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Kevin Jon Williams* (kjwilliams@temple.edu), Section of Endocrinology, 3322 North Broad Street, Medical Office Building, Room 205, Philadelphia, PA 19140. *Mathematical clarity versus an entrenched, out-of-touch bureaucracy: How we reformed a small well-run medical match – and then the largest but badly run medical match.*

Medical school seniors seek hospital residencies for further clinical training. A mechanized system “matches” applicants based on rank-order lists of preferences. How we built & refined this unusual system is a compelling story of pedagogy, human nature, the power of incentives, honesty in advertising, fairness, the generosity of teachers, & fundamental principles of mathematics.

In 1951 the profession adopted a mechanical match to curb aggressive recruitments by hospitals. A full decade before Gale & Shapley’s landmark paper (1962), the algorithm generated mathematically stable matches. One of only two published first-hand accounts states that students in 1951 objected that a proposed algorithm gave hospitals “a tremendous edge” over applicants but that the problem was fixed.

In 1981 we independently published that the matching algorithm favored hospitals over students (hospital-optimal per G&S) despite widespread statements to the contrary. Medical students & hospital residency directors wanted a student-optimal algorithm, yet it took until 1996 & 1998 to force the change.

My thanks to the mathematicians who dispassionately reviewed my next paper (1995), residency directors who stood up for our trainees, & medical students in 1951 & the 1990s who pushed for reform. (Received January 29, 2019)