Obituary

In Memoriam: Sholom Wacholder, PhD

Harvey Risch*

* Correspondence to Dr. Harvey Risch, Department of Chronic Disease Epidemiology, Yale School of Public Health, 60 College Street, New Haven, CT 06510 (e-mail: harvey.risch@yale.edu).

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Dr. Sholom Wacholder, a major figure in the modern development of epidemiologic methods and their biostatistical underpinnings, passed away on October 4, 2015, at the age of 60 years. At the time of his death, Dr. Wacholder was a senior investigator in the Biostatistics Branch of the Division of Cancer Epidemiology and Genetics at the National Cancer Institute, National Institutes of Health.

One day in the spring of 1982, when I was a postdoctoral fellow in epidemiology at the University of Washington, I was seated in a large lecture hall for the weekly epidemiology seminar. The individual in front of me (Sholom) turned to his neighbor to ask—and I have no idea why this was relevant to the seminar—how to say “watermelon” in Hebrew. In response, I blurted out, “avatiach.” Thus began a more than 30-year friendship and colleagueship.

At the University of Washington, Sholom was finishing his doctor of philosophy degree in biostatistics, but he was also interested in seminars in epidemiology. Upon graduation that year, Sholom took his first professorship in the Department of Epidemiology and Biostatistics in the medical school at McGill University in Montreal, Canada. Six months later, I moved to the University of Toronto in Canada, which, if not physically adjacent to Montreal, at least had some psychological proximity within the small Canadian academic epidemiology community of the early 1980s. Both Sholom and I were teaching epidemiologic methods to masters and doctoral students. On a number of occasions, we discussed our approaches to this teaching. For the standard material on regression analyses—linear, unconditional and conditional logistic, Cox and Poisson—Sholom advocated starting with the Cox model, from which all the others could be derived as special cases, whereas I began with linear and then moved successively through unconditional logistic, conditional logistic, etc., with each subsequent form incrementally adding to and reinforcing the previous one. Sholom’s approach was mathematical; he saw the formal relationships in a hierarchical framework, whereas I used a more pedagogical approach, making it easier for students to crystallize the underlying methods of regression and the nuances appropriate for each type of epidemiologic study design and its corresponding analysis framework. Loosely speaking, Sholom was miklal ufrat (from the general to the specific), and I was miprat uchil (from the specific to the general), which Sholom would have recognized from Rabi Yishmael’s 13 principles of interpretation recited every morning by traditional Jews.

Sholom had intellectual yichus (pedigree, stature). His father, Rabbi Dr. BenZion Wacholder, was a renowned professor of Talmud and Rabbinics and a consummate teacher. Even as
Sholom made his career in a field of secular knowledge, he nevertheless carried on his father’s legacy of communicating his knowledge to others: students, trainees, colleagues, peers, friends, and acquaintances. This is not to say that Sholom did not possess a wealth of Jewish erudition. In high school, he studied in Orthodox yeshiva in Israel, and he was well grounded in the Bible, Talmud, Midrash, and commentaries. Sholom had a comprehensive knowledge of the technical workings of the Jewish calendar. However, just as his father had proposed novel and sometimes controversial hypotheses, Sholom was not afraid to pursue scholarly ideas wherever they led.

When Sholom was appointed as an editor of Epidemiology in 2002, he set out in an essay his philosophy about what he wanted to contribute to epidemiology: “improved methods [to] strengthen design, fieldwork, analysis and interpretation of epidemiologic studies” (1, p. 618). He was also explicit that he wanted to see the journal publish articles that were accessible to nonstatistician readers, articles that would “transform seemingly arcane statistical ideas (whether well established or cut-ting edge) into practical epidemiologic tools” (1, p. 618). This focus, both in the pursuit of new scientific knowledge and in its communication to peers, characterized his own approach to research. In fact, in an early set of important papers on the selection of controls in case-control studies (2–4), he laid out his organized principles for the representativeness and unbiasedness of subjects and information in epidemiologic studies, what constitutes the essential scientific nature of the field of chronic disease epidemiology.

While still at McGill, Sholom helped to develop and popularize the case-cohort study design (5) that had been proposed by Prentice (6). He later developed the kin-cohort study design (7), which has proven fruitful for estimating penetrance of high-risk disease mutations. Sholom showed that nondifferential misclassification with errors that negatively correlate with true underlying values can produce systematic biases away from the null (8). He developed the false-positive report probability, an easily accessible Bayesian parameter that conveys information about the probability of no true association in the face of an observed statistically significant result (9). His genetic “emperor-has-no-clothes” paper (10) on the very small benefit of adding 10 common genetic polymorphisms associated with risk of breast cancer to various risk-prediction models gained substantial attention in the clinical community and helped to focus single nucleotide polymorphism discovery more on detection of etiologic processes rather than on clinical utility per se. More recently, Sholom restated his philosophy about scientific deduction in epidemiologic studies (11). He emphasized that evidence should be compiled and weighed in an organized, cognitive way and not solely by reliance on preconceived P value thresholds, however strict their levels. I continually try to make the same case to my students, but Sholom’s essay seems to convince them much more successfully than anything that I myself tell them.

Sholom published many more papers on both methodologic and substantive research in epidemiology and contributed greatly to the research areas in which he was involved, including human papillomavirus–associated cancers and their prevention, studies of cancers in children and adolescents, and the Cancer Genetic Markers of Susceptibility (CGEMS) studies. He was a member of the American Epidemiologic Society and a Fellow of the American Statistical Association. Sholom served on the editorial boards of numerous journals, including the American Journal of Epidemiology. It was his nature to see straight through to the crux of issues and then to be able to explain them in easily understandable terms. For this, he was sought as an adviser by many, many colleagues. Sholom was a true scholar of epidemiology who was thoughtful, rigorous, and engaging. His premature loss leaves a big gap.

In the Mishnah Pirkei Avot, Yehoshu’a ben Perachyah says, “‘Aseh lecha rav, uqneh lecha chaver”—Provide for yourself a teacher, and acquire for yourself a friend (12, p. 265). How much better when both are the same person. Sholom was both.

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Author affiliation: Department of Chronic Disease Epidemiology, Yale School of Public Health, New Haven, Connecticut (Harvey Risch).

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REFERENCES