Required for next week: February 6, 1996

- "Ecological regression in voting rights cases", S.P. Klein and D.A. Freedman, *Chance* **6**(3), 38–47 (1993). Come prepared to discuss this article and ask questions about the parts you didn't understand.
- The final part of short project 4, your essay proposal, is due. Sample proposals are on my home page (and were handed out in class).

Further reading on athletic performance

- Wainer, H. (1993). How much faster can humans run than swim? *Chance* **6**(1), 17–21. World record times in swimming and track are analysed to try to estimate the relative efficiency of running and swimming. The short answer is that humans can run about three to four times as efficiently as they can swim.
- Wainer, H. and DeVeaux, R.D. (1994). Resizing triathlons for fairness. *Chance* **7**(1), 20–25. The authors argue that the swimming portion of triathlons is too short, and the cycling portion too long, relative to the best performances available in swimming, running and cycling, and as a result swimmers are at a disadvantage, and probably tend not to compete in todays triathlons. For example, the Olympic triathlon has a 1.5 km swim, a 10 km run, and a 40 km cycle. The suggested distances are a 2.7 km swim, 10 km run, and a 22.4 km cycle.

Least squares regression

The relationship between two variables in a set of data is often described by plotting one variable against the other: salary against years of experience, for example. It is not uncommon to summarize the relationship by a line or curve (just as we sometimes summarize data on a single variable by the mean or median). Very often, this line or curve is computed using an algorithm called least squares; the idea is that the resulting line or curve provides the 'best possible' fit to the data. The phrases "least squares line" and "regression line" are often used interchangeably to describe the summary line (or curve), and "least squares" and "regression" are also used interchangeably to describe the method for computing the summary line.