

July 2008

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## World Congress approaches

The Seventh World Congress in Probability and Statistics, jointly sponsored by IMS and the Bernoulli Society, will be held in Singapore from July 14 to 19, 2008. For those planning to attend, on pages 14–15 Sau Ling Wu outlines some of Singapore's highlights, including those for culture vultures, shoppers and epicures! According to Raffles Hotel, any visit is incomplete without a Singapore Sling—an intoxicating cocktail much like the city itself, with its fascinating blend of cultural influences.

Check the Congress website for further information as the date draws nearer: <http://www2.ims.nus.edu.sg/Programs/wc2008/>



Spot the similarities! Small wonder that Singapore's top-notch performance centre, The Esplanade [below], is known affectionately by locals as "The Durian". The fruit [above] has a distinctive aroma so strong that it is forbidden to eat it on public transport!



We are pleased to announce the 2009 IMS Medallion Lecturers: **Peter Bühlmann**, **Tony Cai**, **Claudia Klüppelberg**, **Sam Kou**, **Gabor Lugosi**, **David Madigan**, **Gareth Roberts** and **Gordon Slade**. The 2008 Special Invited Lecturers are: **Richard Durrett** (Wald Lectures); **Peter McCullagh** (Neyman Lecture); and the eight Medallion Lecturers: **Martin Barlow**, **Peter Bartlett**, **George Casella**, **Mark Low**, **Zhi-Ming Ma**, **Mary Sara McPeck**, **Alistair Sinclair** and **Wendelin Werner**

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## IMS Members' News

### Richard A. Johnson receives Carver Medal

Richard A. Johnson, Professor in the Department of Statistics at the University of Wisconsin–Madison, has been selected to receive the 2008 Carver Medal from the Institute of Mathematical Statistics. The presentation of the medal will take place July 14, 2008, at a special ceremony at the IMS Annual Meeting in Singapore.

Professor Johnson receives the award “for exemplary service and patient wisdom in the creative administration and guidance of IMS programs in different roles over two decades.”

The Carver Medal was created by the IMS in 2002, in honor of Harry C. Carver, Founding Editor of the *Annals of Mathematical Statistics* and one of the founders of the IMS. The medal is for exceptional service specifically to the IMS.

Look out for a profile of Richard soon!

### Academy of Athens elects George Roussas

Distinguished Professor George G. Roussas, Department of Statistics at the University of California, Davis, who is an IMS Fellow, has been elected a Corresponding Member of the Academy of Athens, Greece, in the field of Mathematical Statistics. Founded in



George Roussas

1926, the Academy's objective is the cultivation and advancement of the sciences, humanities and fine arts.

### ASA Election Results

Sastry Pantula is the next President-Elect of the American Statistical Association. Sastry is head of the North Carolina State University Statistics Department and Director of the Institute of Statistics.

### American Statistical Association announces 53 new Fellows

The ASA has announced the election of 53 Fellows, among whom two are IMS Fellows: Roger Koenker, University of Illinois at Urbana-Champaign, and Yacine Aït-Sahalia, Princeton University. Twelve more are IMS members: Subhabrata Chakraborti, University of Alabama; Xu-Feng Niu, Florida State University; Brani Vidakovic, Georgia Institute of Technology; Daniel S. Nettleton, Iowa State University; Yongzhao Shao, Iowa State University; Aparna V. Huzurbazar, Los Alamos National Laboratory; Alyson G. Wilson, Los Alamos National Laboratory; Hulin Wu, University of Rochester; Emmanuel Yashchin, IBM Thomas J. Watson Research Center, New York; Montserrat Fuentes, North Carolina State University; John J. Peterson, GlaxoSmithKline Pharmaceuticals, Collegeville, PA; and Joseph W. Hogan, Brown University. The full list is at <http://www.amstat.org/pressroom/index.cfm?fuseaction=2008fellows>

The recipients received the honor in recognition of their outstanding professional contributions to and leadership in the field of statistical science. The ASA Fellows will be presented at a ceremony on Tuesday, August 5, at the Joint Statistical Meetings in Denver.

### New IMS Program Secretary

The IMS Program Secretary is Guenther Walther, who is Professor of Statistics at Stanford University. His term runs until August 2009. The Program Secretary coordinates information for the IMS about meetings, and proposes locations and dates of future annual, regional and special topics meetings. For information on IMS sponsorship of meetings and workshops, see [www.imstat.org/program/numbered.htm](http://www.imstat.org/program/numbered.htm) and [www.imstat.org/program/workshop.htm](http://www.imstat.org/program/workshop.htm)



Guenther Walther

## Bayesian Analysis now IMS-Supported

*Bayesian Analysis* (BA) is the official journal of ISBA, the International Society for Bayesian Analysis. It is the latest journal to become IMS-supported, as described at [www.imstat.org/publications/supported.html](http://www.imstat.org/publications/supported.html), joining the *Annales de l'Institut Henri Poincaré (B)* and *Bernoulli*. *Bayesian Analysis* is an open access journal, published quarterly online. Each issue consists of about 10 papers, usually including a discussion paper with rejoinder. Articles are posted at [ba.stat.cmu.edu/forthcoming.php](http://ba.stat.cmu.edu/forthcoming.php) as they are accepted.

BA's Editor-in-Chief is Bradley P. Carlin, Mayo Professor in Public Health in the Division of Biostatistics, School of Public Health, University of Minnesota. Commenting on the deal with IMS, Brad says, "We are very excited by our emerging publishing partnership with IMS, and are confident it will greatly expand the usefulness and accessibility of *Bayesian Analysis* for members of ISBA, IMS, and the statistical community at large."

IMS and ISBA came to a deal earlier this year on joint membership, too: IMS members are entitled to a 25% discount on the ISBA membership dues, and ISBA members can join (or renew with) IMS at 25% off the regular IMS dues rate. See <https://www.imstat.org/secure/orders/IndMember.asp>



Brad Carlin, Editor-in-Chief of Bayesian Analysis



## Citation Statistics report

The International Mathematical Union, in conjunction with IMS and the International Council on Industrial and Applied Mathematics has released their joint *Citation Statistics* report. Citation-based statistics are often used to assess scientific research, but the report strongly cautions against over-reliance on citation statistics such as the impact factor and h-index. These are often promoted because of a belief in their accuracy, objectivity, and simplicity, but these beliefs are unfounded.

Among the report's key findings:

- Relying on statistics is not more accurate when the statistics are improperly used. Indeed, statistics can mislead when they are misapplied or misunderstood.
- The apparent objectivity of numbers can be illusory. The meaning of a citation can be even more subjective, and less understood, than peer review.
- Over-reliance on citation data can lead to a shallow understanding of

research—  
an under-  
standing  
that is  
valid only  
when  
reinforced

by other judgments. Numbers are not inherently superior to sound judgments.

The report promotes the sensible use of citation statistics in evaluating research and points out several common misuses. While the authors (Robert Adler, John Ewing and Peter Taylor) recognize that assessment must be practical and that easily-derived citation statistics will be part of the process, they caution that citations provide only a limited and incomplete view of research quality. Research is too important, they say, to measure its value with only a single coarse tool.

The report is available as a free download from the IMS website at <http://imstat.org/publications/>



## IMS Editors

### IMS Journals and Publications

*Annals of Statistics*: Susan Murphy & Bernard Silverman

<http://imstat.org/aos/>

*Annals of Applied Statistics*: Bradley Efron, Stephen Fienberg, Michael Newton & Michael Stein

<http://imstat.org/aoas/>

*Annals of Probability*: Gregory Lawler

<http://imstat.org/aop/>

*Annals of Applied Probability*: Edward Waymire

<http://imstat.org/aap/>

*Statistical Science*: David Madigan

<http://imstat.org/sts/>

*IMS Lecture Notes – Monograph Series*: Anirban DasGupta

<http://imstat.org/publications/lecnotes.htm>

*IMS Collections*: Anirban DasGupta

<http://imstat.org/publications/imscollections.htm>

*NSF-CBMS Regional Conference Series in Probability and Statistics*:

<http://imstat.org/publications/nsf.htm>

### IMS Co-sponsored Journals and Publications

*Electronic Journal of Statistics*: Larry Wasserman

<http://imstat.org/ejs/>

*Electronic Journal of Probability*: Andreas Greven

<http://www.math.washington.edu/~ejpecp/>

*Electronic Communications in Probability*: David Nualart

<http://www.math.washington.edu/~ejpecp/ECP/index.php>

*Current Index to Statistics*: George Styan

<http://www.statindex.org>

*Journal of Computational and Graphical Statistics*:

David van Dyk

<http://www.amstat.org/publications/jcgs/>

*Statistics Surveys*: Jon Wellner

<http://imstat.org/ss/>

*Probability Surveys*: David Aldous

<http://imstat.org/ps/>

### IMS Supported Journals

*Bayesian Analysis*: Brad Carlin

<http://ba.stat.cmu.edu/>

*Bernoulli*: Holger Rootzén

<http://isi.cbs.nl/bernoulli/>

*Annales de l'Institut Henri Poincaré (B)*: Alice Guionnet

<http://imstat.org/aihp/>

### IMS Affiliated Journals

*ALEA: Latin American Journal of Probability and Statistics*:

Claudio Landim

<http://alea.impa.br/english/>

*Probability and Mathematical Statistics*: W. Szcotka,

A. Weron & W.A. Woyczyński

<http://www.math.uni.wroc.pl/~pms/>

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# Workshop and Meeting reports

**Partha Lahiri and Eric V. Slud report on the workshop *Bayesian Methods that Frequentists Should Know*, held at College Park, MD, USA, from April 30 to May 1, 2008:** The Statistics Consortium at the University of Maryland, College Park, hosted its first two-day workshop on *Bayesian Methods that Frequentists Should Know* on April 30 and May 1, 2008. The event was co-sponsored by the IMS, the Office of Research and Methodology, National Center for Health Statistics, Survey Research Methods Section (SRMS) of the American Statistical Association, and the Washington Statistical Society. The workshop was intended to bring out the potential attractive features of Bayesian statistics in solving real life problems, including complex problems in sample surveys and official statistics.

There were six invited sessions featuring the following invited speakers and discussants: **James O. Berger**, **Sudip Bose**, **Snigdhanu Chatterjee**, **Stephen E. Fienberg**, **Malay Ghosh**, **Abram Kagan**, **Roderick J.A. Little**, **Thomas A. Louis**, **Carl N. Morris**, **J.N.K. Rao**, **Nathaniel Schenker**, **Eric V. Slud**, and **Alan M. Zaslavsky**.

The average attendance in the sessions was about 100. A special attraction of this workshop was a poster session, held the first evening. Ten posters were displayed in an informal setting. Refreshments and drinks were served during the session. There were no parallel sessions in the entire meeting, to enable participants to attend all sessions, including the poster session. The invited sessions and the poster session together covered a wide range of topics including Bayesian methods in public policy, missing data problems, objective prior selection, small area estimation, sample surveys, relationship between parametric bootstrap and Bayesian methods, and accurate approximation to posterior densities. The

workshop slides can be found at the workshop website <http://www.jpsm.umd.edu/stat/workshop>.

The role of the UMD Statistics Consortium is to identify and implement mechanisms that take advantage of the expertise and strength in Statistics across the campus to create a higher level of visibility and cooperative effort for the statistics discipline. In the past, the Statistics consortium organized Statistics Days on campus. This year, Statistics Day was replaced by the Workshop and a session of Statistics Consortium Distinguished Lectures by Professors James O. Berger and J.N.K. Rao, which was attended by over 150 people. The speakers in previous Statistics Days were noted statisticians Professors Bradley Efron and C.R. Rao, and Professor Robert F. Engle III, winner of the 2003 Nobel Prize in Economics.

*Standing, from left to right: Snigdhanu Chatterjee, Partha Lahiri, Malay Ghosh, Jim Berger, Eric Slud, and Carl Morris; sitting, left to right: Rod Little and J.N.K. Rao*



**Anja Sturm, Assistant Professor in the Department of Mathematical Sciences at the University of Delaware, reports on the *Seminar on Stochastic Processes* conference:**

From April 3–5, 2008, the University of Delaware had the pleasure of hosting the Seminar on Stochastic Processes. This series of informal conferences has been held annually since 1981. They have become one of the most important regular conference series for probabilists in North America. The event at the University of Delaware, organized by Anja Sturm and Wenbo Li, was a great success, attracting over eighty participants: accomplished researchers and young investigators in probability

and stochastic processes alike. Apart from informal sessions in the afternoons, in which young mathematicians in particular had the opportunity to give short presentations on their research and

present open problems, excellent talks were given by five invited speakers:

The opening talk on the first conference day was delivered by **Richard Kenyon** (Brown University) who considered “branched polymers” as a connected collection of unit balls with non-overlapping interiors and developed the behavior of the volume and diameter in two- and three-dimensional space. More general identities were also given, as well as exact random sampling via a Markov process.



*SSP local organizer Anja Sturm (left) with invited speaker Richard Kenyon*

The talk was followed by a presentation by **Amarjit Budhiraja** (University of North Carolina) entitled “Elliott-Kalton stochastic differential games associated with the infinity Laplacian”. He described the limit of a tug-of-war game in which players seek to maximize or minimize payoff by moving the game to a new location within a given radius during their turn. As the maximal step size decreases to zero the continuum limit is given by the solution of an equation involving the infinity Laplacian.

The invited talks on the second day were given by **Xia Chen** (University of Tennessee) and **Anita Winter** (University of Erlangen-Nuernberg, Germany). Xia Chen’s talk gave an overview over his own work as well as open problems and conjectures regarding large deviations for self-intersection local times, mutual intersection local times as well as ranges and the intersection of ranges generated by random walks of lattice values. Anita Winter presented research results concerning the construction and analysis of metric measure trees. These are complete and separable “tree-like” metric spaces which are equipped with a probability measure and the Gromov-weak topology. Applications to modeling genealogical trees in population genetics such as the Fleming-Viot dynamics via continuum tree-valued Markov dynamics were another focus of the talk.

After informal presentations Friday’s conference concluded with an afternoon session commemorating Frank Knight’s life and work took place. Frank Knight, who died March 19, 2007, made numerous creative contributions to probability theory and particularly to stochastic processes throughout his long research career. Examples include the Ray and Knight compactifications as well as the introduction and development of prediction processes. The session, led by Marc Yor and Ed



SSP participants

Perkins (University of British Columbia), summarized Frank Knight’s work and gave anecdotes from his life.

The last highlight of the Seminar on stochastic processes 2008 on Saturday was the talk by **Marc Yor** (Université Paris 6, France) who presented an interpretation of the Black-Scholes formula in terms of last passage times. Here, it was observed that the Black-Scholes formula associated with a Brownian exponential martingale is an increasing function of time, which turns out to be the distribution function of a last passage time. A finite horizon variant was also presented. Informal presentations rounded out the last day of the seminar.

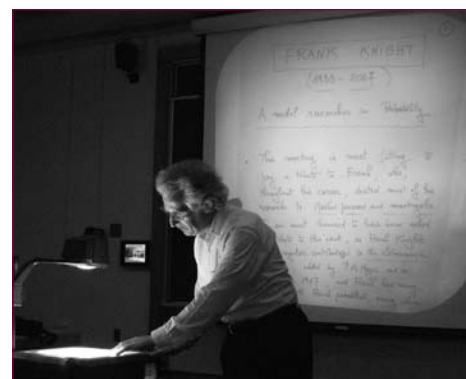
The conference was generously sponsored by the National Science Foundation as well as the Department of Mathematical Sciences at the University of Delaware. This support contributed greatly to the success of the conference, not least by providing funding, making it possible for many graduate students and young researchers to attend.

The Seminar on Stochastic Processes 2009 will take place at Stanford University from March 26–28, 2009 organized by Amir Dembo, Persi Diaconis, and Andrea Montanari. The invited speakers are Omer Angel (University of Toronto), Maury

Bramson (University of Minnesota), Sourav Chatterjee (University of California, Berkeley), Christina Goldschmidt (University of Oxford), and Scott Sheffield (Courant Institute).



Columbia graduate student Irina Goia presenting her work in mathematical finance



Marc Yor commemorating Frank Knight with his presentation entitled “Frank Knight: A model researcher in probability”

# ENAR 2008

Ram Tiwari was the IMS Program Chair at the recent meeting of IMS with ENAR (the Eastern North American Region of the International Biometric Society), which took place from March 16 to 19, 2008. He reports:

There were eight Invited IMS Sessions along with the IMS Medallion Lecture at the ENAR 2008. Following are the titles of the sessions, along with the names and affiliations of the organizers:

- 1) Advanced Semiparametric Modeling of Genetics/Genomic Data (Naisyin Wang, Texas A & M University)
- 2) Bayesian Variable Selection with High Dimensional Covariate Data (Joseph Ibrahim, University of North Carolina at Chapel Hill)
- 3) Current Approaches for Spatial Point Pattern Data (Bradley Carlin and Sudipto Banerjee, University of Minnesota)
- 4) Dynamic Treatment Regimens: Practice and Theory (Peter Thall, University of Texas, M.D. Anderson Cancer Center)
- 5) New Advances in Survival Analysis for Large Dimensional Biomedical Data (Yi Li, Harvard University and Dana-Farber Cancer Institute)
- 6) Statistical Challenges in genome-wide Association Studies (Danyu Lin, University of North Carolina at Chapel Hill)
- 7) Statistical Issues in Genomic Studies in Population Sciences (Xihong Lin, Harvard University and Dana-Farber Cancer Institute)
- 8) Targeting Treatment Efficacy: Flexible Modeling to Clinical Trial design (Michael LeBlanc, Fred Hutchinson Cancer Research Center)

It is important to note that the organizers of the eight invited sessions above are all active grantees of the National Cancer Institute (NCI), NIH. The topics of each session supported the NCI's research missions and the speakers' talks covered a broad range of biostatistical methods with biomedical applications.

In addition to the invited sessions above, the **IMS Medallion Lecture** entitled "Statistical Challenges in Genetic Association Studies" was delivered by Professor Mary Sara McPeck of the University of Chicago. [See article by Mary Sara, right.] Her lecture focused on the genetic risk factors that predispose some people to a particular disease. She explained that technological advances have made it feasible to perform case-control association studies on a genome-wide basis and the observations in these studies have several sources of dependence, including a correlation in the genotypes of nearby markers on a chromosome as well as relatedness of the individuals in the study. She discussed the possible solutions for the problem that arises when modeling the effects of this dependence and how to appropriately take it into account in the analysis of genome-wide association studies present interesting statistical challenges.

The organizers of the invited sessions reported that their sessions were successful as the talks were generally well received, had a good number of questions, and drew good-sized audiences.



Ram Tiwari introducing Mary Sara McPeck's Medallion lecture (see opposite)

Are you going to any scientific meetings in the next few months? We are always seeking interesting articles and reports from meetings for IMS members to read here in the *Bulletin*. You don't have to be an expert at writing (we'll help you polish if needed); you don't have to be the meeting's organizer (though if you are, that's great). We want to hear from as many of you as possible, so if you want to write for the *Bulletin*, about this or anything else, please get in touch with us at [bulletin@imstat.org](mailto:bulletin@imstat.org). As they say over in Wikipedialand,

**Be bold!**



# IMS Medallion Lecture

IMS Medallion Lecturer Mary Sara McPeck writes about her lecture, “Statistical Challenges in Genetic Association Studies”:

*Mary Sara McPeck is Professor of Statistics, Professor of Human Genetics, Member of the Committee on Genetics, and Senior Fellow in the Computation Institute at the University of Chicago. She received a joint bachelor's degree in Mathematics and master's degree in Statistics from Harvard University. She then earned a PhD in Statistics from the University of California at Berkeley, under the guidance of Professor Terry Speed. While on the faculty in the Department of Statistics at the University of Chicago, she has held visiting positions in the Department of Mathematics at the University of Southern California and the Institute of Pure and Applied Mathematics at UCLA, and has held the Edward Rotan Visiting Professorship at the University of Texas M.D. Anderson Cancer Center. Her other awards include the NIH FIRST Award and the Evelyn Fix Memorial Medal and Citation.*



Common, complex disorders, such as diabetes, asthma, hypertension, cardiovascular disease, psychiatric illnesses and cancer, are believed to arise as a consequence of the actions and interactions of many genetic and non-genetic risk factors. Such diseases account for a major portion of the health care burden in developed countries. One fundamental problem of interest to human geneticists is to identify some of the genetic risk factors that predispose some people to get a particular complex disease. The hope is that identification of genetic determinants would result in better understanding of the underlying biology of the disease, ultimately leading to more effective and specific treatments. Furthermore, it is expected that understanding some of the genetic aspects of the disease would also improve our ability to sort out environmental and behavioral risk factors that could be cost-effective targets for prevention.

At present, it is relatively inexpensive to obtain genetic information on hundreds of thousands or a million SNPs (single nucleotide polymorphisms) throughout the genome for each of a large number of individuals in a genetic study. A SNP is a site in the genome with a relatively common, single base-pair change that distinguishes some individuals from others in the same population. The observed variants at a SNP are called “alleles.” The availability of high-density SNP information gives the potential to test for association between individual SNPs, or haplotypes consisting of multiple SNPs, and case-control status, on a genome-wide basis, as a way of searching for previously unidentified genetic risk factors.

The observations in genetic association studies can have several sources of dependence, including population structure and relatedness among the sampled individuals, where some of this structure may be known and some unknown. Suppose cases and controls are sampled from a population that contains two or more sub-populations. If both rates of disease and SNP allele frequencies differ by sub-population, this would tend to create false positive association results when the mixed population is analyzed. One could view population membership as an unmeasured covariate, or,

more generally, proportion of ancestry from different populations as unmeasured covariates. Alternatively, if one pictures a giant genealogy of all humans, one could view this (unobserved) genealogy as creating dependence among individuals based on their position in the tree.

The presence of close relatives in a sample is fundamentally similar to the problem of population structure, except that this information is more likely to be known—though not always—while the population structure may often be unknown. The presence of close relatives in a sample may occur when families sampled for a linkage study, which requires presence of close relatives, are subsequently included in an association study. Furthermore, because the diseases we consider have both genetic and non-genetic factors contributing to them, it would be expected that relevant genetic variants are likely to be enriched in diseased individuals who have relatives also affected with the disease, compared to diseased individuals without affected relatives. Therefore, arguably one should have increased power to detect association by sampling individuals from families with multiple individuals having the disease.

We take a combined approach to the problem of dependence among sampled individuals in an association study. On the one hand, we use the known relatedness of individuals to derive optimal weights for these individuals, taking into account the fact that there is an enrichment for predisposing variants in individuals who have relatives with disease. At the same time, we use the genome-wide SNP information to approximately reconstruct the missing population-structure covariates, and we use these to correct the association test for population sub-structure. Other characteristics of the data include missing information, and the need to analyze hundreds of thousands or millions of markers in a single study, which put a premium on computational speed of the methods. In this talk, I have only scratched the surface of the many statistical challenges of genetic association studies, which also include problems of multiple comparisons as well as data quality issues.

# Shooting ourselves in the foot

**Nancy Reid and Charmaine Dean write:**

Statistical science sometimes has difficulty getting its voice heard in the broad spectrum of physical, medical and social science, and very likely we have all experienced the necessity to explain the role of statistical thinking to administrators, supervisors, granting agencies, and colleagues from other areas of specialization. In Rodney Dangerfield's terms, "We don't get no respect".

We believe that the situation has changed greatly for the better over the past ten or fifteen years, and that the respect we are looking for is no longer elusive. One of us (NR) has personally experienced a very pleasant and welcome respect for the importance of statistics in several activities related to interdisciplinary work. Serving on the review committee of the Health Effects Institute, she was consistently impressed with the statistical level of the discussions around the table, and the importance attached to statistical thinking. In a forestry project under the leadership of CD and two of her colleagues, because of challenges faced with pest and fire concerns, scientists have been urgently vocal on the need for the development of novel statistical methods for forest ecology and fire management, and have been tremendously supportive that national funding be directed toward such methodological statistical developments. Colleagues across both our campuses have made it clear that they need and value statistical thinking, and are very willing to engage in and fund collaborations with statisticians. In 2003 in Canada, a group of statisticians established the National Program on Complex Data Structures, with the explicit goal of establishing interdisciplinary collaborations in which statisticians played a leadership role, and this program was very successful.

Our concern now is that as a

community we are, ourselves, creating roadblocks for further advances of our discipline. We have a strong tradition of skepticism, and arguably a healthy skepticism, that generally ensures we are very cautious about embracing the 'next big thing'. We also have a strong tradition of argumentation, and some important statistical advances have come out of these arguments.

We have a much less laudable tradition of criticizing each other harshly, and being at best lukewarm about our colleagues' work. Referees' reports can take forever, and when they finally do arrive, they can be critical in the extreme. Grant reviews can be similarly painful.

As long as we are exchanging these reports among ourselves, we can chalk it up to our 'culture', and deal with it. However, when we are evaluated in interdisciplinary settings—usually for grants, but also for subject-matter publications, international congresses, and international reviews—this culture serves us very badly. Quite recently two dramatic examples of this surfaced in Canada, in grant reviews at one of our major granting councils, NSERC. In one case, an interdisciplinary proposal was favorably reviewed by international and interdisciplinary committees, and heavily criticized by a panel of domestic statistical reviewers. In the other, individual grantees were compared across disciplines for special

funding, and statistical reviews of leading applicants were simply much more reserved than those in other disciplines. With the rising trend to engage in collaborative work and seek funding from interdisciplinary panels, statistical sciences lose out to other disciplines because their grant proposals are not well supported by statistical reviewers. This is an embarrassment for our community in an interdisciplinary world, but more importantly, it means we don't get the money. In a time of tight budgets and ongoing pressure in every field of science our scientific skepticism and willingness to criticize is hampering our progress.

We all value statistical science and want to see it respected as an important part of the scientific enterprise. However, our scientific skepticism has spilled over into an ineffectual skepticism of statistical scientists, and it is time to have a discussion throughout our community on these issues. What can we do to change our culture to one where we are pleased when our colleagues are successful? To one where we recognize that a broad spectrum of statistical activity is valuable and important? To one where we are open to and indeed, get excited about, new ideas diametrically opposed to our own, even if we (secretly) feel that our own ideas are better? To one where we finally realize that by not supporting each other with enthusiasm, we are indeed shooting ourselves in the foot.





## Profile: Tom Liggett, NAS member

### Rick Durrett writes:

On April 28 at its annual meeting in Washington, the National Academy of Science announced that **Thomas Milton Liggett** was one of its 72 new members. One cannot hear the name “Tom Liggett” without immediately thinking “particle systems.” Frank Spitzer planted the seed for this field in a seminal 1970 paper, but the field would never have developed without Tom’s many important contributions. We are all happy that many years ago, Chuck Stone handed Frank’s paper to Tom and said “I think you’ll find something interesting in this.”

Detailing Tom’s work would take quite some time, so I will only mention some randomly selected highlights. His first contribution was to use semigroup theory to prove a general existence result. He then studied the stationary distributions and limit behavior of the simple exclusion process. With Dick Holley, he introduced the voter model, which has been the subject of dozens of papers. He developed theories for Spitzer’s potlatch and smoothing processes, and for his own invention: reversible nearest particle systems. He studied contact processes on trees and in random environments, and more variations on the basic models than Baskin-Robbins has flavors. In many cases, Tom’s solutions were based on tools that are of independent interest: most notably correlation inequalities of the positive and more difficult negative type, and an extension of Kingman’s subadditive ergodic theorem.

Many of Tom’s papers are based on intricate and detailed calculations. A remarkable example is the upper bound for



Thomas M. Liggett

the contact process critical value. On the surface the approach sounds simple—one finds an initial measure that increases stochastically in time. One guesses a renewal measure, solves for its waiting time distribution, and then one has to check an infinite sequence of inequalities. As several people who have tried to use this technique can attest, the paper should come with a warning label: *don’t try this at home, kids*. A few years later, Tom used a similar argument to show that, except in the one dimensional nearest neighbor case, there is coexistence in the threshold voter model. To prove this, one has to get an upper bound  $< 1$  for the critical value of the threshold contact process in  $d=1$  with neighbor set  $\{-2, -1, 1, 2\}$ . With a little help from his Macintosh to solve some equations, Tom got an upper bound of 0.985.

Perhaps the best way to learn about what Tom, and others in the field of particle systems, have done is to look at his books. His 1985 book is a magnificent introduction to the field, which a few years ago was re-released in paperback in the Springer Classics series. By the time he came to write the second volume in 1999, the field had spread in many directions: hydrodynamic limits, connections with ecology, and so on, so he concentrated on the contact process, voter model and simple exclusion process. Tom was never a big fan of the block construction, which is my favorite hammer, but his version of the Bezuidenhout-Grimmett argument is clear and precise. That proof, like many others in his books, is a substantial improvement over the original work.

Tom’s election to the National Academy is, of course, not his first honor. He has held Sloan and Guggenheim fellowships, lectured in St. Flour in 1976, spoke at the International Congress of Math in 1986, and gave the Wald lectures in 1996. He was editor of the *Annals of Probability* from

1985–87, and at UCLA, where he has spent his entire academic career, he has served as associate chair, chair, and undergraduate vice chair. Tom has had only eight academic children (so far): Norman Matloff, Diane Schwartz, Enrique Andjel, Dayue Chen, Xijian Liu, Shirin Handjani, Amber Puha, and Paul Jung; but he has written papers with dozens of people, primarily because of his knack for solving other people’s problems.

Sadly, Tom’s academic father, Sam Karlin, passed away on December 18, 2007, before seeing Tom elected to the National Academy. One can only hope that Sam will be smiling down from above next April when Tom walks across the stage at the National Academy building, signs the big book with the names of all of the members, and takes a well-deserved place in an elite group of scientists.

### US National Academy of Sciences Induction Ceremony photos



The United States National Academy of Sciences has inducted two IMS Fellows, Rick Durrett [above, right] and Sir John Kingman [below, right]



# Statistics in Chemistry Award for AOAS paper

**Spiegelman, Tobin, James, Sheather, Wexler, and Roundhill win**

**2008 Statistics in Chemistry Award for *Annals of Applied Statistics* article**

The 2008 ASA Statistics in Chemistry Award goes to Cliff Spiegelman, William A. Tobin, William D. James, Simon J. Sheather, Stuart Wexler, and D. Max Roundhill for “Chemical and forensic analysis of JFK assassination bullet lots: Is a second shooter possible?” in *The Annals of Applied Statistics*, (2007), Vol. 1, No. 2, 287–301. The open access article is available at <http://projecteuclid.org/DPubS?service=UI&version=1.0&verb=Display&handle=euclid.aoas/1196438019>

According to the awarding body, it is “an exemplary paper, the subject is of interest to a large audience and the research was done carefully, with all the steps clearly described. It truly demonstrates a powerful statistics application in the chemistry area with a good combination of statistics and chemistry expertise.”

Details at <http://www.amstat.org/awards/index.cfm?fuseaction=statchem>



*The JFK presidential limousine moments before the assassination (Warren Commission Exhibit #697)*

## New Graduate Interdisciplinary Program

The **University of Arizona** is proud to announce the addition of a new Graduate Interdisciplinary Program (GIDP) in Statistics. The GIDP is a graduate training program designed to focus on and enhance interdisciplinary statistics instruction, preparation, and research. It administers both the MS and PhD degrees, along with a Graduate Certificate program in Interdisciplinary Statistics.

GIDP faculty draw their technical and scientific expertise from a variety of campus units, including the departments in the Colleges of Agriculture & Life Sciences, Law, Management, Medicine, Public Health, Science, Social & Behavioral Sciences, as well as the University's BIO5 Institute, and the Arizona Research Laboratories. Dual foundations for the Program come from

statistics faculty in the University's Department of Mathematics and in its Division of Epidemiology & Biostatistics. This results in extensive coordination for the campus' statistical/biostatistical graduate curricula, course offerings, student involvement, and also supports the GIDP's larger mission in statistical training and graduate student preparation. Faculty proficiencies span a wide range, including mathematical statistics, probability theory, risk assessment, population/quantitative genetics, psychometrics, data mining & visualization, computational biology, environmetrics, econometrics, and bioinformatics.

GIDP graduate students develop core knowledge in statistical theory and methodology, and also gain targeted experience in practical, trans-disciplinary research; as much as 30 per cent of their graduate program is devoted to a chosen, subject-matter specialization which can include the topic areas mentioned above. Through these offerings the GIDP in Statistics promotes University-wide activities in the broad areas of modern theoretical and applied interdisciplinary statistics.

The University of Arizona is located in Tucson, a major metropolitan center in southern Arizona. Encircled by mountains and the high Sonoran desert, the city boasts a distinctive southwest ambiance and enjoys more than 300 days of sunshine each year. The University ranks among the nation's top 15 public universities in research activity, and is a leader in graduate interdisciplinary training. Further information on PhD, MS, or Graduate Certificate study is available from the Statistics program director, Walter W. Piegorsch, at [stat@email.arizona.edu](mailto:stat@email.arizona.edu), or at the GIDP website, <http://stat.arizona.edu>.

*Thimble Peak in the Santa Catalina Mountains as seen from Tucson, Arizona's east side. Photo: Susan Lynn Peterson*



# Rick's Ramblings: *Two Classroom Notes*

Rick Durrett explores a couple of probability problems:

The *New York Times* this April has brought us two examples for probability class. By now most probabilists have heard of the Monty Hall problem, but an economist, M. Keith Chen, has recently uncovered a related phenomenon in the theory of cognitive dissonance. For a half-century, experimenters have been using the so-called free choice paradigm to test our tendency to rationalize decisions. In an experiment typical of the genre, Yale psychologists measured monkey's preferences by observing how quickly each monkey sought out different colors of M&M's™.

In the first step, the researchers gave the monkey a choice between, say, red and blue. If the monkey chose red, then it was given a choice between blue and green. Nearly two-thirds of the time it rejected blue in favor of green, which seemed to jibe with the theory of choice rationalization: once we reject something, we tell ourselves we never liked it anyway.

Putting aside this interpretation, it is natural to ask what would happen if monkeys were choosing at random? The six orderings RGB, RBG, GRB, GBR, BGR, and BRG would have equal probability. In the first three cases red is preferred to blue, but in two thirds of those cases, green is preferred to blue. Okay, I admit that the relationship to the Monty Hall problem emphasized in the *New York Times* article is tenuous: in both cases one thinks the answer is  $\frac{1}{2}$  and it is really  $\frac{2}{3}$ . However, this is a neat new example for an elementary probability course.

The second *New York Times* article concerns Joe DiMaggio's hitting streak, written by Cornell applied mathematician Steve Strogatz and his graduate student, Samuel Arbesman. The new twist on this old problem that emerges from the article is that it is not really surprising that Joe DiMaggio did this, but it is more surprising that no one did it before he did. In particular, 1894 (when the height of the pitcher's mound was reduced) was an extremely fertile year for this streak to have happened.

Getting something published in the *New York Times* might seem like a dream come true, but in the electronic age it brings out hundreds of emails, including a few from me. Steve spends a lot of his time making science accessible and exciting to nonspecialists. I will now do my best to make it boring for experts.

The first pedantic point is that if we know the probability  $p$  that

a player gets a hit in one game and we are willing to assume that the trials are i.i.d. (forgetting that teams have varying quality and the season is structured into two to four game series) then one can accurately estimate the probability  $q$  that in an  $n$ -game season a player has a hitting streak of at least  $m$  games:  $q \approx r \equiv (n-m)(1-p)p^m$ .

To explain, let  $B_i$  be the probability the player gets no hit in game  $i$  but then gets hits in games  $i+1, \dots, i+m$ . For simplicity, this ignores the possibility of a streak starting from the first game, which is a small error, but the beauty of this formulation is that the  $B_i$  are either disjoint or independent, so by the first two Bonferroni inequalities:  $r \geq q \geq r - r^2/2$ . Since  $r$  is small, the approximation is very good.

At this point reality rears its ugly head: how do we estimate  $p$  from easily available data such as batting averages? One approach is given in an article in *Chance* in 1989 written by Stephen Jay Gould on DiMaggio's streak. In a little text box accompanying the article, Tom Short and Larry Wasserman from Carnegie Mellon University reasoned as follows: if we use his lifetime batting average of 0.325 and assume 4 at bats per game, then  $p = 1 - (0.675)^4 = 0.792$ , and we get an approximate probability of  $r = 4.344 \times 10^{-5}$  for a 56 game streak in a 154 game season.

One of the nice things about computing a very small probability is that as long as you get something small, you think you got the right answer. The calculation is tested more critically if we try to compute the probability of something that is likely to happen: a thirty game hitting streak. This has been done 12 times in the 20 years 1988–2007. Most of these streaks were 30s and 31s but there were two 35s and a 38 that spanned the 2005 and 2006 seasons.

If one uses the 4 at bats per game heuristic, then the number of streaks is way too large. Taking a cue from the geneticists' effective population size, if we set the effective number of at bats to 3.5, i.e., let  $p = 1 - (1 - b)^{3.5}$ , where  $b$  is the batting average, then things work well. Summing over the top 145 batting averages in 2007, the number of 30 game streaks in a season should be Poisson with mean 0.655.

At this point, I have given Terry Speed more than enough material for a column on why probabilists should be forbidden from analyzing data, so I'll stop!

.....  
If you liked these two examples, you'll like Rick's new book, *Elementary Probability for Applications*, available soon from Cambridge University Press. A close-to-final version is at [www.math.cornell.edu/~durrett/](http://www.math.cornell.edu/~durrett/)



Rick Durrett





# Introducing the 2008 IMS Fellows

## *Alan Agresti*

University of Florida:

For contributions to categorical data analysis, through research and exceptional textbooks, and for excellence in teaching and mentoring of students.



## *Lancelot Fitzgerald James*

Hong Kong University of Science and Technology:

For contributions to Bayesian nonparametric statistics, the development of Poisson partition calculus for Levy processes; and for dedicated service to IMS.



## *Miguel A. Arcones*

SUNY Binghamton:

For contributions to probability and mathematical statistics including the bootstrap, U-statistics, M-estimators, Gaussian processes, limit theorems, empirical processes and large deviation theory; and for extensive editorial work.



## *Jiming Jiang*

University of California at Davis:

For contributions to statistical theory and methodology, especially in the fields of mixed effects models, small area estimation and model selection.



## *M. J. (Susie) Bayarri*

University of Valencia:

For contributions to Bayesian analysis of selection models and queueing systems, model selection, statistical foundations, and the interface of statistics with complex computer modeling; and for service to the profession through numerous leadership roles and editorial work.



## *Haya Kaspri*

Technion-Israel Institute of Technology:  
For contributions to the general theory of Markov processes and its applications, to the theory of Markov local time; and for excellence in teaching and editorial work.



## *Erwin Bolthausen*

Universität Zürich:

For contributions to probability theory, stochastic models related to statistical physics; and for extensive editorial work.



## *Roger Koenker*

University of Illinois, Urbana-Champaign:  
For contributions to statistical theory and methodology, especially regression quantiles, robustness and econometrics.



## *Xia Chen*

University of Tennessee:

For contributions to the theory of ergodic Markov chains with general state space, to limit laws, and to large and moderate deviations for intersection local times.



## *Abba M. Krieger*

University of Pennsylvania:

For contributions to diverse areas of probability and statistics; and for exceptional leadership as Chair of the Department of Statistics of the University of Pennsylvania.



**Jean-François Le Gall**

Université Paris-Sud (Orsay):

For contributions to the fine properties of Brownian motion and to superprocesses. In particular, for his invention of the Brownian snake and its applications to the study of the sample path properties of super Brownian motion and to the resolution of conjectures for non-linear partial differential equations.

**Andrew Nobel**

University of North Carolina at Chapel Hill:

For contributions to non-parametric function estimation, statistical learning, computational biology and information theory; and for dedicated service to IMS.

**Zhenyang Lin**

Zhejiang University, Hangzhou, China:

For contributions to probability limit theory, sample path properties of stochastic processes, and asymptotic theory of large samples; for leadership in promoting the discipline of probability and statistics in China.

**Yuval Peres**

University of California at Berkeley and Microsoft Research:

For contributions to many areas of probability theory and its applications; for excellent mentoring of graduate students and postdocs.

**Bani K. Mallick**

Texas A&M University:

For contributions to Bayesian classification and regression, nonparametric hierarchical modeling, survival analysis, spatial statistics, and time series modeling; for excellent mentoring of graduate students and postdocs.

**Ingrid Van Keilegom**

Université Catholique de Louvain, Belgium:

For contributions to statistical theory and methodology, especially semi- and nonparametric regression, survival analysis, and empirical likelihood methods.

**Hélène M. Massam**

York University:

For contributions to Wishart distributions and to graphical models.



*An  
invitation...*

**The new IMS Fellows** will be presented at the World Congress in Singapore as part of the IMS Presidential Address and Awards ceremony, which will be held on Monday, July 14, in the Mercury Room at the Furama Hotel, starting at 7pm.

A reception follows the ceremony: all congress participants are warmly invited to attend. We hope to see you there!



# Singapore in a Nutshell

This year's IMS Annual Meeting takes place in the vibrant Asian city-state of Singapore. Sau Ling Wu, National University of Singapore, describes some of its many attractions:

**D**on't be fooled by Singapore's size, for this little city-state actually packs quite a punch. Despite having a land area of only 684 square km, Singapore has grown from a quiet fishing village into one of the economic giants in Southeast Asia in just 150 years. Underlying its remarkable success is an efficient government, which has crafted Singapore into a model for developing countries in the areas of trade and tourism. The city is also an interesting cultural melting pot of Chinese, Malay, Indian and Eurasian cultures, which has lent diversity and unmatched uniqueness to both its cuisine and architecture. Brimming with energy, this young island state will have you coming back for more.

Lying just one degree north of the equator, Singapore's warm tropical climate is heaven-sent for sun worshippers. Sunshine abounds, although one can expect rain throughout the year, especially during the monsoon season in December. Temperature averages around 28°C (82°F) all year round,

hence light summer clothing made from a fabric like cotton is ideal for everyday wear. But even for those who do not enjoy a warm and humid climate, the omnipresence of air-conditioning, from shopping malls to restaurants, creates a comfortable environment to live, work and play. It is then by no coincidence that Singapore is called the "air-conditioned island".

The island republic's extensive infrastructure allows visitors to enjoy its sights and sounds in an efficient and safe environment. The award-winning Changi Airport, which is served by more than 80 airlines, is very much the gateway not only to Southeast Asia, but also the world. The efficient train system, known as the Mass Rapid Transit (MRT), makes travelling a breeze for residents and travelers alike. Buses and taxis are also easily available, leaving travelers spoilt for choice. Traditional forms of transport, such as the trishaw (three-wheeled bicycle taxis) and bumboats, can still be found for visitors who want to take a walk down memory lane. Singapore's world-class cruise terminal has also allowed it to establish itself as one of the premier cruising centers in South-east Asia, and luxury cruises operate every weekend to

neighbouring Asian countries.

Lacking any noteworthy natural resources other than a good harbour, Singapore's most precious resource is its hardworking, resilient and adaptable people. Its population of 4.5 million people is made up of 77% Chinese, 14% Malays, 8% Indians and 1% Eurasians and people of other descents. This ethnic diversity thus gives rise to an interesting urban landscape, where skyscrapers blend into the British colonial architecture, local shop-houses, temples, mosques and churches.

The interesting mix of ethnicities has also given rise to a truly unique variety of food, ranging from native Asian dishes to haute cuisine, which boasts a fusion of both Western and Asian styles. Singaporeans are thus known to travel all over the island to hunt for their local favourites like roti prata, laksa, satay, nasi lemak, char kway teow, chilli crab and prawn noodles at the ubiquitous food centres, or for haute cuisine in eating enclaves such as Holland Village or Dempsey Hill, nestled away from the hustle and bustle of the city.

Forming the heart of the city is the Central Business District, or CBD as the acronym-loving Singaporeans call it. The





CBD was the historic core of Singapore, where trade first started to flourish. Today, it continues to stamp its authority as the place where the most vital economic and administrative functions of the city are located. Hence, one can still find distinct colonial architecture, in the form of the Fullerton Hotel or the City Hall, blending into the massive skyscrapers which are characteristic of the Singapore skyline. Standing out from the midst of the massive skyscrapers is the iconic Esplanade (resembling the durian—Singaporeans' favourite fruit), which hosts several arts and music events throughout the year. One

also cannot ignore the presence of the mythical Merlion, a half-lion and half-fish statue situated at the mouth of the Singapore River, which has been fronting Singapore's tourism campaigns for the past few decades.



Merlion: Ministry of Information, Communication and the Arts

Surrounding the CBD are ethnic enclaves which were formed when Sir Stamford Raffles, the man who founded Singapore, drew up the first Master Plan for Singapore, the first of many for this astutely-planned city. There are spices and sarongs galore in Little India, which also hosts Singapore's only 24-hour big departmental store, Mustafa Centre. To the south, traditional shop-houses in Chinatown offer not only traditional Chinese clothes and food, but also age-old services such as calligraphy and fortune-telling. For a more eclectic mix of shops, head down to Arab Street, whose cluttered shops often offer great steals for fine cloths and silk.

The term "Garden City" was not given without good reason: lush greenery can be found everywhere. In addition, nature reserves such as the Bukit Timah Nature Reserve and the Macritchie Reservoir host a

great biodiversity of flora and fauna which helps breaks the monotony of this little urban jungle. To see animals up close, one can head down to the much acclaimed Singapore Zoological Gardens, where the use of natural barriers like streams, rock walls and vegetation gives the feeling of being in an "open" zoo. Can't get enough of your favourite animals? The Night Safari, conducted next to the zoo, offers an unrivalled experience of watching animals up close during the night.

With about 63 islands surrounding the main island of Singapore, day trips to the neighbouring islands, most notably Sentosa, are common. Sentosa, with its pristine beaches and world-class attractions such as the Underwater World, hosts a unique blend of leisure and recreational facilities ideal for both families and individuals. Shopaholics also have no reason to fret in Singapore. Huge malls, carrying everything from international brands such as Chanel and Gucci to home-grown labels, are abundant, especially along the famous Orchard Road. An ideal time to find great bargains for everything from clothes to electronics would be during the Great Singapore Sale, which runs from May to July every year.

Most major shopping centres and big departmental stores accept US and Australian dollars, British pounds, yen and euro. If necessary, money can be changed easily not only at banks and hotels, but also at the numerous licensed money changers dotted across the island.

Often known as the bridge between the East and West, Singapore fuses the quiet and mystic charm of Asian culture with the businesslike development characteristic of the West. Even in a safe and efficient environment with all this modern infrastructure and amenities, there is still adventure to be sought.



MRT Tunnel: Calvin Teo

**Traveling around Singapore is a cinch! An efficient public transportation network of taxis, buses and the modern Mass Rapid Transit (MRT) rail system ensures that getting from point A to point B is cheap and easy. Transfers to and from NUS at the beginning and end of each day will be provided for participants staying at the Congress hotels. Check the Congress website for the bus schedule: <http://www2.ims.nus.edu.sg/Programs/wc2008/>**



Jpatokal

An epicure's paradise, Singapore's world-famous cuisine includes delicious foods such as [above] satay; [below] roti prata (left) and roti telur (center), with a bowl of chicken curry (right); and [bottom] laksa. Bon appetit!



Jpatokal



Meutia Chaerani

# Letters to the Editor

Letters on any issue of interest to IMS members are welcome. Email your letters to the Editor at [bulletin@imstat.org](mailto:bulletin@imstat.org). *Some small print:* the Editor's decision is final; we may edit your letter before publication; publication does not necessarily imply endorsement of the opinions expressed therein, and the *IMS Bulletin* and its publisher do not accept any responsibility for them.

*Dear Editor*

Ning-Zhong Shi of Northeast Normal University, Peoples Republic of China, has made a pretty conjecture in the May issue of the *Bulletin*. Professor Shi conjectures that if  $X_1, X_2, \dots$  are iid observations from a regular density  $f(x|\theta)$ , where  $\theta$  is a real valued parameter, and if  $\hat{\theta}_n = \hat{\theta}_n(X_1, X_2, \dots, X_n)$  is the MLE of  $\theta$  based on the first  $n$  observations, then the mean squared error  $E_\theta(\hat{\theta}_n - \theta)^2$  is monotone non-increasing in  $n$  for all  $\theta$ . I think that it is meant that  $f(x|\theta)$  could be a density with respect to Lebesgue measure or a pmf, i.e., the so-called lattice cases are covered in the conjecture. It is also clear that Professor Shi implies that a unique MLE exists with probability one under all  $\theta$ .

I first found the conjecture to be somewhat provocative and hoped that a quick counterexample could be found. But the conjecture happens to be true in a few slightly unusual examples too, e.g. estimating the standard deviation  $\sigma$  of a normal distribution, and estimating the square of the mean of a normal distribution. The conjecture is probably true in many examples on a case-by-case basis, but would be nearly impossible to prove in general.

The key thing here is perhaps not the mean squared error. What is true is that in many examples, the distribution of the MLE is itself getting more concentrated around the true value of  $\theta$  as  $n$  increases. Thus, a monotonicity property would tend to hold for all kinds of concentration measures, such as mean absolute error, rather than mean squared error.

Indeed, there is nothing special about the estimate being the MLE. If  $\{T_n(X_1, X_2, \dots, X_n)\}$  is any sequence of estimates with the reverse martingale property, then any convex function of  $T_n$  would form a reverse sub-martingale, and hence its expectation would be a monotone non-increasing function of  $n$ ; this basic fact about reverse martingales can be seen, e.g., in Ash (*Real Analysis and Probability*, 1972). In particular, provided that the expectation is finite,  $E_\theta(T_n - \theta)^2$  would be non-increasing in  $n$ . So would be  $E_\theta|T_n - \theta|$ , because of the convexity of the absolute value function.

$U$ -statistics and certain normalized symmetric statistics form reverse martingales in the iid case. For example, the sample mean and variance are both  $U$ -statistics. Thus their mean absolute or mean squared errors would decrease with  $n$ . In any example where the MLE forms a reverse martingale, Professor Shi's conjecture would be true. Indeed, it seems very hard to think of a proof of the conjecture if the estimate sequence does not have the reverse martingale property, even if it might be true by direct verification.

Are there any natural estimates for which the property is not true? It might seem surprising that the property need not be true for Bayes estimates. Take just the normal mean problem and assume that the variance is known, say  $\sigma^2 = 1$ . Take a very sharp prior, e.g., a normal prior with mean zero and variance .01. The posterior mean of course is biased, and the mean squared error is increasing for  $n \leq 10$  and decreasing for  $n > 10$ . What seems to be going on is that because of the strongly opinionated prior, at first the Bayesian feels very sure that the true mean is near zero. But as data values start coming in, initially they seem to contradict the opinionated prior. Thus the Bayesian initially gets confused and the mean squared error increases. After a while, the data overwhelm the prior and the mean squared error starts to fall. I suspect that this is true in essentially any problem with very sharp priors. Note, however, the Bayes risk would be monotone in  $n$ , even if the mean squared error is not.

I end by saying that perhaps regularity does not have too much to do with the problem. For example, in the  $U[0, \theta]$  case, the MLE, namely the sample maximum, gets closer to  $\theta$  with probability one as  $n$  increases. If we do not insist on the exact mean squared error but work with an expansion for it, then under the usual regularity conditions, it will follow that the approximate mean squared error is decreasing in  $n$ ; one can see such expansions in the Edgeworth expansion literature, e.g. Pfanzagl (*Z. Wahr. Verw. Geb.*, 1973, 25, 171–198).

I thank Professor Shi for making a fun conjecture.

Sincerely,

*Anirban DasGupta*

Purdue University, USA

*Dear Editor*

I am an IMS member, and an elected Fellow of the American Statistician Association and elected member of the ISI. I was recently appointed as Chair of the ISI Sports Statistics Committee. I am planning on inviting a panel discussion as a special contributed session at next years ISI convention at Durban, South Africa, on Olympic Sports, but other sports can also be discussed. If any IMS member is interested in being part of this session, please contact me at [hilbe@asu.edu](mailto:hilbe@asu.edu) or [jhilbe@aol.com](mailto:jhilbe@aol.com).

Sincerely,

*Joseph Hilbe*

Arizona State University

# Terence's Stuff: *Two by Two*

In this month's column, Terry Speed admits his love... for the humble 2x2 table



Last week I exploded in a discussion when one of my friends measured the association in a 2x2 table with entries  $a$ ,  $b$ ,  $c$  and  $d$  by the correlation coefficient  $r$  (scoring the two rows as 0 and 1, and likewise for the columns). “Doesn’t everyone know,” I asked, “that the one true measure of association (m.o.a.) in that context is the cross-ratio  $ad/bc$ , or some monotonic function of it, such as  $\log(ad/bc)$ ?” “No,” was the answer, “What’s so good about the cross-ratio, and so bad about  $r$ ?”

The answer lies in what we’d all want of an m.o.a. Ideally, it should be positive, negative or zero when we’d expect it to be positive, negative or zero, and monotonely so. Further, its values should not be constrained by the marginal totals in the table, for we don’t really think these are relevant to an m.o.a. between the row and column factors, do we?

In 1963 A.W. F. Edwards gave a simple mathematical argument showing that the only m.o.a. satisfying two simple properties, such as those just mentioned, are functions of the cross-ratio. A deeper result asserts that for any (consistent) set of row and column marginal totals, and any real number, there is one and only one 2x2 table having those marginal totals and that number as its log cross-ratio. Can you see how to construct it? The invention of m.o.a.’s for two-way contingency tables has a long history, and every generation has to discover for itself that, apart from the 2x2 case, there is no one true m.o.a. It has long

been a source of frustration to me that in the sole case where there is, so few people use it. In human genetics they use  $r^2$  or the awful  $D'$ ; Karl Pearson used the standard  $\chi^2$  statistic divided by  $N = a+b+c+d$ , and there are more—all, by Edwards’ theorem, having their values constrained by the marginal totals.

I fell in love with 2x2 tables 35 years ago, when I had the opportunity to teach a statistics course in Hull, then a gritty port city on the east coast of England. At that time I had just discovered the flurry of activity on these tables in the 1940s, when R.A. Fisher, E.B. Wilson, E.S. Pearson and G.A. Barnard argued in the pages of *Science*, *Nature* and *Biometrika* about the correct way to draw inferences from  $a$ ,  $b$ ,  $c$  and  $d$ , and so I devoted a considerable portion of my course to this controversy. That might seem extravagant, but I felt that in these simple tables could be found opportunities to address many important notions in statistics.

The 2x2 table is the hydrogen atom of statistical inference: it is almost as simple as you can get, but it has a rich theory and practice. For a start, there are several natural sampling models leading to such tables, ones involving 4 independent Poissons, a 4-category multinomial (the double dichotomy), pairs of independent binomials, and a (non-central) hypergeometric distribution, these having, respectively, 4, 3, 2 and 1 free parameters, and 0, 1, 2 and 3 marginal totals naturally constrained. Further, each of these models has one canonical parameter with a special value defining a key null hypothesis: multiplicativity, independence, equality and centrality, respectively. Finally, tests of these null hypotheses all connect in surprising and interesting ways. That this occurs follows from properties of these distributions which we should all know. One of the big shocks for me was the equality

between the chi-squared statistic computed from the table, this being as usual the sum of four terms of the form  $(O-E)^2/E$ , with the familiarly defined  $E$ s, and the square of the standardized difference of the two proportions, the standardizing being done using the pooled proportion (as is appropriate under the null of equality).

The arguments of the 1940s concerned conditional inference, the extent to which a sampling model should be respected, and the parameters of interest. Some marginal sums may be fixed by our model, but we can consider making inferences conditional on further margins not fixed by our model. Does doing so lead to a better test of our key null hypothesis? Do we lose information on our parameter? Is our parameter the right one? These simply-asked questions are not quite so simple to answer, and they stimulated a lot of research—now largely forgotten—along with all the different sampling models. Fisher wrote in 1935, “If it be admitted that these marginal frequencies by themselves supply no information on the point of issue,” and, without committing himself one way or the other, went on to describe his *exact* test.

For almost everyone these days, that is the one true test of association in a 2x2 table. Who among us would not want to be exact?

A 2x2 table

	Y	N	Total
Y	a	b	a+b
N	c	d	c+d
Total	a+c	b+d	N=a+b+c+d



# OBITUARY: Christopher C Heyde

## 1939–2008

CHRIS HEYDE, a giant figure in probability and statistics whose active research career spanned almost 40 years, died on 6 March 2008, aged 68.

Chris grew up in Sydney, where he excelled at sports in school. A gifted mathematics teacher led him to redirect his energy to academic pursuits. He graduated from the University of Sydney with First Class Honours and the University Medal in Mathematical Statistics in 1961. His MSc was granted in 1962 for a thesis on the “*Theory of characteristic functions and the classical moment problem*”, and he was awarded his PhD in Statistics at the Australian National University (ANU) in 1965. Later that year he married Beth James, also a PhD student. Their mutually supportive marriage produced two children, Neil and Eric. At the time of Chris’s death, he and Beth were the proud grandparents of four grandchildren.

In 1964, Chris joined Joe Gani in moving to Michigan State University. Joe moved to take up the Chair of Probability and Statistics at the University of Sheffield, UK, at the end of 1965, and Chris followed him. He was soon promoted to Special Lecturer in charge of the Statistical Laboratory at the University of Manchester in 1967, when the Manchester–Sheffield School of Probability and Statistics was formed.

Chris returned to the Department of Statistics at the ANU in 1968. He had by then produced some 30 papers, many on the refinement of classical limit theory involving large and small deviations, rates of convergence and domains of attraction; as well as others on contemporary issues in probability. Contact with the work of new colleagues stimulated Chris’s interests in new directions, notably the theory of branching processes and statistical inference,

and population genetics models. A joint paper with Ted Hannan on time series analysis included Chris’s work on the martingale concept. He was to become widely known for work on the theory and application of martingale methods, not least in estimation for stochastic processes.

Chris moved in 1975 to the CSIRO Division of Mathematics and Statistics where he rose to be Acting Chief; then from 1983–86, he was Professor and Chairman of the Department of Statistics at the University of Melbourne. In 1986, he returned to the ANU to the Chair of Statistics in the Institute of Advanced Studies Department of Statistics. Chris was the Foundation Dean of the School of Mathematical Sciences (now the Mathematical Sciences Institute). From 1993, he was also a Professor in the Department of Statistics at Columbia University, New York, and Director of their Center for Applied Probability.

Chris served the Australian Academy of Science, the Australian Foundation for Science, the Australian Mathematical Society, the Statistical Society of Australia, the International Statistical Institute and the Bernoulli Society by taking on significant roles in these organizations. He also acted as Editor or Associate Editor for a number of journals, including the *Journal of Applied Probability* and *Advances in Applied Probability*, of which he was Editor-in-Chief from 1990–2007. His high standards, efficiency and integrity as editor, author and coauthor were greatly respected by his professional colleagues.

Chris was elected an IMS Fellow (1973), Fellow of the Australian Academy of Science (1977), Honorary Life Member of the Statistical Society of Australia Inc. (1981), and a Fellow of the Academy of



Chris Heyde received the Order of Australia in 2003

the Social Sciences in Australia (2003). He became a Member of the Order of Australia (AM) for services to Mathematics (2003; pictured above). He was awarded a DSc *honoris causa* by the University of Sydney (1998) and received the Pitman Medal (Statistical Society of Australia Inc, 1988), the Hannan Medal (Australian Academy of Science, 1994) and the Lyle Medal (Australian Academy of Science, 1995).

Chris demonstrated great depth and originality in his broadly chosen research areas, and he nurtured an interest in the history of probability and statistics which fostered an awareness of the important foundational elements of our subject. He published over 200 papers, and authored and edited 12 books. Two of his books represent major original contributions to probability and statistics: *Martingale Limit Theory and its Applications* (1980) with Peter Hall, and *Quasi-likelihood and its Applications* (1997).

Chris could appear somewhat austere, but his outward reserve, and the rigour he applied to his administrative duties as much as to his mathematics, concealed a very human heart within, and a strong ironic sense of humour. The advice and encouragement he delivered impartially stemmed from a genuine concern for the well-being

# OBITUARY: Shihong Cheng

## 1939–2007

of his students, his colleagues, the authors of the myriad of papers he handled in his working life, and all with whom he came into contact.

Chris was diagnosed with leukaemia 11 years before his death, and underwent periods of treatment followed by lengthy periods of remission. He completed his normal activities at Columbia University in the Fall of 2007, but early in 2008 metastatic melanoma was diagnosed. In an email message dated January 20, 2008, to one of the authors of the present article he wrote:

*Whatever happens, I certainly feel that I have had a fortunate life. I will be happy to have more...but if not, I have had a good innings and can go in peace.*

Chris Heyde was one of the greats of probability theory of our time and his contribution was immense. His influence will remain. He will be painfully missed, by his colleagues, his wife and family, his many friends, and the statistical community worldwide.

A more extensive appreciation of Chris's life and works, with commentaries from a number of colleagues, is planned as an *IMS Collections* volume, to appear next year.

*Eugene Seneta, University of Sydney, Australia, and Ross Maller, The Australian National University*

Adapted from an obituary in the *SSAI Newsletter*, June 2008

SHIHONG CHENG, a probabilist who specialized in order statistics, died in Beijing on November 24, 2007. Born in 1939, he entered Peking University in 1957. His most influential teacher was Pao Lu Hsu who had returned to China after a successful career in England and the US (for more on Hsu's work and life see *Ann. Statist.* 7, 1979, 467–483; see also Terry Speed's column in the last issue). Cheng was one of Hsu's last students, and he got his taste for order statistics from Hsu.

In 1964 Cheng was sent routinely for work in the countryside for one year. On his return, Peking University was in turmoil due to the cultural revolution. In 1970 he was again sent to the countryside but now under much more harsh conditions, which were to affect his health for the rest of his life. In 1971 he became attached, via Peking University, to a factory where he practiced and wrote about experimental design. By 1978 he was back to his regular duties at Peking University, where the situation had been regularized. Despite being removed from his academic profession for 14 years, it is amazing to realize that he was able to overcome all difficulties and return to the highest scientific level.

In 1982, after studying the English language for one year, he was sent abroad as one of the first scientists after the cultural revolution—for research purposes, but mainly to learn modern probability. This made sense since there had been very few scientific contacts with the world outside China after the break-up with the Soviet Union around 1960. Cheng spent a year at UNC Chapel Hill.

From that time on a number of papers on order statistics appeared (e.g. 'On a problem concerning spacings', *Z. Wahrsch. Verw. Geb.* 1984; 'On limiting distributions of order statistics with variable rank from stationary sequence', *Ann. Prob.* 1985). In 1996 Cheng's book on advanced probability theory (including martingale limit theory, convergence of stochastic processes and much more) came out. It is still widely used in China. A second book including measure theory proper came out in 2004.

I had the privilege of working with Cheng (he visited Erasmus University Rotterdam for the first time in 1992) and with quite a few of his students. The students were not only very well trained, but also all of them held Shihong Cheng in high esteem. He was the ultimate gentleman: firm, generous and kind. He had a remarkable resilience and peace of mind. I am very happy to have known Shihong Cheng.



Shihong Cheng

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**Election results next issue!**

*Laurens de Haan  
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# IMS Meetings around the world

## IMS sponsored meeting

### 7th World Congress in Probability and Statistics

(71st IMS Annual Meeting and 7th Bernoulli Society World Congress)

July 14–19, 2008, National University of Singapore

**w** <http://www.ims.nus.edu.sg/Programs/wc2008/index.htm>

**e** [wc2008\\_general@nus.edu.sg](mailto:wc2008_general@nus.edu.sg)

Chair of the Local Organizing Committee: Louis Chen; Chair of Scientific Program Committee: Ruth Williams

The seventh joint meeting of the Bernoulli Society and the Institute of Mathematical Statistics will take place in Singapore from July 14 to 19, 2008. This quadrennial joint meeting is a major worldwide event featuring the latest scientific developments in the fields of probability and statistics and their applications.



Wikimedia/Jani Patokallio

Registration now at walk-in rate: S\$600 for IMS/BS members; S\$240 for IMS/BS student members. Other rates on the website. For reference, 1 Singapore Dollar is currently worth roughly 75 cents (USD), 45 cents (Euros), or 5 Chinese Yuan Renminbi

The program will cover a wide range of topics and will include invited lectures by the following leading specialists: **Martin Barlow**, University of British Columbia (Medallion Lecture); **Richard Durrett**, Cornell University (Wald Lectures); **Jianqing Fan**, Princeton University (Laplace Lecture); **Alice Guionnet**, École Normale Supérieure de Lyon (Lévy Lecture); **Mark Low**, University of Pennsylvania (Medallion Lecture); **Zhi-Ming Ma**, Academy of Mathematics and Systems Science, Beijing (Medallion Lecture); **Peter McCullagh**, University of Chicago (Neyman Lecture); **Douglas Nychka**, US National Center for Atmospheric Research (Public Lecture); **Oded Schramm**, Microsoft Research (BS–IMS Special Lecture); **David Spiegelhalter**, University of Cambridge and MRC Biostatistics Unit (Bernoulli Lecture); **Alain-Sol Sznitman**, ETH Zurich (Kolmogorov Lecture); **Elizabeth Thompson**, University of Washington (Tukey Lecture); **Wendelin Werner**, Université Paris-Sud (BS–IMS Special Lecture).

There will be 34 invited paper sessions highlighting topics of current research interest (<http://www.ims.nus.edu.sg/Programs/wc2008/invitedsessions.htm>), as well as many contributed talks and posters. The conference schedule is available at the website above.

The venue for the meeting is the National University of Singapore. Singapore is a vibrant, multi-cultural, cosmopolitan city-state that expresses the essence of today's New Asia. It offers many attractions both cultural and touristic, such as the Esplanade and the Singapore Night Safari.



Ministry of Information, Communication and the Arts

## NUS satellite meeting

The National University of Singapore's Institute for Mathematical Sciences is organizing a satellite meeting to the Congress:

**Symposium in honor of Kiyosi Itô: Stochastic Analysis and Its Impact in Mathematics and Science, July 10–11, 2008**

**w** <http://www.ims.nus.edu.sg/Programs/kiyosi08/index.htm>

*At a glance:  
forthcoming  
IMS Annual  
Meeting and  
JSM dates*

## 2008

**IMS Annual Meeting/  
7th World Congress  
in Probability and  
Statistics:** Singapore,  
July 14–19, 2008.

**w** <http://www.ims.nus.edu.sg/Programs/wc2008/index.htm>

**JSM:** Denver, CO  
August 3–7,  
2008 **w** <http://www.amstat.org/meetings/jsm/2008/>

## 2009

**IMS Annual Meeting  
@ JSM:** Washington  
DC, August 2–6,  
2009

## 2010

**IMS Annual Meeting:**  
Gothenburg,  
Sweden, August  
9–13, 2010

**JSM:** Vancouver,  
Canada, August  
1–5, 2010

## 2011

**IMS Annual Meeting @  
JSM:** Miami Beach,  
FL, July 31–  
August 4, 2011

## IMS co-sponsored meeting

**JSM2008****August 3–7, 2008****Denver, Colorado****w** [www.amstat.org/meetings/jsm/2008/](http://www.amstat.org/meetings/jsm/2008/)

The 2008 Joint Statistical Meetings will be held August 3–7, 2008, at the Colorado Convention Center.

**Online program now available.**

**Deming Lecturer:**

**Donald Berwick;** Fisher

**Lecturer:** Ross Prentice



**Abraham Wald Prize Ceremony In Sequential Analysis, presented by *Sequential Analysis* Journal**

**Tuesday, August 5, 2008: 12:30–1:30pm****JSM 2008 at Denver, Colorado**

The ceremony will take place in Convention Center room 101. Everyone at JSM2008 is invited to attend.

Organizer and Chair: Nitis Mukhopadhyay, Editor, *Sequential Analysis*, University of Connecticut, Storrs. Sponsored by Taylor & Francis. Need more information? Please contact [nitis.mukhopadhyay@uconn.edu](mailto:nitis.mukhopadhyay@uconn.edu)

**Denver Travel Tips**

**Weather:** Average high: 92°F/25°C; Average low: 62°F/15°C. Dry heat characterizes the Denver summer, though temperatures do not usually reach scorching and average in the very comfortable 70s–80s. The Denver summer is beautiful, great for outdoor activities, especially in the mountains just a short drive away where the temperatures cool and wildflowers bloom. In August, frequent afternoon thunderstorms are fairly common. Hotel and meeting rooms are air conditioned.

**Suggested Attire:** Summer in Denver is moderately warm, but rarely humid, and evenings can be cool. Dress in the city is relatively informal, so bring comfortable, lightweight business or casual clothes. Comfortable walking shoes are suggested. Hotels and meeting rooms are air-conditioned, so long sleeves or light sweaters are also recommended.

**What to Pack:** Outdoor gear is a must, as the best way to experience Denver and the surrounding area is through spending time outside. Sunglasses and sunscreen are absolutely necessary—the elevation of the “Mile High City” really does make the sun stronger. Cool, casual clothing is ideal for our warm, sunny summer days in Denver. When the sun goes down, the Denver weather may change. Evenings can be cool, so it might be advisable to have a light sweater on hand. Summer days in the mountains are quite pleasant. However, summer storms can arise suddenly and those who venture into the backcountry are strongly advised to have long pants, long-sleeved shirts, and a warm jacket close at hand.

**High Altitude Tips:** Don't let anything you hear about the mile-high altitude scare you. The air is just thinner and dryer. In fact, many people with respiratory problems move to Denver for the benefits of the dry air. Just follow these simple tips:

**Drink water** both before your trip to Denver, and while you are here, to help your body adjust easily to our higher altitude. The low humidity in Colorado keeps the air dry, like the desert, so you need about twice as much water here as you would drink at home. It is also recommended that you go easy on alcohol and exercise!

**Eat foods high in potassium**, such as; broccoli, bananas, avocado, cantaloupe, celery, greens, bran, chocolate, granola, dates, dried fruit, potatoes, tomatoes.

**Bring sunglasses, sunscreen, lip balm.** There is 25% less protection from the sun's rays at Denver's 5,280 feet elevation.

**Wear layers.** Because Denver is closer to the sun, it can feel much warmer than the actual temperature during the daytime, but then become very chilly after sundown.

## IMS co-sponsored meeting

**International Workshop on Flexible Modelling: Smoothing and Robustness (FMSR 2008)**

**November 12–14, 2008****UPDATED****Leuven, Belgium****w** <http://wis.kuleuven.be/stat/fmsr2008.php>

The workshop takes place in Leuven, a beautiful historic city in the northern part of Belgium. The general theme of the workshop is semi- and nonparametric analysis and robust statistical methods. More specific themes are, among others, flexible smoothing and penalization, model selection, nonparametric functional estimation, modelling dependencies and inference for copulas, robust multivariate outlier detection, semi- and nonparametric methods in time-series analysis.

There will be invited talks, contributed talks and poster sessions. The workshop will be followed by a short course for PhD-students.

List of Invited Speakers: **Anestis Antoniadis, Graciela Boente, Jianqing Fan, Peter Hall, Xuming He, Bruno Rémillard, Qiwei Yao, Bernard Silverman.**

*Pictured below is Arenberg Castle in Leuven, Belgium*



## IMS co-sponsored meeting

**Fall Conference on Statistics in Biology****October 13–15, 2008****Iowa State University, Ames, USA****w** No web page yet**NEW**

## IMS co-sponsored meeting.

**2009 Spring Research Conference on Statistics in Industry and Technology****May 27–29, 2009****Vancouver, Canada**

**w** <http://www.stat.sfu.ca/~boxint/src2009/>

Please email questions to Boxin Tang, [boxint@stat.sfu.ca](mailto:boxint@stat.sfu.ca).

The goal of the conference is to promote cross-disciplinary research in statistical methods in engineering, science and technology. This covers a wide range of application areas including environment, information and manufacturing sciences. The conference will provide a forum where participants can describe current research, identify important problems and areas of application, and formulate future research directions.

## IMS co-sponsored meeting

**Workshop for Women in Probability****October 5–7, 2008. Cornell University, Ithaca, New York**

**w** [www.math.cornell.edu/~durrett/wwp/](http://www.math.cornell.edu/~durrett/wwp/)

A conference for Women in Probability will be held October 5–7, 2008, at Cornell University. The conference begins Sunday morning and ends at noon Tuesday. The scientific program, which is being organized by Lea Popovic (Concordia) and Amber Puha (San Marcos), will feature talks by **Jennifer Chayes** (Microsoft), **Nina Gantert** (Muenster), **Masha Gordina** (U. Conn.), **Elena Kosygina** (Baruch), **Elizabeth Meckes** (Case Western), **Tai Melcher** (Virginia), **Kavita Ramanan** (CMU), **Deena Schmidt** (IMA), **Anja Sturm** (Delaware), and **Ruth Williams** (UCSD). Women probabilists, especially young researchers and advanced graduate students, are invited to participate. To register, and for information on how to apply for support for lodging and local expenses, go to the conference web page above. Funding for this conference comes from an NSF Research Training Grant to the probability group at Cornell, so preference will be given to supporting US citizens, nationals, and permanent residents. For questions about local arrangements, contact the conference secretary, Rick Durrett, [rtd1@cornell.edu](mailto:rtd1@cornell.edu)

## IMS co-sponsored meeting

**ISNI2008: International Seminar on Nonparametric Inference****November 5–7, 2008. Vigo, Spain**

**w** [www.isni2008.com](http://www.isni2008.com) [new URL]

ISNI2008 is a three-day international meeting devoted to nonparametric statistics. It will be held in Vigo, Galicia (in the north-west of Spain) on November 5–7, 2008. Its aim is to facilitate the exchange of research ideas and to promote collaboration among researchers in the field. The meeting is promoted by the three Galician research groups in nonparametric statistics (Vigo, Santiago de Compostela, and A Coruña), as well as by a number of close scientific collaborators coming from different countries in Europe and the USA.

ISNI2008 is organized by the SiDOR (Statistical Inference, Decision and Operations Research) group at the Faculty of Economics and Business, University of Vigo. It is co-sponsored or endorsed by the IAP Attraction Pole, the Institute of Mathematical Statistics, the Section on Nonparametric Statistics of the American Statistical Association, the Bernoulli Society for Mathematical Statistics and Probability, and the Galician and Spanish Societies for Statistics and Operations Research, among many other institutions.

The Scientific Programme includes seventeen invited talks given by leading researchers in several areas of nonparametric statistics: Speakers: **Peter Hall** (Melbourne); **Hans Georg Müller** (UC Davis); **Jianqing Fan** (Princeton); **Jan Swanepoel** (Potchefstroom); **Anthony Davison** (Lausanne); **Lutz Duembgen** (Bern); **Natalie Neumeyer** (Hamburg); **Gerda Claeskens** (KU Leuven); **Anestis**

**Antoniadis** (Grenoble); **Juan Carlos Pardo-Fernández** (Vigo); **Holger Dette** (Bochum); **Philippe Vieu** (Toulouse); **Gábor Lugosi** (Barcelona); **Jean Opsomer** (Colorado State); **Stefan Sperlich** (Göttingen); **Winfried Stute** (Giessen); and **Geert Molenberghs** (Hasselt).

Contributed papers are welcome (deadline **23 June 2008**). The *Journal of Nonparametric Statistics* will devote a special issue with contributions to the meeting.

Please visit [www.isni2008.com](http://www.isni2008.com) for further information. Pre-registration is now open.







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# *IMS COLLECTIONS*

## **Volume 2:**

## **Probability and Statistics: Essays in Honor of David A. Freedman**

*Deborah Nolan and Terry Speed, Editors*

This special 430-page volume has been written to honor David A. Freedman. Edited by Deborah Nolan and Terry Speed, the volume contains contributions from Freedman's friends and colleagues on a broad array of topics in probability and statistics. Included here are probability articles on convex distribution functions, Dutch book, a Markov chain, and Brownian motion; statistics papers on projection pursuit, multivariate likelihood, multiple testing, French multivariate analysis, and influence functions; and papers that present historical and philosophical perspectives on probability and statistics. As a tribute to Freedman's eminence as a consultant and applied statistician, the chapters in this volume also cover a diverse set of application areas, including the U.S. census undercount, DNA evidence in the courtroom, earthquake prediction, hormone replacement therapy, seal foraging, and machine scoring of open-ended exam questions.

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IMS sponsored meeting

## 2008 WNAR/IMS Meeting June 22-25 Davis, CA

The Statistics Department at the University of California, Davis, cordially invites you to participate in the 2008 western regional meeting of WNAR and the IMS. Following up on the traditions established at the two previous WNAR/IMS meetings hosted by the Davis campus, the meeting will feature an outstanding program of invited speakers, several plenary addresses, special sessions for student papers, sessions and activities for new researchers and a short course on widely applicable developing methodology. There will be a hosted wine-tasting reception on Sunday evening, June 22, and a Special Banquet on Tuesday, June 24 commemorating the Conference and celebrating the 100th anniversary of the campus.

### WNAR Presidential Invited Address

Jerry Lawless  
University of Waterloo  
**WNAR Program Chair**  
Patrick Heagerty  
University of Washington

### IMS Program Chair

Charles Kooperberg  
Fred Hutchinson Cancer Research Center

### IMS 2008 Medallion Lecturer

Peter Bartlett  
University of California, Berkeley

### Local Organizer

Frank Samaniego & Chris Drake  
University of California, Davis



### WNAR/IMS Western Regional Meeting Short Course: "R Survey Package Analyses for Two Phase Studies, with Applications in Epidemiology" by T. Lumley and N. Breslow.

June 22, 2008

<http://conferences.ucdavis.edu/wnar-ims2008>

Hosted by the Department of Statistics, University of California, Davis.

### WNAR/IMS Western Regional Meeting

June 23-25, 2008

<http://conferences.ucdavis.edu/wnar-ims2008>

Annual west-coast meeting, hosted this year by the Department of Statistics, University of California, Davis, featuring invited and contributed paper sessions and plenary speakers **Jerry Lawless** and **Peter Bartlett**. Registration and wine-tasting reception (in the Davis tradition) on Sunday, exquisite Conference Banquet on Tuesday, Student Paper Competition, Young Researchers Luncheon. Program Chairs Patrick Heagerty [heagerty@u.washington.edu](mailto:heagerty@u.washington.edu) and Charles Kooperberg [clk@fhcrc.org](mailto:clk@fhcrc.org); Local organizers: Chris Drake [cmdrake@ucdavis.edu](mailto:cmdrake@ucdavis.edu) and Frank Samaniego [fjsamaniego@ucdavis.edu](mailto:fjsamaniego@ucdavis.edu).

IMS sponsored meeting

### 11th IMS North American Meeting of New Researchers in Statistics and Probability July 29 – August 2, 2008

University of Colorado, Boulder

<http://www.stat.rutgers.edu/~rebecka/NRC>

Local chair: Ryan Elmore.

The New Researchers' Committee of the IMS is organizing a meeting of recent PhD recipients in Statistics and Probability. The purpose of the conference is to promote interaction among new researchers primarily by introducing them to each other's research in an informal setting. All participants are expected to give a short, expository talk or contribute a poster on their research.

Anyone who has received a PhD in (or after) 2003, or expects to receive a PhD in 2008, is eligible to attend.

The meeting is to be held immediately prior to the 2008 Joint Statistical Meetings in Denver (see page 22).

Abstracts for these papers and posters will appear on the website above. To apply, please submit a letter of interest, curriculum vitae and title and abstract to:

*Rebecka Jorsten, Department of Statistics,  
Rutgers University, NJ 08854*

• [rebecka@stat.rutgers.edu](mailto:rebecka@stat.rutgers.edu)

OR

*Ryan Elmore, Department of Statistics,  
Colorado State University Campus  
at Fort Collins, CO 80523*

• [elmore@stat.colostate.edu](mailto:elmore@stat.colostate.edu).

Electronic mail is preferred for abstract submission. Deadline for receipt of applications is **February 1, 2008**. Please apply promptly since the number of participants is limited.

Priority will be given to first time participants. Women and minorities are encouraged to apply. Also, contingent on the availability of funds, support to defray travel and housing costs will be offered.

**IMS co-sponsored meeting:****2009 ENAR/IMS Spring Meeting****March 15–18, 2009****Grand Hyatt San Antonio, San Antonio, TX****w** <http://www.enar.org/meetings.cfm>**IMS co-sponsored meeting:****2010 ENAR/IMS Spring Meeting****March 21–24, 2010****Hyatt Regency New Orleans, New Orleans, LA****w** <http://www.enar.org/meetings.cfm>**IMS co-sponsored meeting****IWAP2008: International Workshop in Applied Probability****July 7–10, 2008****Université Technologie de Compiègne (UTC), Compiègne, France****w** <http://www.lmac.utc.fr/IWAP2008/>

Contacts: Nikolaos Limnios **e** [nikolaos.limnios@utc.fr](mailto:nikolaos.limnios@utc.fr) and Joseph Glaz **e** [joseph.glaz@uconn.edu](mailto:joseph.glaz@uconn.edu) (IMS Rep)

This workshop will be an interdisciplinary conference in the field of probability with applications to several areas of science and technology, including actuarial science and insurance, bioinformatics, biosurveillance, computer science, data mining, finance, learning theory and target tracking. Its aim is to bring together, and to foster exchanges and collaborations among, scientists working in applications to any field, including those listed above.

**IMS co-sponsored meeting****4th Cornell Probability Summer School****June 23 – July 4, 2008. Cornell University, Ithaca, NY****w** <http://www.math.cornell.edu/~durrett/CPSS2008/>

This Fourth Cornell Probability Summer School will focus on probability problems that arise from ecology. The main lecturers will be **Claudia Neuhauser** (Minnesota), **Sylvie Méléard** (Paris), **Simon Levin** (Princeton), and **Ted Cox** (Syracuse). In addition there will be one or two one-hour talks by **Steve Ellner** (Cornell), **Alan Hastings** (U.C. Davis), **Steve Krone** (U. of Idaho), **Nicolas Lanchier** (Arizona State), and **Rinaldo Schinazi** (Colorado Springs).

The conference web page has more information. All participants should fill out the registration form found there. This meeting was partially supported by a grant from the National Science Foundation to the probability group at Cornell University.

**IMS co-sponsored meeting****33rd Conference on Stochastic Processes and their Applications****July 27–31, 2009****Berlin, Germany****w** <http://www.math.tu-berlin.de/SPA2009/>

Featuring two IMS Medallion Lectures, from **Claudia Klüppelberg** and **Gordon Slade**, a Lévy Lecture from **Amir Dembo**, and a Doob Lecture from **Ed Perkins**.

Organizing committee chair: Jochen Blath; co-chair: Peter Imkeller.

IMS Reps to Program Committee: David Aldous, Martin Barlow, Gérard Ben Arous, Mu-Fa Chen, Anna de Masi, Hans Föllmer, Luis Gorostiza, Dmitry Kramkov, Russ Lyons, Claudia Neuhauser, Ed Waymire, and Ofer Zeitouni.



*Berlin's world-famous Philharmonie, designed by Hans Scharoun, is home to the Berlin Philharmonic Orchestra, one of the world's leading orchestras, whose current principal conductor is Sir Simon Rattle, known for his championing of contemporary classical music. The BPO also supports several chamber music ensembles.*

**IMS co-sponsored meeting****Seventh Workshop on Bayesian Nonparametrics****June 21–25, 2009****Collegio Carlo Alberto, Moncalieri, Italy****w** <http://bnpworkshop.carloalberto.org/>

The workshop will be held at the Collegio Carlo Alberto in Moncalieri, on the outskirts of Turin. The meeting will feature the latest developments in Bayesian nonparametrics and will cover a wide variety of both theoretical and applied topics such as foundations of the Bayesian nonparametric approach, construction and properties of prior distributions, asymptotics, interplay with probability theory and stochastic processes, statistical modelling, computational algorithms and applications in machine learning, biostatistics, bioinformatics, economics and econometrics.

**IMS co-sponsored meeting****International Symposium in Statistics (ISS) on Inferences in Generalized Linear Longitudinal Mixed Models (GLMM)****July 20–22, 2009****Memorial University, St John's, Canada****w** [www.iss-2009-stjohns.ca](http://www.iss-2009-stjohns.ca)

The objective of this ISS is to bring together a set of speakers and discussants to describe the latest research such as parametric and non-parametric inferences in this emerging area with applications to Biostatistics, Econometrics, and Ecological and Environmental studies, among others.





### IMS co-sponsored meeting series

#### 2008 NSF-CBMS Regional Research Conferences in the Mathematical Sciences

The US National Science Foundation is supporting nine NSF-CBMS Regional Research Conferences during 2008. The remaining meetings are listed, right. These conferences are intended to stimulate interest and activity in mathematical research. Each five-day conference features a distinguished lecturer who delivers ten lectures on a topic of important current research in one sharply-focused area of the mathematical sciences. The lecturer subsequently prepares an expository monograph based upon these lectures, which is normally published as a part of a regional conference series.



Support for about 30 participants is provided and the conference organizer invites both established researchers and interested newcomers to attend. Contact the conference organizer for information about an individual conference. Questions should be directed to: *CBMS, 1529 18th St. NW, Washington DC 20036-1385*.  
**t** (202) 293-1170; **f** (202) 293-3412; **e** [rosier@georgetown.edu](mailto:rosier@georgetown.edu) or [lkolbe@maa.org](mailto:lkolbe@maa.org)

#### Knots and Topological Quantum Computing

July 9–13, 2008, Univ. of Central Oklahoma

Lecturer: **Zhenghan Wang**

**Ara Basmajian** (Short Course on Knots)

Charlotte Simmons and Jesse Byrne, organizers: 405-974-5294, [cksimmons@ucok.edu](mailto:cksimmons@ucok.edu); 405-974-5575, [jbyrne@ucok.edu](mailto:jbyrne@ucok.edu)  
[www.math.ucok.edu/cbms/cbms.html](http://www.math.ucok.edu/cbms/cbms.html)

#### Malliavin Calculus and its Applications

August 7–12, 2008, Kent State University

Lecturer: **David Nualart**

Oana Mocioalca and Kazim M. Khan, organizers: 330-672-9083, [oana@math.kent.edu](mailto:oana@math.kent.edu); 330-672-9110, [kazim@math.kent.edu](mailto:kazim@math.kent.edu)  
<http://www.math.kent.edu/math/CBMS2008.cfm>

#### Tropical Geometry and Mirror Symmetry

December 13–17, 2008, Kansas State Univ.

Lecturer: **Mark Gross**

Ricardo Castano-Bernard, Yan Soibelman, and Ilia Zharkov, organizers: 785-532-0585, [rcastano@math.ksu.edu](mailto:rcastano@math.ksu.edu); 785-532-0584, [soibel@math.ksu.edu](mailto:soibel@math.ksu.edu); 617-495-8797, [zharkov@math.harvard.edu](mailto:zharkov@math.harvard.edu)  
[www.math.ksu.edu/~rcastano/CBMS.html](http://www.math.ksu.edu/~rcastano/CBMS.html)

## Announcing your meeting

Meetings announcements should be sent to Elyse Gustafson, IMS Executive Director, [erg@imstat.org](mailto:erg@imstat.org) who will then submit them to the *IMS Bulletin*, e-Bulletin and IMS web site, [www.imstat.org/meetings](http://www.imstat.org/meetings). There is no charge for this service. Announcements for non-IMS sponsored meetings may be included in an IMS e-bulletin (monthly email to members) upon request, subject to space. Announcements are updated on the web site daily, and will be included in the next available printed *IMS Bulletin*.

### Announce as early as possible

As soon as the meeting name, dates, location, and web page are set for the meeting, submit this information. We will place it immediately into the web and *Bulletin* calendars. This will help people put it on their radar screen. The sooner, the better for this: we can place this information months, and even years, in advance.

### Print advertisements

IMS publishes meeting advertisements as a service to its members and the statistical community. All advertisements are subject to editorial approval and may be edited. For guidance on content and style, please read [http://www.imstat.org/program/prog\\_announce.htm](http://www.imstat.org/program/prog_announce.htm). Full details about the requirements are inside the back cover of every issue.

Advertisements should be submitted at least 6–9 months prior to the meeting. Special consideration should be given to deadlines when placing advertisements. You want to ensure people have a chance to see the ad in time to make your deadlines. Mail dates for the *Bulletin* can be found inside the back cover. Most members will receive the *Bulletin* by 3–4 weeks after the mail date, and it is available (free) online 1–2 weeks before the mail date.

# Other Meetings Around the World: Announcements and Calls for Papers

## First Workshop in Stochastic Modeling

August 27–29, 2008

Universidade de São Paulo, Brazil

[w http://dfm.ffclrp.usp.br/mat/wsm1](http://dfm.ffclrp.usp.br/mat/wsm1)

This workshop will provide a forum for the discussion of new developments in probability theory and its applications. There will be two plenary talks and about five shorter presentations per day.

The topics to be discussed include percolation, random walks in random environment, interacting particle systems, systems of interacting agents, stochastic calculus and the application of these to models in finance, economy and physics.

The workshop will take place at the Department of Physics and Mathematics in Ribeirão Preto, Universidade de São Paulo, Brazil.

## First Summer School on Copulas

September 17–19, 2008

Johannes Kepler University, Linz, Austria

[w http://www.flll.jku.at/ssc](http://www.flll.jku.at/ssc)

This Summer School aims at providing a meeting point for exchanging ideas and presenting new directions on the theory of copulas and related applications.

Keynote speakers for this edition of the Summer School are **Claudia Klüppelberg** and **Ludger Rüschendorf**.

## 27th Annual Conference on Multivariate Statistical Analysis (MSA'08)

November 3–5, 2008

Lodz, Poland

[w http://www.msa.uni.lodz.pl](http://www.msa.uni.lodz.pl)

Organizer: Chair of Statistical Methods, University of Lodz. Chair: Czeslaw Domanski [e msa@uni.lodz.pl](mailto:msa@uni.lodz.pl)

## International Symposium in Statistics (ISS) on GLLMM

July 20–22, 2009

Memorial University, St. John's, Canada

[w www.iss-2009-stjohns.ca](http://www.iss-2009-stjohns.ca)

The objective of this symposium on GLLMM (Generalized linear longitudinal mixed models) is to bring together a set of speakers and discussants to describe the latest research such as parametric and non-parametric inferences in this emerging area with applications to Biostatistics, Econometrics, and Ecological and Environmental studies, among others. General information on the symposium including registration and accommodation can be found on [www.iss-2009-stjohns.ca](http://www.iss-2009-stjohns.ca)

For further specific information, contact the General Chair, Brajendra Sutradhar [e bsutradh@math.mun.ca](mailto:bsutradh@math.mun.ca)

## Sixth International Conference on Multiple Comparison Procedures

March 24–27, 2009

Tokyo, Japan

[w www.mcp-conference.org](http://www.mcp-conference.org)

The International Conference on Multiple Comparison Procedures will be held on March 24–27, 2009 at Morito Academy Hall of Tokyo University of Science. The main goal of the conference is to promote research and applications of multiple comparison procedures and to exchange information on recent research directions in this area. The application areas of multiple comparison procedures are a rich and important source of cross-disciplinary statistical research. The conference will cover many current topics as adaptive and sequential designs, bioinformatics, clinical trials, genomics, closed testing and partitioning principle, false discovery rate, multiple endpoints and so on. An important role of the conference will be to provide a forum for technical interactions among industry practitioners, research scientists from subject matter area and statisticians. A website is open at [www.mcp-conference.org](http://www.mcp-conference.org) with further information.

Co-chairs: Chihiro Hirotsu (Meisei University, Japan) and Martin Posch (Medical University of Vienna, Austria)



# Employment Opportunities around the world

There's a new look to the IMS job search pages! Aware that nearly everyone uses the internet to advertise job vacancies, IMS and JobTarget have joined forces for job seekers and advertisers in statistics or probability—IMS members and non-members alike. The service is free to job seekers. To search job openings online, log on to <http://jobs.imstat.org> and click on "View Jobs"

If you have a job to advertise, go to the same webpage and click on "Post a Job". A single 30-day online job posting costs just \$175.00, and we also include the basic information about your job ad here in the *IMS Bulletin* at no extra charge. The advertising service is open to all employers in the area of statistics and probability, both academic and non-academic.

## Switzerland: Zürich



Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich

### Professor in Mathematics (Mathematical Finance)

ETH Zurich invites applications for a faculty position in mathematics (mathematical finance) in the Department of Mathematics ([www.math.ethz.ch/about\\_us/index](http://www.math.ethz.ch/about_us/index)). The duties of the new professor include teaching and research in mathematical foundations of finance and related mathematical areas. Together with the colleagues of the Department, he or she will be responsible for undergraduate and graduate courses in mathematics for students of mathematics, engineering, and natural sciences as well as for courses in the Master in Finance program, jointly run by ETH Zurich and the University of Zurich. Courses at Master level may be taught in English.

We are seeking candidates with an internationally recognized research record in mathematics related to finance and with proven ability to direct research of high quality. Willingness to teach at all university levels and to collaborate with colleagues and the financial industry is expected.

Please submit your application together with a curriculum vitae and a list of publications to the President of ETH Zurich, Prof. Dr. R. Eichler, ETH Zurich, Raemistrasse 101, 8092 Zurich, Switzerland, no later than August 31, 2008. With a view toward increasing the number of female professors, ETH Zurich specifically encourages female candidates to apply.

## Belgium: Leuven

### Katholieke Universiteit Leuven

Full-time Tenured Academic Position in Statistics: Professor  
[http://jobs.imstat.org/c/job.cfm?site\\_id=1847&job\\_id=4459177](http://jobs.imstat.org/c/job.cfm?site_id=1847&job_id=4459177)

## Canada: Wolfville

### Acadia University

Postdoctoral Fellowship  
[http://jobs.imstat.org/c/job.cfm?site\\_id=1847&job\\_id=4459196](http://jobs.imstat.org/c/job.cfm?site_id=1847&job_id=4459196)

## Canada: Montreal, Québec

### Université de Montréal

Position in Statistics: Assistant Professor  
[http://jobs.imstat.org/c/job.cfm?site\\_id=1847&job\\_id=4459201](http://jobs.imstat.org/c/job.cfm?site_id=1847&job_id=4459201)

## Cyprus: Nicosia

### University of Cyprus

Lecturer or Assistant Professor  
[http://jobs.imstat.org/c/job.cfm?site\\_id=1847&job\\_id=4459210](http://jobs.imstat.org/c/job.cfm?site_id=1847&job_id=4459210)

## Switzerland: Lausanne

### Swiss Federal Institute of Technology, Lausanne (EPFL)

Postdoctoral/PhD Positions in Statistics/Applied Probability:  
Postdoctoral Fellowship  
[http://jobs.imstat.org/c/job.cfm?site\\_id=1847&job\\_id=4459276](http://jobs.imstat.org/c/job.cfm?site_id=1847&job_id=4459276)

## United States: Los Angeles, California

### University of California, Los Angeles

Professor of Statistics  
[http://jobs.imstat.org/c/job.cfm?site\\_id=1847&job\\_id=4459286](http://jobs.imstat.org/c/job.cfm?site_id=1847&job_id=4459286)

## United States: West Lafayette, Indiana

### Purdue University

Faculty Position in Social and Behavioral Statistics: Professor  
[http://jobs.imstat.org/c/job.cfm?site\\_id=1847&job\\_id=4459291](http://jobs.imstat.org/c/job.cfm?site_id=1847&job_id=4459291)

## United States: Houston, Texas

### Rice University

Postdoctoral Instructorship/Fellowship  
[http://jobs.imstat.org/c/job.cfm?site\\_id=1847&job\\_id=4459345](http://jobs.imstat.org/c/job.cfm?site_id=1847&job_id=4459345)

## United States: Seattle, Washington

### Fred Hutchinson Cancer Research Center

Faculty Position, Biostatistician: Professor  
[http://jobs.imstat.org/c/job.cfm?site\\_id=1847&job\\_id=4459351](http://jobs.imstat.org/c/job.cfm?site_id=1847&job_id=4459351)



# LECTURE NOTES –MONOGRAPH SERIES



LNMS Volume 56:

## **PAC-Bayesian Supervised Classification: The Thermodynamics of Statistical Learning**

*by Olivier Catoni*

This monograph deals with adaptive supervised classification, using tools borrowed from statistical mechanics and information theory, stemming from the PAC-Bayesian approach pioneered by David McAllester and applied to a conception of statistical learning theory forged by Vladimir Vapnik. Using convex analysis on the set of posterior probability measures, we show how to get local measures of the complexity of the classification model involving the relative entropy of posterior distributions with respect to Gibbs posterior measures. We then discuss relative bounds, comparing the generalization error of two classification rules, showing how the margin assumption of Mammen and Tsybakov can be replaced with some empirical measure of the covariance structure of the classification model. We show how to associate to any posterior distribution an effective temperature relating it to the Gibbs prior distribution with the same level of expected error rate, and how to estimate this effective temperature from data, resulting in an estimator whose expected error rate converges according to the best possible power of the sample size adaptively under any margin and parametric complexity assumptions. We describe and study an alternative selection scheme based on relative bounds between estimators, and present a two step localization technique which can handle the selection of a parametric model from a family of those. We show how to extend systematically all the results obtained in the inductive setting to transductive learning, and use this to improve Vapnik's generalization bounds, extending them to the case when the sample is made of independent non-identically distributed pairs of patterns and labels. Finally we review briefly the construction of Support Vector Machines and show how to derive generalization bounds for them, measuring the complexity either through the number of support vectors or through the value of the transductive or inductive margin.

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# International Calendar of Statistical Events

IMS meetings are highlighted in **maroon** with the  logo and new or updated entries have the  symbol. **t** means telephone, **f** fax, **e** email and **w** website. Please submit your meeting details and any corrections to Elyse Gustafson at [erg@imstat.org](mailto:erg@imstat.org)

## July 2008

**July 1–4:** Prague, Czech Republic. ISBIS-2008: International Society of Business and Industrial Statistics. Milena Zeithamlova **e** [milena@action-m.com](mailto:milena@action-m.com) **w** <http://www.action-m.com/isbis2008>

**July 6–11:** Montreal, Canada. MCQMC2008: 8th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing. **w** [http://www.crm.math.ca/mcqmc08/index\\_e.shtml](http://www.crm.math.ca/mcqmc08/index_e.shtml)


**July 6–19:** Saint-Flour, France. 38th Saint-Flour Probability Summer School. **w** <http://math.univ-bpclermont.fr/stflour/>

 **July 7–10:** Université de Technologie, Compiègne, France. IWAP2008: International Workshop on Applied Probability. Contact Nikolaos Limnios **e** [nikolaos.limnios@utc.fr](mailto:nikolaos.limnios@utc.fr) and Joseph Glaz **e** [joseph.glaz@uconn.edu](mailto:joseph.glaz@uconn.edu) **w** <http://www.lmac.utc.fr/IWAP2008/>

**July 7–11:** Utrecht, The Netherlands. 23rd International Workshop on Statistical Modelling (IWSM). **w** [www.fss.uu.nl/iwsm2008](http://www.fss.uu.nl/iwsm2008)

**July 7–18:** ICTP, Trieste, Italy. Summer School on Stochastic Geometry, the Stochastic Loewner Evolution and Non-Equilibrium Growth Processes. Marina de Comelli, school's secretary **e** [smr1952@ictp.it](mailto:smr1952@ictp.it) **w** [http://cdsagenda5.ictp.trieste.it/full\\_display.php?id=a07161](http://cdsagenda5.ictp.trieste.it/full_display.php?id=a07161)

**July 9:** Helsinki, Finland. Nonparametric Bayes 2008. **e** [npbayes@googlegmail.com](mailto:npbayes@googlegmail.com) **w** <http://npbayes.wikidot.com>

 **July 9–13:** Univ. of Central Oklahoma. Knots and Topological Quantum Computing [NSF-CBMS]. **w** [www.math.ucok.edu/cbms/cbms.html](http://www.math.ucok.edu/cbms/cbms.html)

**July 10–11:** National University of Singapore. Symposium in honor of Kiyosi Itô: Stochastic Analysis and its Impact in Mathematics and Science. **w** <http://www.ims.nus.edu.sg/Programs/kiyosi08/>

**July 13–18:** Dublin, Ireland. IBC2008: XXIVth International Biometric Conference. **w** <http://www.conferencepartners.ie/ibcdublin2008/>

**July 14–17:** Berkeley, California. Workshop on Integrating Computing into Statistics Curricula. **w** <http://www.stat.berkeley.edu/users/statcur/Workshop2/index.html>

**July 14–18:** Sandbjerg, Denmark. Efficient Monte Carlo: From Variance Reduction to Combinatorial Optimization. In honor of Reuven Rubinstein's 70th birthday. Contact Oddbjørg Wethelund **t** +45 8942 3515 **w** <http://www.thiele.au.dk/Rubinstein/>

**July 14–18:** Crete, Greece. International Conference on Statistical Physics (SigmaPhi2008). **w** <http://www.polito.it/sigmaphi2008>

 **July 14–19:** Singapore. IMS Annual Meeting/7th World Congress in Probability and Statistics. Local chair: Louis Chen. **w** <http://www.ims.nus.edu.sg/Programs/wc2008/index.htm> **e** [wc2008\\_general@nus.edu.sg](mailto:wc2008_general@nus.edu.sg)


**July 15–17:** Leeds, UK. LASR 2008: The Art and Science of Statistical Bioinformatics. Stuart Barber **e** [workshop@maths.leeds.ac.uk](mailto:workshop@maths.leeds.ac.uk) **w** <http://www.maths.leeds.ac.uk/lasr2008>

**July 21–25:** Hamilton Island, Australia. International Society for Bayesian Analysis 9th World Meeting. **e** [isba08@qut.edu.au](mailto:isba08@qut.edu.au) **w** <http://www.isba2008.sci.qut.edu.au>

**July 23–26:** Tomar, Portugal. 17th International Workshop on Matrices and Statistics (IWMSO8) in Honor of Professor T.W. Anderson's 90th Birthday. Contact Professor Francisco Carvalho **t** +351 249 328 100; **e** [fpcarvalho@ipt.pt](mailto:fpcarvalho@ipt.pt) **w** [www.ipt.pt/iwms08](http://www.ipt.pt/iwms08)

**July 24–26:** University of Vienna, Austria. Current Trends and Challenges in Model Selection and Related Areas. **w** [http://www.univie.ac.at/workshop\\_modelselection/](http://www.univie.ac.at/workshop_modelselection/)


**July 28 – September 21:** National University of Singapore. Mathematical Horizons for Quantum Physics. **w** <http://www.ims.nus.edu.sg/Programs/mhqp08/index.htm>

 **July 29 – August 2:** Boulder, CO. 11th IMS North American Meeting of New Researchers in Statistics and Probability. **w** <http://www.stat.rutgers.edu/~rebecka/NRC>

**July 29 – August 2:** University of Camerino, Italy. International Conference on Strongly Coupled Coulomb Systems. **w** <http://sccs2008.unicam.mm.st/>

# International Calendar *continued*

## August 2008


 **August 3–7: Denver, Colorado. JSM2008.** [w](http://www.amstat.org/meetings/jsm/2008/) <http://www.amstat.org/meetings/jsm/2008/>

**August 3 and 6: Denver, Colorado (at JSM). NISS/ASA Writing Workshop for Junior Researchers.** [w](http://www.amstat.org/meetings/wwjr/) <http://www.amstat.org/meetings/wwjr/>

**August 3–9: Ouro Preto, Minas Gerais, Brazil. XII Brazilian School of Probability (Escola Brasileira de Probabilidade).** [w](http://www.mat.ufmg.br/ebp12) <http://www.mat.ufmg.br/ebp12>

**August 3–16: Middelfart, Denmark. Summer school and workshop: Stochastic Differential Equation Models with Applications to the Insulin-Glucose System and Neuronal Modeling.** [w](http://www.math.ku.dk/~susanne/SummerSchool2008/) <http://www.math.ku.dk/~susanne/SummerSchool2008/>

**August 4–9: CRM, Montréal. Stochastic Loewner Evolution and Scaling Limits [CRM program]** [w](http://www.crm.umontreal.ca/Mathphys2008/loewner_e.shtml) [http://www.crm.umontreal.ca/Mathphys2008/loewner\\_e.shtml](http://www.crm.umontreal.ca/Mathphys2008/loewner_e.shtml)


 **August 7–12: Kent State University. Malliavin Calculus and its Applications [NSF-CBMS].** [w](http://www.math.kent.edu/math/CBMS2008.cfm) <http://www.math.kent.edu/math/CBMS2008.cfm>

**August 17–21: Copenhagen, Denmark. ISCB-29: International Society for Clinical Biostatistics.** [w](http://www.iscb2008.info) [www.iscb2008.info](http://www.iscb2008.info)

**August 18–23: CRM, Montréal. Laplacian Growth and Related Topics [CRM program]** [w](http://www.crm.umontreal.ca/Mathphys2008/laplacian_e.shtml) [http://www.crm.umontreal.ca/Mathphys2008/laplacian\\_e.shtml](http://www.crm.umontreal.ca/Mathphys2008/laplacian_e.shtml)

**August 25–30: CRM, Montréal. Random Matrices, Related Topics and Applications [CRM program]** [w](http://www.crm.umontreal.ca/Mathphys2008/matrices_e.shtml) [http://www.crm.umontreal.ca/Mathphys2008/matrices\\_e.shtml](http://www.crm.umontreal.ca/Mathphys2008/matrices_e.shtml)

**August 26–29: Southampton Statistical Sciences Research Institute, UK. Workshop and Conference on Sample Surveys and Bayesian Statistics.** [w](http://www.s3ri.soton.ac.uk/ssbs08/) [www.s3ri.soton.ac.uk/ssbs08/](http://www.s3ri.soton.ac.uk/ssbs08/)


 **August 27–29: Universidade de São Paulo, Brazil. First Workshop in Stochastic Modeling.** [w](http://dfm.ffclrp.usp.br/mat/wsm1) <http://dfm.ffclrp.usp.br/mat/wsm1>

## September 2008

**September 1–5: East Midlands Conference Centre, Nottingham, UK. 2008 International Conference of the Royal Statistical Society.** [w](http://www.rss.org.uk/rss2008) [www.rss.org.uk/rss2008](http://www.rss.org.uk/rss2008)

**September 1–6: CRM, Montréal. Random Tilings, Random Partitions and Stochastic Growth Processes [CRM program]** [w](http://www.crm.umontreal.ca/Mathphys2008/tilings_e.shtml) [http://www.crm.umontreal.ca/Mathphys2008/tilings\\_e.shtml](http://www.crm.umontreal.ca/Mathphys2008/tilings_e.shtml)

**September 8–12: Antalya, Turkey. International Conference on Robust Statistics: ICORS 2008.** Organizer: Olcay Arslan, Cukurova University [e](mailto:oarslan@cu.edu.tr) [oarslan@cu.edu.tr](http://www.icors08.org) [w](http://www.icors08.org) [www.icors08.org](http://www.icors08.org)


 **September 17–19: Johannes Kepler University, Linz, Austria. First Summer School on Copulas.** [w](http://www.fljl.jku.at/ssc) <http://www.fljl.jku.at/ssc>



**September 22–26: Blaubeuren, Germany. Fifth Colloquium on Mathematics and Computer Science.** [w](http://www-computerlabor.math.uni-kiel.de/stochastik/colloquium08/main.html) <http://www-computerlabor.math.uni-kiel.de/stochastik/colloquium08/main.html>

**September 25: Amsterdam, The Netherlands. Fourth International Longevity Risk and Capital Markets Solutions Conference.** [e](mailto:emma.brophy1@city.ac.uk) [emma.brophy1@city.ac.uk](mailto:emma.brophy1@city.ac.uk)

**September 29 – October 4: CRM, Montréal. Quantum Many-Body Systems, Bose-Einstein Condensation [CRM program]** [w](http://www.crm.umontreal.ca/Mathphys2008/bose-einstein_e.shtml) [http://www.crm.umontreal.ca/Mathphys2008/bose-einstein\\_e.shtml](http://www.crm.umontreal.ca/Mathphys2008/bose-einstein_e.shtml)

## October 2008


 **October 5–7: Cornell University, Ithaca, NY. Workshop for Women in Probability.** Program organizers: Lea Popovic and Amber Puha. Local Arrangements: Rick Durrett [e](mailto:rd1@cornell.edu) [rd1@cornell.edu](http://www.math.cornell.edu/~durrett/www/) [w](http://www.math.cornell.edu/~durrett/www/) [www.math.cornell.edu/~durrett/www/](http://www.math.cornell.edu/~durrett/www/)

  **October 13–15: Iowa State University, Ames, USA. Fall Conference on Statistics in Biology.** [w](#) No web page yet


**October 24–25: Northwestern University, Evanston, IL. 30th Midwest Probability Colloquium.** [w](http://www.math.northwestern.edu/mwp) [www.math.northwestern.edu/mwp](http://www.math.northwestern.edu/mwp) (to be updated)



## November 2008

 **November 3–5:** Lodz, Poland. 27th Annual Conference on Multivariate Statistical Analysis (MSA'o8). Czeslaw Domanski [e msa@uni.lodz.pl](mailto:msa@uni.lodz.pl) [w http://www.msa.uni.lodz.pl](http://www.msa.uni.lodz.pl)

 **November 5–7:** Vigo, Spain. ISNI2008: International Seminar on Non-parametric Inference. [w www.isni2008.com](http://www.isni2008.com)


 **November 12–14:** Leuven, Belgium. International Workshop on Flexible Modelling: Smoothing and Robustness (FMSR 2008). [w http://wis.kuleuven.be/stat/fmsr2008.php](http://wis.kuleuven.be/stat/fmsr2008.php)

## December 2008

**December 1–3:** Hanoi, Vietnam. 2008 International Conference on Applied Probability and Statistics (CAPS 2008). [w http://www.action-m.com/CAPS2008/](http://www.action-m.com/CAPS2008/)

**December 8–12:** Tropicana Casino Resort, Atlantic City, NJ. 64th Annual Deming Conference on Applied Statistics. Walter R. Young [e demingchair@gmail.com](mailto:demingchair@gmail.com) [w http://www.demingconference.com/](http://www.demingconference.com/)


**December 13–16:** Rutgers University, NJ. 100th Statistical Mechanics Conference. [e Joel Lebowitz lebowitz@math.rutgers.edu](mailto:lebowitz@math.rutgers.edu)

 **December 13–17:** Kansas State Univ. Tropical Geometry and Mirror Symmetry [NSF-CBMS]. [w www.math.ksu.edu/~rcastano/CBMS.html](http://www.math.ksu.edu/~rcastano/CBMS.html)

## January 2009

**January 4–10:** CRM, Montréal. Random Functions, Random Surfaces and Interfaces [CRM program] [w http://www.crm.umontreal.ca/Mathphys2008/functions\\_e.shtml](http://www.crm.umontreal.ca/Mathphys2008/functions_e.shtml)

## March 2009

 **March 15–18:** Grand Hyatt, San Antonio, Texas. 2009 ENAR/IMS Spring Meeting. [w www.enar.org/meetings.cfm](http://www.enar.org/meetings.cfm)

 **March 24–27:** Tokyo, Japan. Sixth International Conference on Multiple Comparison Procedures. Co-chairs: Chihiro Hirotsu (Meisei University, Japan) and Martin Posch (Medical University of Vienna, Austria). [w www.mcp-conference.org](http://www.mcp-conference.org)

## May 2009

**May 18–23:** CRM, Montréal. Interacting Stochastic Particle Systems [CRM program] [w http://www.crm.umontreal.ca/Mathphys2008/stochastics\\_e.shtml](http://www.crm.umontreal.ca/Mathphys2008/stochastics_e.shtml)

  **May 27–29:** Vancouver, Canada. 2009 Spring Research Conference on Statistics in Industry and Technology. Boxin Tang [e boxint@stat.sfu.ca](mailto:boxint@stat.sfu.ca) [w http://www.stat.sfu.ca/~boxint/src2009/](http://www.stat.sfu.ca/~boxint/src2009/)

**May 31 – June 3:** Vancouver, Canada. 2009 SSC Annual Meeting. Local Arrangements: Nancy Heckman (UBC). Program: Wendy Lou (Toronto) [w http://www.ssc.ca/main/meetings\\_e.html](http://www.ssc.ca/main/meetings_e.html)

## June 2009


**June 8–13:** CRM, Montréal. Disordered Systems: Spin Glasses [CRM program] [w http://www.crm.umontreal.ca/Mathphys2008/spin\\_e.shtml](http://www.crm.umontreal.ca/Mathphys2008/spin_e.shtml)

  **June 21–25:** Collegio Carlo Alberto, Moncalieri, Italy. Seventh Workshop on Bayesian Nonparametrics. [w http://bnpworkshop.carloalberto.org/](http://bnpworkshop.carloalberto.org/)


## July 2009

**July 12–15:** Cornell University, Ithaca, NY. 2009 Applied Probability Society Conference. Co-organizers: Shane Henderson and Mark Lewis.

  **July 20–22:** Memorial University, St John's, Canada. International Symposium in Statistics (ISS) on GLLMM. Brajendra Sutradhar [e bsutradh@math.mun.ca](mailto:bsutradh@math.mun.ca) [w www.iss-2009-stjohns.ca](http://www.iss-2009-stjohns.ca)

 **July 27–31:** Berlin, Germany. 33rd Conference on Stochastic Processes and their Applications. Organising committee chair: Jochen Blath; co-chair: Peter Imkeller. [w http://www.math.tu-berlin.de/SPA2009/](http://www.math.tu-berlin.de/SPA2009/)

## August 2009


 **August 2–6:** Washington, DC. IMS Annual Meeting at JSM2009

# International Calendar *continued*

## May 2010

**May 23–26:** Québec City, Canada. 2010  
SSC Annual Meeting. Local Arrangements:  
Thierry Duchesne (Université Laval)  
**w** [http://www.ssc.ca/main/meetings\\_e.html](http://www.ssc.ca/main/meetings_e.html)

## August 2010

 **August 1–5:** Vancouver, British  
Columbia, Canada. JSM2010.

 **August 9–13:** Gothenburg, Sweden.  
IMS Annual Meeting 2010.

**August 19–27:** Hyderabad, India.  
International Congress of Mathematicians  
2010. Program Committee Chair: Prof.  
Hendrik W. Lenstra, Leiden University  
**e** [hwlicm@math.leidenuniv.nl](mailto:hwlicm@math.leidenuniv.nl)

## July 2011

 **July 31 – August 4:** Miami Beach,  
Florida. IMS Annual Meeting at JSM2011.

## July 2012

 **July 29 – August 2:** San Diego,  
California. JSM2012.

## August 2014

 **August 3–7:** Boston, MA. JSM2014.

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## Kakuro corner

**How to play:** Place single digits (1 to 9 inclusive) in the white boxes in the grid. The row or column of digits which make up a sequence must add up to the black box to the left or at the top. Each digit in a sequence must be different. In the example below, the first row sequence is to make 8:



*No repeated digits in  
a sequence.*



*This row sequence  
doesn't add up to 8.*



*...this one does! (So does  
1,2,5 and 3,1,4 and so on)*

Solution 25 from last issue

13	16	20	10	15	9	
30	9	6	8	7	28	9
32	4	2	9	3	8	5
4	1	3	19	7	4	1
12	9	3	11	9	7	15
37	7	4	3	8	9	1
21	17	1	2	23	4	9
22	8	9	5	8	6	2
38	9	7	2	4	8	3
5	4	1	29	7	9	5

Puzzle 26

	4	35		14	16	22	14
9			30				
42			16				
	15			8			
6	7			23			
			12			18	12
31			15				
		9			17		
	21	14			14		
7				13			
			8				10
29							
29					6		

Puzzle by [www.yoogi.com](http://www.yoogi.com)