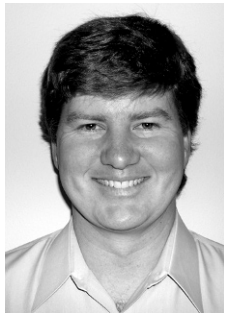
Editor's Letter

Mike Larsen,
Executive Editor



Dear Readers,

CHANCE now includes all content in print and online for subscribers and libraries. This will make *CHANCE* more accessible and useful to subscribers and attractive to potential authors. As you experience the online version, please feel free to share your impressions and suggestions at *chance@iastate.edu*.

The interaction between statistics and health and medicine are well represented in this issue. Articles and columns concern measuring health disparities, studying sleep and sleep disorders, defining and measuring disability, using machine learning in medical diagnosis, comparing effectiveness of antibiotics, and the emerging fields of pharmacogenetics and pharmacogenomics. Ken Keppel and Jeff Pearcy describe Healthy People 2010, a national initiative to coordinate health improvement and prevent disease. Of course, you have to measure disease rates if you want to judge performance. How many data sources do you think are involved? Numerical examples contrast absolute and relative measures of disability.

Two articles concern sleep research. Despite the common theme, after introductions, the two articles differ significantly in data and methods. Brian Caffo, Bruce Swihart, Ciprian Crainiceanu, Alison Laffan, and Naresh Punjabi discuss data on transitions among sleep states gathered during overnight laboratory observations. Statistical matching plays an important role in the design. James Slaven, Michael Andrew, Anna Mnatsakanova, John Violanti, Cecil Burchfiel, and Bryan Vila report on a study involving actigraphy measurements on a large group of police officers. The officers wear monitors, which record activity levels every minute, for 15 days. Statistical measurements of data quality are important in this study.

How would you define disability? How would you measure it in a sample survey? Michele Connolly explains why statistical description of disability in the population is both complicated and important. Michael Cherkassky examines two machine learning, or statistical learning, methods for use in medical diagnosis. Cross-validation is used to aid model selection. Methods are applied to three data sets. Cherkassky is a high-school student and award winner in the 2008 ASA Intel International Science and Engineering Fair.

In the Visual Revelations column, Howard Wainer tells us about Will Burtin and his contributions to scientific visualization. Burtin's data set was the basis of the graphics contest announced in the previous issue. Winners of the graphics contest will be announced in the next issue. Wainer presents Burtin's original, as well as his own, graphical interpretation of the data in this issue.

In Mark Glickman's Here's to Your Health column, Todd Nick and Shannon Saldaña discuss pharmacogenetics and pharmacogenomics. Besides being dream words for Scrabble players, these refer to developments at the frontier of science and medicine. These are rich and challenging areas for statistical collaboration.

Two articles have sports themes. Bill Hurley examines the first-year performance of hockey sensation Jussi Jokinen and how one can assess exceptional performance. This article could provide nice examples for instructors of regression to the mean and shrinkage estimators. Lawrence Clevenson and Jennifer Wright compute expected returns to punting or going for a first down on fourth down in professional football. Several assumptions and statistical modeling of probabilities of various events are required. This work was part of Wright's master's degree paper.

To complete the issue, Jonathan Berkowitz brings us his Goodness of Wit Test column puzzle. Berkowitz gives us the hint that some degree of pattern recognition in the answers to clues will be useful (and fun!).

I look forward to your comments, suggestions, and article submissions in 2009.

Enjoy the issue!
Mike Larsen