Trauma claims most of its victims quickly. Half are "dead on arrival" at a hospital, casualties of highway accidents, homicide, and suicide. The most promising remedies are preventive and nonmedical: handgun control, stiffer penalties for drunk driving, laws requiring motorcyclists to wear helmets.

Another 30 percent of trauma deaths occur between one and two hours after injury. Here, the critical factor is how fast the victim reaches surgery. The typical U.S. hospital's emergency room is inadequate, says Trunkey. A 1980 study of Portland, Oregon, hospitals showed that it took surgeons an average of one hour and 15 minutes to get to the hospital in response to emergency calls. Needed are specially equipped trauma centers with surgeons and anesthesiologists on duty around the clock.

In 1970, for example, West Germany opened special trauma centers along its high-speed *autobahns*. The result: Deaths from motor-vehicle accidents dropped from 16,000 annually to 12,000 during the 1970s. But few U.S. communities are willing to bear the high costs of modern trauma centers. The federal government, meanwhile, skimps on research into the little-understood multiple organ failures and infections that account for the remaining 20 percent of trauma fatalities, which occur days or weeks after the injury.

Trauma costs the United States some $50 billion annually in medical expenses and lost production, not to mention scores of thousands of young lives. That news, says Trunkey, deserves some headlines.

Computerizing Baseball

"The Microchipped Diamond" by Sy Weissman, in *Psychology Today* (Aug. 1983), P.O. Box 2990, Boulder, Colo. 80302.

Casually citing arcane statistics—"Reggie Jackson bats .367 under a full moon"—has become the stock-in-trade of television's baseball broadcasters. And slowly but surely, the computers that manufacture such hairsplitting data are finding their way into major league dugouts.

For the New York Yankees, Oakland A's, and Chicago White Sox, 1983 has been the second season of the computer age. According to Weissman, a TV science producer, the teams' managers can predict a batter's performance by "inning, score, the batter-pitcher match-up, number of outs, [and] number of men on base, as influenced by such physical circumstances as temperature, humidity, wind velocity and direction, park dimensions, playing surface, total attendance, and date." (One statistician has even uncovered a "Birthday Effect": Players exceed their season batting average by 50 points in games on their birthdays.)

Such data help managers decide, for example, which player to use as a pinch hitter. The Yankees' electronic "tenth player" offers odds on the

results of using a particular tactic in any given situation.

Computers are also at work off the playing field. For example, Oakland's best pitchers were startled to learn at contract negotiation time that the team's computer attributed much of their success to extraordinary catches by their teammates in the outfield. Major league scouts track the careers of 3,000 U.S. minor league players by printout. Such traditional scouting reports as "He's got an arm that can throw a lamb-chop past a wolf" may no longer suffice.

But baseball romantics need not despair, writes Weissman. Discussions of America's favorite pastime have always been punctuated by statistics and probabilities—batting averages, earned run averages, strikeout percentages. Now fans will just have more numbers to chew over during the TV commercials. Computers will inevitably spread to the remaining 23 major league teams, but the point of the game will remain the same: to beat the odds.

As Casey Stengel observed some years ago, "Baseball ain't nothing more or less than the science of getting 27 outs."

When Scientists Betray Truth

"Madness in Their Method" by Nicholas Wade, in *The New Republic* (June 27, 1983), 1220 19th St. N.W., Washington, D.C. 20036.

When scientific fraud comes to light, it is often cited as proof that "the system works." Organized science is self-policing, say its champions, and cheaters can count on being caught. According to Wade, a *New York Times* editorial writer, the surge of scientific plagiarism and data fabrication cases over the past 12 months suggests just the opposite.

In principle, science's self-regulation depends on "peer review." Specialists assess proposals for research grants and manuscripts submitted for publication. Other scientists repeat, step-by-step, the experiments reported by their colleagues in scholarly journals.

In fact, contends Wade, scientists rarely replicate colleagues' work; there is no glory in doing something already done by someone else. And peer review has failed to detect many recent scandals.

For example, noted heart researcher John Darsee spent 14 years, mostly at Emory University and Harvard Medical School, fabricating data, but he wasn't found out until Harvard colleagues skeptical of his productivity secretly observed him at work. Even then, the directors of his laboratory (who had happily shared credit with Darsee for some of his findings) and a blue-ribbon committee appointed by the dean of the Harvard Medical School cleared him of any wrongdoing. It took a truly independent panel of the National Institutes of Health to uncover Darsee's scam.

Modern science is not only a quest for truth, observes Wade. It is a career. And cutting corners can speed success. Prominent scientists hire researchers like Darsee who receive little supervision and are under pressure for publishable "results." The apprentice system should be re-