own area of expertise, which takes more time. Content of papers varies widely. If *Science* were looking for someone else to tap, the need would be to get someone who specializes in genetics. Bill described the editorial structure, with 4-5 head editors who originally get the manuscripts and decide which reviewer gets each. There is a Board of Regional Editors (BORE) scattered all over US (see listing in *Science*). Notices of a pending review are sent by email, and the manuscripts are downloaded from a web site by the BORE editor, who has 48 hr to respond on whether further review is warranted (scale 1-10), also 1-5 degrees of certainty of the review. The BORE editor is asked to provide comments, and for suggested reviewers. *Science* then monitors who is sent manuscripts for review, to ensure against overload. The reviewing is Internet assisted, and the system is better (i.e. more user friendly) than NIH internet grant reviews system. *Science* is looking for fast triage, so as not to over-burden referees. One thing that Bill particularly values is the year-end summary of all papers, decision on each, and final resolution. *Science* is looking for judgment as to sound statistics. Bill gave examples of statistical problems found in some manuscripts, e.g. telemere lengths of children relating to telemere lengths of parents, but using a cross-sectional study without appropriate adjustment of age of parents changing over time (since it is possible people became parents at different ages over the years). Broadly, study design can be an area of concern in the review, for example, manuscripts that make inference with aggregate data (epidemiological effect), trying to make inferences to individuals. Other times, manuscripts present analyses that the reviewer cannot duplicate, not enough information or not possible to get the result, or misuse of simple statistics (Fisher's exact done multiple times on the whole table). Bill estimated the proportion turn down at this first stage at 80%. He looks at supplementary material – that's where all the analysis is done. Typically the BORE editor does not see revisions, since these go back to the in-depth reviewers. He looks for manuscripts that purport to present new methods for analyses, but in fact are just another weighted method, and he looks for any evidence of 'chasing p-values'. There have been manuscripts with no idea of multiple testing, where the authors should think about implications of that. Some of genetic papers will have pages of associations.

There was a discussion of the possibilities for strengthening the process. Given the nature of the process, where manuscripts go out to recommended reviewers, one area would be statistical genetics. In that area, it is difficult to assess the importance of the actual research being conducted. Someone in the field of statistical genetics would have an appreciation of that. Bill suggested that *Science* should expect more and more genetics papers. Rob Kass sees a negative aspect, that the person who decides that there is or is not an important statistical issue is one of the 4-5 editors. Bill Cumberland reported that he doesn't get papers without statistics, and the decisions for most papers are not quickly done. Rob Kass suggests initial

screening by people with more statistical background. *Science* accepts about 10% of submitted manuscripts; Bill Cumberland suggests it's about 10-15% of what he sees. Bill Cumberland concluded by indicating the best aspect about being a statistician is being open to a variety of fields. When asked about the duration of his term, he indicated that it was annually renewable.

E. Siguel suggested a checklist of common minimal requirements, and common errors, also minimum requirements for data. Mary Gray indicated that some journals require manuscripts with statistical content have a statistical reviewer sign off. Rob Kass will talk with the editorial staff at *Science*. Mark Becker asked how the 5 editors at *Science* are chosen. J. Shaffer is willing to make available the history of the discussions with the editorial staff of statistical review. Roger Pease looks at the references in manuscripts to see whether they cite the current version in print or 2-3 earlier versions. Kathryn Chaloner suggests a focus on specific aspects of *Science*, e.g., the need to identify bioinformatics/genetics reviewers.

Incoming AAAS President's message

Dr. Gilbert S. Omenn (incoming president of AAAS) spoke about the 2006 AAAS annual meeting. He suggested that scientists are not involved in the conversations about belief systems. Think about undergraduate science requirements, a generation ago 25% of undergraduates were scientists, now 7%!! We need to find ways to communicate. Polling data, statistical projects, science is not about facts, but about uncertainty, which we must convey in our own communication, use of terminology, the phrases used. Evidence means different things to different parts of society. Rob Kass brought up the fact that the National Association of Science Writers (NASW) will no longer meet with annually in conjunction with AAAS, but now plans to meet with the Council for the Advancement of Science Writers (CSW). This seems most unfortunate, but it is a fact. CSW is a very tiny meeting, in no way a competitor, the hope is that science writers will still come to the AAAS meeting and may cover it more. Within science writers, there is tremendous disagreement about this and some complications. Dr. Omenn indicated that he plans to continue to make the AAAS meeting newsworthy.

Statistics and Journalism

Kate Travis (NASW member) indicated that NASW wants to have continuing education, and is hoping to make statistics one of those education modules. She comes from a journal (*JNCI*) with statistical reviews, the statistical review occurs after peer review by the substantive area scientists. She is on the editorial staff at *JNCI*, and also active in NASW. She helped create workshop (Martha Alligaga, and Barry Kramer talked about clinical studies) at a 90-minute NASW workshop. Kate took course offered in January by the ASA Committee on Outreach Education. She stressed that journalists need a basic understanding of statistics. NASW would like to continue to have educational courses for its members. ASA has created a wonderful course for journalists, and it could be expanded, however there should be coordination with NASW. She suggests about 3 hour block of time with about 3 topics. ASA course takes you through examples. Council for the Advancement of Science Writing (CSW) is a similar organization to NASW. Madge Haven (from ASA staff) stressed that the budget constraints mean that the course offerings may not be very flexible. A lot of journalists are self employed, which limits their geographic ability and their funding to attend such courses. T. Gardinier suggested offering one of the short courses during the Joint Statistical Meetings (JSM).

Wendy Martinez (incoming Chair, ASA Committee on Outreach Education) said that there is still time for Strategic Initiative to ASA, and asked about a similar course for lawyers. Ed Wegman stressed that need (incoming Section U chair, and chair of CATS), and gave example in forensics. He sees increasing court challenges based on statistics, also in the areas of fingerprinting and lie-detectors. He also gave a breathalyzer example, which ignores the variability of reading.

Roger Pease suggested that a course should focus on life-or-death situations. Kate said that she just happened to call ASA at the right time, to provide link to journalists for the Committee on Outreach Education course. For the legal issues, the American College of Legal Medicine also has workshops and could offer this course. Madge indicated that the ASA wants to make the course easy to use, and will look

into making the course available. What other courses might get developed? This is a really useful, important thing to do. Wendy will work with Ed Wegman on a future course, and is planning a conference call with her ASA committee in March. Anyone welcome to come to ASA Committee meeting at the JSM in Minneapolis in August.

Mary Ellen Bock asked for any agenda items for the AAAS council. She commented on AAAS budget woes, due to drop in membership (which seems to have leveled off). AAAS is attacking its budget woes by “branding”, making a *Science* subscription not the only reason to be a member.

Section and Affiliate Reps and Proposed Symposia

Kathryn Chaloner indicated that the Medical Section is one of the larger sections, and it doesn't use all its funds, or use all their allocated AAAS fellows' slots. Overall AAAS names 1/2% of the overall membership as fellows.

Bob Fay reported that Mike Cohen will be the new chair of the ASA Committee of Representatives to AAAS.

Karen Bandeen-Roche proposed “Grand Challenges for Clinical Trials”

Bob Fay recalled reading “Science for All Americans”, which shows that the progress of science is one step forward and two steps back. He proposed a symposia based on an idea from Psychology on sharing of data, e.g., functional imaging. Michael Gonzaniga may be a potential speaker.

Budget

Regarding the new scheme for AAAS budget allocations to sections, like every organization, AAAS is on yearly budget, the auditors insist on yearly expenditure of funds, with no roll-over. The allocation to Section U will be approximately the same, but the balance needs to be spent down every year, and not carried over, as in the past.

Nominating committee report:

Joel Greenhouse (Chair) sent in a report on the activities of the Section Nominating Committee (which also included Peter Bickel, Dave DeMets, Mitch Gail, Earl Pollock and John Rolph). He indicated that for next year, the ballot will include the following nominees:

Chair Elect:	Ron Brookmeyer (Johns Hopkins), Don Guthrie (UCLA –retired)
Member-at-Large:	Ed Korn (NCI), Julie Shaffer (UC-Berkeley)
Nominating Committee:	Emery Brown (Mass General), Beth Gladen (NIEHS), Carol Redmond (U Pitt), Jim Rosenberger (Penn State)

The meeting was adjourned at 12:15pm

Mary A. Foulkes, Secretary
AAAS Section U