

Colorado-Wyoming Chapter

Details on Spring Meeting (April 20th)
Rick Katz Talk at School of Mines (April 27th)
Job Opportunity Scientist II Fair Issac.

Chapter Spring Meeting Friday April 20th
National Center for Atmospheric Research Mesa Lab, Boulder

Once again the Spring Chapter meeting is being held at the National Center for Atmospheric Research's beautiful NCAR lab. Located in the hills above Boulder, the setting for the meeting is alone worth the trip. More details about the lab are at <http://eo.ucar.edu/what/arch1.html>. We have talks covering a wide variety of topics. This reflects the wide variety of interests within our group. Again, if you are interested there is a tour of the Vislab prior to the beginning of the talks. Beautiful weather guaranteed.

Tentative Schedule

8:45 - 9:30	Coffee and Refreshments
9 - 9:30	Vislab Tour
9:30 - 9:45	Welcome
9:45-10:15	Ben Houston Statistical Process Control
10:15-10:30	Yu Yang (CSU) Estimation for Non-negative
	Levy-driven Ornstein-Uhlenbeck Processes
10:30-10:45	Bo Li (GSP)
	The ``Hockey Stick" and the 1990s: A
	Statistical Perspective on Reconstructing Hemispheric Temperatures
10:45 - 11:15	Break
11:15-12:00	Kari Caufman (UNC- SAMSI)
	Covariance Tapering for Likelihood Based Estimation in Large
	Spatial Datasets
12:00-12:15	Sonya Heltshe (UCHS)
	Length-biased sampling in cancer screening with
	variable test sensitivity
12:15-1:15	Lunch
115-130 C	Chapter Activities
130-2:15	Hari Iyer (CSU)
	Fiducial Inference of R. A. Fisher -- History, Applications,
	and Generalizations
215-230	Brandi Wagner - Health Science
	Permutation Based Adjustments for the Significance of Partial
	Regression Coefficients in Microarray Data Analysis
230-245	Mark Labovitz (CU - Denver)
	Simulating the Behavior of Target Maturity Funds
245-3	Break
3-315	Ashlyn Hutchinson (Mines)
	A Comparison of Methods to Determine Bioequivalence of Topical
	Dermatological Drug Products
3:15 - 4	Brian Wien (Gilead)
	Multiple Comparisons in Clinical Trials for Regulatory Purposes
4 - 5	Reception - beer and wine.

Directions:

Directions to the Mesa lab are found below. Also note that NCAR runs a shuttle service that connects with RTD buses. Contact me for further details.

<http://www.ucar.edu/org/mesalabmap.shtml>

Selected Abstracts

Multiple Comparisons in Clinical Trials for Regulatory Purposes: A
Brief Overview with Discussion

Brian L. Wiens
Gilead Colorado, Inc.

We consider the problem of multiple hypothesis tests in clinical trials aimed at supporting regulatory approval of a new medical therapeutic. Sponsors (generally pharmaceutical companies) must plan a

multiple comparison procedure that allows for precise differentiation of an investigational product compared to placebo. This often begins with specification of one or more primary endpoints, one or more secondary endpoints, etc. This can be complicated by the use of multiple treatment groups such as multiple doses or multiple regimens of the investigational product. The current trend seems to be toward using more complicated study designs due to factors such as increased sophistication of clinical trial specialists and a desire for faster, more efficient drug development. We discuss the regulatory hurdles and some ways that statisticians are approaching them, including some state-of-the-art procedures for handling multiple comparisons such as fallback, gatekeeping and tree-structured tests.

Covariance Tapering for Likelihood Based Estimation in Large Spatial Datasets

Cari Kaufman, Statistical and Applied Mathematical Sciences Institute (SAMSI) and National Center for Atmospheric Research (NCAR)

Likelihood-based methods such as maximum likelihood, REML, and Bayesian methods are attractive approaches to estimating covariance parameters in spatial models based on Gaussian processes. Finding such estimates can be computationally infeasible for large datasets, however, requiring $O(n^3)$ calculations for each evaluation of the likelihood based on n observations. I will discuss the method of covariance tapering to approximate the likelihood in this setting.? In this approach, covariance matrices are ``tapered,'' or multiplied element-wise by a compactly supported correlation matrix.? This produces matrices which can be manipulated using more efficient sparse matrix algorithms.? I will present two approximations to the Gaussian likelihood using tapering and discuss the asymptotic behavior of estimators maximizing these approximations.? I will also present an example of using the approximations in a Bayesian model for the climatological (long-run mean) temperature difference between two sets of output from a computer model of global climate, run under two different land use scenarios.

Fiducial Inference of R. A. Fisher -- History, Applications, and Generalizations

Hari Iyer, Department of Statistics, Colorado State University

R. A. Fisher introduced the FIDUCIAL ARGUMENT which he used to derive confidence intervals for the difference between two normal means when the variances are unequal -- the so called Behrens-Fisher problem. He also used this approach to derive interval estimates in several other situations. However his contemporaries found a number of shortcomings with the fiducial method. It is safe to say that the fiducial method eventually fell into disfavor among statisticians. Recently the fiducial method appears to be enjoying a revival of sorts. In this talk I will give a brief overview of the history of fiducial inference, give examples and applications of the fiducial argument, and discuss recent generalizations that makes the fiducial approach a powerful tool for deriving inference procedures. Asymptotic properties? and small sample simulations confirm that fiducial procedures have excellent operating characteristics in general. [Based on joint work with my colleagues Jan Hannig, Jack Wang, and several former and current PhD students from the department of statistics at Colorado state university].

Rick Katz Seminar at School of Mines Friday April 27th
"Assessing the quality and economic value of weather and climate forecasts"
3:00 pm in Chauvenet Hall 143,
For further information see
http://www.mines.edu/Academic/macs/About_Us/Colloquia/

ABSTRACT:

Much of the research on evaluating the quality and economic value of imperfect information, such as forecasts, has been either performed within the meteorological community or at least motivated by meteorological applications. Perhaps the most noteworthy aspect is the ability to produce well-calibrated probabilistic weather forecasts, through a variety of objective and subjective approaches. I will point out some connections to statistics, including the concept of sufficiency. I will also present some valuation puzzles, illustrating why it is so difficult to draw any general conclusions about the

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economic value of weather and climate forecasts.

BIO:

Richard W. Katz is a Senior Scientist in the Institute for Study of Society and Environmental, National Center for Atmospheric Research, Boulder. He received a Ph.D. in statistics from Pennsylvania State University in 1974. He was one of the founders of NCAR's Geophysical Statistics Project. His current interests include the application of the statistical theory of extreme values to climate change.

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