THE ISBA BULLETIN

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A MESSAGE FROM THE PRESIDENT

Peter Müller
ISBA President, 2010
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First some sad news. In August we lost two big Bayesians. Julian Besag passed away on August 6, and Arnold Zellner passed away on August 11. Arnold was one of the founding ISBA presidents and was instrumental to get *Bayesian Analysis* started. Obituaries on this issue of the Bulletin and on our homepage acknowledge Julian and Arnold's pathbreaking contributions and their impact on the lives of many people in our research community. They will be missed dearly!

ISBA Elections 2010. Please check out the election statements of the candidates for the upcoming ISBA elections. We have an amazing slate of candidates. Thanks to the nominating committee, Mike West (chair), Renato Martins Assuncão, Jennifer Hill, Beatrix Jones, Jaeyong Lee, Yasuhiro Omori and Gareth Robert!

Sections. ISBA now has a *Objective Bayesian Section* (ISBA/OB). The new section was enthusiastically approved by the board. The section officers are Jim Berger (chair), Dongchu Sun (program chair), Jaeyong Lee (secretary) and Brunero Liseo (treasurer). Thanks to the founding members for taking the initiative to launch this new section. The long running series of biennial O'Bayes workshops is one of the most exciting regular Bayesian meetings. It was embarrassing that this happened without ISBA. Thanks to the founding members of the new section to bring this active area of Bayesian research into ISBA. We welcome the new section and invite members to join by simply checking a box in the annual membership renewal (there will be special provisions for members who hold multi-year memberships).

The *Bayesian Nonparametrics Section* (ISBA/BNP) is already up and running, and planning the 2011 BNP workshop. Please see the News from the World section in this Bulletin and our homepage (select "business" and "meetings").

ISBA/SBSS Educational Initiative. Jointly with ASA/SBSS (American Statistical Association, Section on Bayesian Statistical Science) we launched a new joint educational initiative. The initiative formalized a long standing history of collaboration of ISBA and ASA/SBSS in related matters... *Continued on page 2.*

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We hope to eventually jointly sponsor short courses and other activities in keeping with our shared mission of promoting Bayesian analysis. We would welcome any other interested professional societies, including in particular other national societies to join the initiative. Marina Vannucci (SBSS) and Peter Hoff (ISBA) have kindly agreed to serve as representatives of the two societies to coordinate any upcoming activities.

Savage Prize and Mitchell Prize Nominations: One of the most visible ISBA initiatives is the **Savage Prize**, awareded every year for the best Bayesian dissertations. Please consider nominating outstanding recent Ph.D. theses! Any ISBA member can submit nominations. The perhaps biggest award is the invitation of all finalists to present their work in a super prominent session at the upcoming JSM meeting. The **Mitchell Prize** is awarded for outstanding applied Bayesian papers. Please consider nominating eligible papers that you enjoyed reading! Please see the note elsewhere in this Bulletin and our homepage `www.bayesian.org` (click Prizes") for details.▲

A MESSAGE FROM THE EDITOR

Manuel Mendoza
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During the last quarter we all have witnessed how the Bayesian Universe has continued its expansion. Our regular activities have been growing; new initiatives were announced and the future appears full of exciting challenges. It must recognized however, that some sad news have also arrived with the end of the summer.

As our President has mentioned above, Prof. Arnold Zellner passed away on August 10. Four days before, on August 6, Prof. Julian Besag also passed away. This issue includes a note on each one of these distinguished colleagues. We are deeply thankful to Prof. Siddharta Chib, Prof. John Geweke and Prof. Peter Green for these contributions. Other regretable losses are those of the always inspiring Prof. David Blackwell who passed away on July 8 and Prof. John Nelder who passed away on August 7. An obituary for Prof. Blackwell, by Robert Sanders, can be found at the UC Berkeley website. As for Prof. Nelder, a beautiful obituary by Prof. David Hand can be found at Imperial College's website

In any case, life continues and this issue includes most of the usual sections. I might call your attention to the information regarding the forthcoming ISBA elections. We have an impressive list of nominees and this material will help you to make your decision.

As always, I want to encourage all members of ISBA to contribute to the Bulletin with their suggestions, manuscripts and announcements. Please do not hesitate to contact me or any member of the Editorial Board.▲

BAYESIAN ANALYSIS - A MESSAGE FROM THE EDITOR

UPDATE FROM BA

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The September issue of Bayesian Analysis features a discussion paper on the practical Bayesian analysis of large datasets using mixture models, by Ioanna Manolopoulou, Cliburn Chan, and Mike West. Discussions by Fabio Rigat and Nick Whiteley provide some additional ideas and directions for thought. The remainder of the issue contains six other fine articles in areas of Bayesian computation and modeling, and an application to hydrology.▲

2010 ISBA ELECTION

Candidate Statements

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The 2010 ISBA nominations committee, chaired by past-President Mike West, has assembled an outstanding slate of candidates for President Elect, Treasurer, and four open Board of Director positions. Biographical information and candidate statements appear below, as well as on the ISBA website. ISBA will open electronic voting via the ISBA website beginning October 15th, with elections closing November 15th. All current members will be emailed instructions for voting prior to the election.

President 2012 (President Elect 2011, Past President 2013)

Fabrizio Ruggeri (CNR-IMATI Milan, Italy)

I would like to thank the Nominations Committee for inviting me to run, for the third time, for ISBA President. I am very flattered since three independent committees, whose members are deeply involved in ISBA activities, thought of me for such a prestigious job. Now I have *just* to convince ISBA members I am fit for it...

I believe ISBA has the mission to promote sound statistical methods and applications, worldwide and across disciplines, in the society, in teaching and in the research. Here are my plans to contribute to it, if elected, and some information on me.

I am an ISBA member since the first meeting in San Francisco in 1993 and I served ISBA in many ways: Board member, member of three Nominations Committee, four times member of the Savage Prize Selection Committee (and chair of the latest one), once member of the De Groot Prize Selection Committee, Chair of ISBA2004 Scientific Committee, founding (and current) Editor of Bayesian Analysis and its first Production Editor, Editor of ISBA Bulletin (and responsible for its transformation into its current format), one of the main proposers of the Pilar Iglesias Fund, Chair of the recent Editors Search Committee and Chair of ISBA endorsed workshops (on robustness, the first on nonparametrics and the BISP series on stochastic processes).

The President-Elect will be in charge of ISBA2012 in Japan: it is a great opportunity to expand ISBA activities well beyond its stronghold (North America, Western Europe and Australia). Our focus should be in promoting local chapters, regional workshops, cooperation with local statistical societies, courses by leading Bayesians, joint research programmes (e.g. looking for opportunities offered by the European Union) in Asia, Africa, Eastern Europe and Central and South America (without forgetting our stronghold...). Those activities should have continuity in time, being, possibly, coordinated by an ad hoc committee. Although deeply rooted in my homelands (Italy and European Union), where I am Research Director at the Italian National Research Council and Faculty in a Ph.D. programme in Pavia, I am a typical example of globalisation: I got my M.Sc. at Carnegie Mellon and my Ph.D. at Duke in the USA, I am Adjunct Faculty at New York University and, this fall, Visiting Faculty at George Washington University, besides being Faculty in a Ph.D. programme in Algeria and having given many courses in Italy, Spain, Brazil and Chile (even in Spanish). I am also very honoured of being an Advisory Editor of the Chilean Journal of Statistics and having strong connection with Latin America, besides cooperation in Eastern Europe and a recent one with Taiwan. Finally, I am Fellow of the American Statistical Association.

ISBA should continue its policy towards a greater cooperation with scientists in other fields, through contacts with their organisations, interdisciplinary workshops, invited papers in Bayesian Analysis, groups within ISBA, plenary talks and courses. It is not only an issue of outreach but also of continuity of the cooperation over time. I am devoting many efforts in spreading sound Bayesian methods especially among engineers and, more recently, biologists, epidemiologists and MDs. My research interests go from robustness, nonparametrics, wavelets and stochastic processes to reliability, project management, and, more recently, biostatistics and biology. I have been ENBIS (European Industrial Statisti-

cians) President, I was Editor-in-Chief of Encyclopedia of Statistics in Quality and Reliability (a major reference in the field) and I am Editor-in-Chief of Applied Stochastic Models in Business and Industry. I edited two books on Bayesian Robustness and two forthcoming books are on Bayesian Inference in Stochastic Processes (as co-author) and Statistics in Healthcare Practice (as co-editor).

Young researchers are a top priority for ISBA. We should think of some form of active participation in ISBA activities, besides offering courses, awards and travel grants (and expanding them as much as possible). We should discuss and decide about forms of deeper involvement by young researchers: an autonomous group, participation in some ISBA committees, organisation of some events devoted to themselves? As Editor of the ISBA Bulletin, I created the Students' Corner, run by students to promote their fellows' works. As Chair of ISBA2004 Scientific Committee, I worked hard with Pilar Iglesias to bring many young people to Chile and, later, I was one of the promoters of the fund named after her to support travel grants for students.

Last but not least, ISBA has its well established activities, including worldwide conferences, chapters and groups, Bayesian Analysis, Bulletin, and awards. They have been run very well so far and they strongly depend on ISBA finances, so wealthy because of a wise administration in the past. Continuation and improvement of such successful scientific and financial management are the primary goals of the Board and, first of all, of the President. New ideas are very welcome and I will invite and strongly rely on inputs from members, as I did when I reshaped the ISBA Newsletter or I chaired the Editors Search Committee.

Xiao-Li Meng (Harvard U, USA)

By 2012, ISBA will be leaving its teenage years behind. By any measure, ISBA has had a fabulous teen experience. Just take a look at the society's website, or attend any of its conferences. We do so well on so many fronts, and with so much fun and energy, just like teenagers. The use of "teenagers" is more than a metaphor here, because the future of ISBA, say in its second 20 years, depends literally on those who are teenagers now. Yet this is a group that we have essentially never reached out to — undergraduate-level introductory courses from a Bayesian perspective are the exception rather than the rule. It is also rare to find sessions or even talks on teaching Bayesian statistics at the undergraduate level, either at teaching conferences (e.g., out of over 110 sessions at the recent 8th International Conference on Teaching Statistics, I found only one session on teaching Bayesian statistics) or at Bayesian conferences (e.g., I do not recall any such talks occurring at the ISBA meetings I have attended).

If we believe that Bayesian thinking is the key for scientific quantitative reasoning, and that the 21st century belongs to Bayesian statistics, why are we then not teaching it first, literally, that is, when future scientists, policy makers, educators, etc. are first exposed to serious quantitative reasoning? Two common responses have been (1) there is already too much material for introductory level statistics courses and students are already too busy, and (2) Bayesian statistics is very difficult to teach at the introductory level.

For (1), I would argue that it is exactly because the introductory courses are filled with messages that are inconsistent with Bayesian reasoning that we, at the very least, need to provide students with an opportunity to be exposed to Bayesian thinking before their minds get "too busy" with materials we think they should learn less or not at all. For those of us who enjoy occasional DIY (do it yourself), we understand well how building from scratch often takes significantly less effort than trying to remodel an "old house."

As for (2), some recent experiences have taught me that it is entirely possible to teach Bayesian thinking even before formally introducing probability. For the past two summers, I have taught "Vital Statistics for Medical and Life Sciences", a study-abroad course that my "happy team" (a group of Harvard graduate students and I) has put together. The very first lecture starts with the question of what is the chance of a woman with positive screening test result actually having breast cancer, given the knowledge of the breast cancer prevalence and the specificity and sensitivity of the screening test. Everything was described in terms of simple percentages and illustrated with tree diagrams and PowerPoint animations. All students are undergraduates, and the vast majority of them have no prior exposure to statistics or probability. Yet by the end of the first lecture, they have learned the

thinking process of going from prior to posterior, as well as the power of such reasoning, especially because of the unexpectedness of the answer. My best "teaching moment" was when a student came to me after the class and said "This is just weird," referring to the fact that the answer seemed to be substantially too small compared to his "prior intuition", yet he had to agree that it is the right answer because of the "evidence" presented in the lecture, especially in multiple ways. What a great demonstration of Bayesian reasoning at work!

One of the wittiest puns of Morris DeGroot is "Bayesians know where the bar is" (if you don't get the pun, email Ed George). We need many more teenagers who know the right bar before they reach legal drinking age. Certainly, there is no society more fitting than ISBA to lead the collective and organized effort internationally in providing Bayesian statistics education at the undergraduate level. Efforts here range from organizing pedagogically passionate and experienced scholars to brainstorm and design effective teaching and learning strategies, to collecting information on the problems and challenges faced at different institutions across different countries, and to providing a variety of sample curricula, teaching materials, and teacher training tailored correspondingly. If I am given the honor to serve as ISBA President, I will give the highest priority to fostering such endeavors and to integrating them into ISBA's on-going effort in building and enhancing the future force of the Bayesian army to meet the ever-increasing need for principled quantitative reasoning in every walk of life.

Treasurer 2011-2013

Hedibert Lopes (U of Chicago, USA)

Honor was (and still is) my feeling when I browsing through the list of past ISBA Treasurers. Bayesian statistics has done many things for me and I am privileged to be nominated to one more of ISBA's offices. I have been a member of the Savage Thesis Award for a couple of years, ISBA bulletin editor for another few years and currently serve as board member, which included the chair of the ad-hoc membership committee for one year. I have also helped the foundation of ISBRA, the 10-year old Brazilian Chapter of ISBA.

I have no prior experience as Treasurer, but I certainly have highly qualified friends and colleagues here at Chicago Booth. One such friend (and, unfortunately, former colleague) is Carlos Carvalho. I am also counting on my friends and former Treasurers, whose expertise and experience I will constantly and humbly seek.

I am currently Associate Professor of Econometrics and Statistics at the University of Chicago Booth School of Business. My research interests concentrate on Bayesian modeling and computation, with particular emphasis on longitudinal, spatial and dynamic factor analysis, time-varying covariance models, dynamic models, Markov chain Monte Carlo and sequential Monte Carlo methods. I published the book on MCMC for Bayesian inference with Dani Gamerman (Chapman & Hall/CRC Press) and will publish in 2012 a book on Bayesian Econometrics with Robert McCulloch (Wiley). My research papers have been published in Statistical Science, Biometrics, Statistica Sinica, Journal of Time Series Analysis, Statistics and Computing, Journal of Statistical Planning and Inference, Computational Statistics and Data Analysis, to name just a few. I advise or advised around 20 MSc and PhD students since 2000. I am currently Associate Editor for Bayesian Analysis. Additional information can be found on my website at http://faculty.chicagobooth.edu/hedibert.lopes.

Mike Daniels (U of Florida, USA) I am very happy to be nominated for the Treasurer of ISBA. I have served ISBA in a variety of ways over the years: Member of the Savage Thesis Award Committee in 2007-2008 and 2008-2009 and Member of the Mitchell Prize Committee in 2009-2010. I also served as the program chair for the Section on Bayesian Statistical Science of the ASA in 2009.

I also have relevant experience to serve as Treasurer given my holding the same position in ENAR (of IBS) for 2010-2011 and in dealing with financial issues in my capacity as the chair of the Department of Statistics at the University of Florida since 2008. I will use my experience to help keep ISBA in the best financial situation possible.

I am currently Professor and Chair in the Department of Statistics at the University of Florida. My research interests focus on Bayesian methodology for longitudinal data and missing data and methodology for estimating dependence. I recently published a book (w/ Joe Hogan) on

Bayesian methodology for missing data in longitudinal studies (title: Missing Data in Longitudinal Studies: Strategies for Bayesian Modeling and Sensitivity Analysis, with Chapman & Hall/CRC Press). My research papers have been published in JASA, Biometrika, Biometrics, Biostatistics, JCGS, JMVA, among other venues. I am an Associate Editor for JASA, Biometrics, and Statistics & Probability Letters. I am currently working on collaborative projects in the areas of aging, genomics, infectious diseases (malaria and flu), weight management, and muscular dystrophy. For more information on me, please visit my website, http://www.stat.ufl.edu/ mdaniels.

Board of Directors 2011-2013 (4 openings, 8 candidates listed randomly)

Dongchu Sun (U Missouri, USA)

Candidate Statement Pending, please see the ISBA website for up-to-date information.

Ming-Hui Chen (U Connecticut, USA)

I am delighted to be a candidate for ISBA's board of directors. I am Professor and Director of the Statistical Consulting Services in the Department of Statistics at University of Connecticut in Storrs, Connecticut, USA. Over last 20 years, I have been working on methodological and application aspects of Bayesian statistics, including the Bayesian analysis of categorical data, survival data, missing data, and genomic data, the development of Monte Carlo methods for Bayesian computations, and the Bayesian design of clinical trials. I have taught short courses on Bayesian computations, Bayesian Survival analysis, and missing data analysis at various meetings and universities including JSM's, ENAR's, WNAR, and ICSA symposiums. I have served as an Associate Editor of Bayesian Analysis since 2004. I was the program chair of the Section on Bayesian Statistical Sciences (SBSS) in 2005 and the Publications Officer of SBSS for 2008-2009. I also served on the Board of Directors of the International Chinese Statistical Association (ICSA) (2004-2006). Currently, I am the Executive Director of ICSA (2007-2010). In 2009, ISBA and ICSA signed the Memorandum of Understanding on the co-sponsorship of future ISBA or ICSA meetings. In March 2010, I also served as the Associate Chair of the executive committee for the conference titled "Frontiers of Statistical Decision Making and Bayesian Analysis". If elected, my working experience being officer of SBSS and ICSA would help increase the membership in the society and promote the collaboration between ISBA and other societies, and my research experience as a Bayesian statistician would help promote the value and use of Bayesian statistics in interdisciplinary research.

Chris Holmes (U Oxford, UK)

I am professor of Biostatistics at the University of Oxford. My research interests surround applications and methods development for Bayesian analysis of high-dimensional data sets arising in genomic and genetic epidemiology. This has lead me to investigate Bayesian nonparametric methods, including a recent book with Hjort, Mueller and Walker, as well as recent work in Bayesian computation on graphics cards. I've acted as Associate Editor for The Annals of Statistics and The Annals of Applied Statistics. I have also served on the last two Savage Award committees. I have organized workshops and invited sessions on Bayesian statistics and their applications in genetics. I have published papers in the mainstream statistics journals and also in machine learning, bioinformatics and genetic epidemiology. I would be honoured to serve on the ISBA board.

Judith Rousseau (U Paris Dauphine, France)

I am professor at Université Paris Dauphine and at the ENSAE (Paris, France). My research interests include interractions between Bayesian and frequentist methods and understanding the impact of using a prior with a more recent focus on nonparametric models; they include also model choice and tests and in a more applied perspective prior elicitation. I am currently associate editor of the Australian and New-Zealand Journal of Statistics and of the Annals of Statistics. I have also been a member of the prize committee for the last two years and last year I have acted as Chair of the prize committee. I have been a member of the scientific committee for different ISBA meetings and have organized Bayesian sessions at meetings. I have published papers in mainstream statistical journals and in computational journals. I would be honoured to serve on the ISBA board.

Hajime Wago (Kyoto Sangyo U, Japan)

I am delighted to be a candidate for ISBA's

board of directors. I am currently Professor of Econometrics and Statistics at Kyoto Sangyo University in Kyoto, Japan. Over the past two decades and more I have been working on various aspects of Bayesian analysis, including high frequency financial data and spatial criminal and business data, computational aspects such as MCMC methods, particle filtering and simulation based inference, modelling for the state space time series analysis, and macroeconometric modelling (Dynamic Stochastic General Equilibrium (DSGE) Model). I have organized 15 conferences and workshops on theory and application of Bayesian statistics. Recently, I have also published four MCMC related Bayesian books in Japanese to promote Bayesian ideas on useful empirical analysis.

As a new era of globalization intensifies, Japan statistical society will attempt to expand its activities across national boundaries and to consolidate friendship and partnership with statisticians in other Asian societies.

Regarding my contribution for ISBA, I served a member of the founding board (1992-94) and I remember the intense discussion on whether having our constitution and publishing the journal of ISBA.

Bayesian method is getting more popular in Japan and Asia, so it is the best time for us to hold the next ISBA2012 meeting in Kyoto. I am hosting it as the chair of Japanese organizing committee. I am confident the ISBA meetings have given and will give a stimulus occasion for local young researchers and students.

If elected, my experience would help increase the membership in the Society, and help promote the value of Bayesian thinking in statistics and the applied areas.

Antonietta Mira (U Insubria, Italy)

I am professor of statistics both at the U. of Insubria (Italy, where the Bayesian approach is well established) and at the U. of Lugano (Switzerland, where there are very few universities that have Bayesian courses at graduate or undergraduate level: I am helping spread the voice around). I have been on the scientific committee of the joint MCMSki I, II and III (co-chair) and I am co-editor of Bayesian Analysis. And I take this opportunity to invite you to Salt Lake City in January 2011 and to submit your papers to BA!

Besides having a vision of where Bayesian statistics should go (which I'm sure is shared by almost everybody who is on this list) I would like to share with you my thoughts on how to help move in the right directions. I want to be very concrete so here is a TODO list (I was tempted to write a WISH list but, in name of concreteness...)

1. know thyself (gnôthi seautón, nosce te ipsum): use Bayesian statistics to make inference and prediction on who we are as a community, what is it that we do well and less well, and what we should do to improve. To be concrete: have a thematic competition where people are encouraged to use their favorite new modeling and inferential tool to analyze "Bayesian data", which is not data that is coherent and consistent but it is data that Bayesian have generated (here are a few examples: feed to your favorite text classifier the abstract books of Valencia meetings, study the time-space model of location of Bayesian conferences, study the time series of "Bayesian papers" in statistical journals ...)
2. divide and conquer (divide et impera): which are the areas where we are good and the ones were we can improve? Divide: have small meetings like MCMSki, Bayesian nonparametrics, Prior elicitation, Clinical trials, Genomic and proteomic ... Conquer: spread the voice around! Provide financial support for invited talk at thematic "non-Bayesian" conferences (JSM does not count, but the annual meeting of seismic forecast: an area where (Bayesian) statisticians have little to say, would be the perfect example)
3. do 'model criticism' about ISBA activities: these days we get a "costumer satisfaction" questionaire for pretty much everything we do, what about doing one on ourselves? After all statisticians are "our costumers" and we offer them conferences, journals, bulletins, websites ... for all these activities we could have an on-line survey to get a feeling of how we are doing and get inputs on what and how we could improve (these surveys would provide genuine "Bayesian data" to be analyzed along the spirit of point 1)

4. make sure that when you google ISBA (especially in some languages like italian) the first entry is not the Illinois State Bar Association!

In compiling the above TODO list I have tried to be 'nonparametric' in the sense of thinking about ISBA taking on new things, not bound by hard constraints: this is my vision on where Bayesian statistics should go and the spirit that should inform our decisions.

Hélène Massam (York U, Canada)

I am a Full Professor in the Department of Mathematics and Statistics at York University in Toronto, Canada. My research area is in graphical models and Bayesian inference. My recent research has focused on the development of prior distributions for the covariance parameter in Gaussian models and for loglinear parameters in hierarchical loglinear models as well as on the geometry of discrete hierarchical models. My works tends to be of a theoretical nature but always with a view to improve methods widely used in applications. I have published papers in the Annals of Statistics, Biometrika, Bernoulli and other mainstream journals. I am an Associate Editor of Bayesian Analysis. I have been a member of the Statistics NSERC Selection Committee, the IMS Fellows Selection Committee and the IMS President Selection Committee. I am also a Fellow of the IMS.

Rosangela Loschi (UF Minas Gerais, Brazil)

I am professor and head of the Department of Statistics at Universidade Federal de Minas Gerais, Brazil. I received my Ph. D. in Statistics in 1998 from the Universidade de São Paulo, Brazil. I am currently AE for the Chilean Journal of Statistics. My research interests include, among others, clusters and change points identification, survival analysis, flexible models using extended classes of asymmetric distributions. I have published papers in Statistical journals, such as, J. of Multivariate Analysis, Computational Statistics and Data Analysis, Lifetime Data Analysis, Biometrical J., Test, and correlated areas as Computers and Operations Research and European J. Operation Research. I have been involved with the foundation of ISBRA - the Brazilian Chapter of ISBA - in 2000, and served as ISBRA executive secretary twice (2000-2002, 2006-2008). I was one of the organizers of the I Latin American Meeting on Bayesian Statistics in 2002, which was considered as an ISBA Regional meeting, of three Brazilian Meetings on Bayesian Statistics and some other local meetings. I also served on two ISBA nominate committees, the last one in 2009. It is a great honor to be nominated as a candidate for the ISBA office. If elected, I hope, I can help to promote ISBA in South America and increase the number of membership in our society. ▲

SAVAGE AWARD AND MITCHELL PRIZE 2010

Call for Nominations

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The **Savage Award**, named in honor of Leonard J. "Jimmie" Savage, is bestowed each year to two outstanding Bayesian Ph.D. theses. The Savage Prize is one of our most visible activities. The prize is jointly administered by ISBA and the ASA Section on Bayesian Statistical Science (SBSS).

Deadline is **Friday, Oct 29**. Advisors, department chairs or any ISBA or SBSS member may nominate a dissertation for the prize. Please see http://bayesian.org/awards/Savage.html for details.

The **Mitchell Prize** is named after Toby J. Mitchell and was established by his friends and colleagues following his death from leukemia in 1993. The **Mitchell Prize** is awarded in recognition of an outstanding paper that describes how a Bayesian analysis has solved an important applied problem. The Prize is jointly sponsored by the Section on Bayesian Statistical Science (SBSS) of the ASA, the International Society for Bayesian Analysis (ISBA), and the Mitchell Prize Founders' Committee.

Deadline is **Dec 31, 2010**. A paper may be nominated by an author or any member of ISBA or SBSS. Please see http://bayesian.org/awards/MitchellPrize.html for submission details.

ARNOLD ZELLNER 1927-2010

OBITUARY

Siddhartha Chib & John Geweke
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Arnold Zellner, co-founder of ISBA and its first president, passed away at his home in Chicago on August 10, 2010 at the age of 83. One of the world's most prolific and influential econometricians, publishing more than 200 articles and 22 books and monographs, he made pioneering contributions to Bayesian statistics, the analysis of simultaneous equation models and time series analysis.

He was born on January 2, 1927 in Brooklyn, New York. He attended Harvard University on a scholarship, earning a Bachelors degree in Physics in 1949. Following two years of military service, he attended graduate school at the University of California, Berkeley, where he earned a Ph.D. in Economics in 1957.

Zellner held faculty appointments in the Department of Economics at the University of Washington (1955-1960) and the University of Wisconsin (1961-1966). In 1966 he took up the position of HGB Alexander Professor in the University of Chicago Business School, where he remained until his retirement in 1996.

It was at the University of Washington that he developed the seemingly unrelated regressions model, a model that was the basis for numerous applications and subsequent developments in the analysis of multivariate outcomes. His contributions to Bayesian econometrics and statistics, which would be the theme of his research for the balance of his academic career, began with a paper published in 1964 with his University of Wisconsin colleague George Tiao.

Zellner's landmark book, An Introduction to Bayesian Inference in Econometrics, was published by John Wiley and Sons in 1971. This book pioneered the field of Bayesian econometrics. Published at a time when few econometricians utilized Bayesian statistics, it demonstrated how problems of concern to economists, and researchers more broadly, could be tackled from a Bayesian perspective. The book had a large impact on the subsequent growth of the field.

Zellner's hallmark energy, enthusiasm and organizational skills are reflected most significant-

ly in two organizations that he founded. The ongoing Seminar on Bayesian Inference in Econometrics and Statistics (SBIES), launched in 1971, was a key forum for many developments in Bayesian econometrics and statistics. Following up on his belief that Bayesian methods were useful in all scientific endeavors, Arnold helped to found ISBA in 1991. He was its first president, a privilege of which he remembered fondly.

Zellner was instrumental in the founding of the Journal of Econometrics in the early 1970's. Due in no small part to his vigorous leadership, serving as editor until his passing, the Journal is now a major publication in the field. Zellner also made outstanding contributions to the American Statistical Association, where he inaugurated the Journal of Business and Economic Statistics in 1983. He was Chair of the Business and Economics Section in 1982 and went on to be elected the Association President in 1991. The annual Zellner Thesis Award in Business and Economic Statistics recognizes both these contributions and his influence on scholarship in econometrics. He was an elected fellow of the International Statistical Institute as well as the American Statistical Association.

Arnold leaves a legacy of warmth, creativity and enthusiasm for the Bayesian profession and life in general that will long live in the minds of those who knew him. He will be greatly missed.▲

JULIAN BESAG 1945-2010

Photo courtesy of Larissa Stanberry.

OBITUARY

Peter Green
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Julian Besag died on 6 August 2010, in hospital in Bristol, UK, following surgery after some years of ill-health. His contributions to the discipline of statistics are profound. While he did not describe himself as a card-carrying Bayesian, his originality and creativity in areas that became central to modern Bayesian modelling and computation have been, and continue to be, of far-reaching consequence: Julian was using

"full conditionals" in modelling and computation from the mid-70s!

Julian's research work had authority and great originality. He seldom wrote the last word on a subject, but was there at the start of many of the key developments in modern stochastic modelling. He did not write a great deal, but his work was very deliberate, and densely and painstakingly written; he had very high standards over what he put his name to.

The general area where he made the biggest impact is the conditional modelling of spatial systems. Together with the parallel, independent, work on interaction in contingency tables by Darroch, Lauritzen and Speed, Julian Besag's work in the 70s and early 80s laid the foundations for the entire contemporary tradition of highly structured stochastic systems. This strategy for building complex global models through local specifications guaranteed to be self-consistent has made a huge impact on stochastic modeling in many areas of science, medicine and technology, and stimulated important work on statistical inference for such systems, and on their probabilistic theory.

What began in his early work as a quest for flexible and mathematically-sound models for ecological phenomena, resulting in the notion of modelling spatial systems as Markov random fields led on directly to the idea of MRFs as a generic model for interacting systems, with Julian himself responsible for adapting the models and the methodology to agricultural field trials, archaeological problems, image analysis and disease mapping, and to hierarchical versions of such models under the Bayesian paradigm.

The second major plank to his research was innovatory work on inferential methods for spatial systems, and their computational implementation. Especially noteworthy are the notion of pseudolikelihood in interacting systems, as a computationally tractable alternative to the true likelihood, the 'iterated conditional modes' algorithm, important contributions to the algebra of interacting systems and his role as one of the very early proponents of Markov chain Monte Carlo methods for fitting statistical models. In particular, he was well ahead of his time in recognising the duality between the conditional specification of stochastic models and the construction of algorithms for such models using these conditional specifications.

Julian was an inspiring and challenging mentor to younger researchers; his career shows a string of papers written jointly with more junior people, most of whom have since developed into independent researchers with substantial reputations of their own.

Julian was born in Loughborough, UK, on 26 March 1945, and after his mother died brought up by German-speaking grandparents. He began studying engineering at Cambridge but moved to the University of Birmingham to study statistics, obtaining his BSc in 1968. He then spent a year as a research assistant to Maurice Bartlett in Oxford before obtaining a lectureship at Liverpool. He moved to Durham in 1975, where he became a professor in 1986. He was a visiting professor at the University of Washington in Seattle during 1989-90 and, after a year back in Newcastle, returned to Seattle long-term. He officially retired from Seattle in 2007 but remained an emeritus professor. He returned to the UK, and during 2007-09 he held a chair at the University of Bath. At his death in 2010 he was a visiting professor at both Bath and Bristol.

Outside his working life, Julian's passions were for mountaineering (including a 14000' peak in the Alps scaled on his honeymoon with Valerie), hockey (while he was at Liverpool he had a trial for the Welsh national team), running, and, after moving to Seattle, sailing. He lived on the water in Seattle and owned two ocean-going sailboats. His personal relationships - emotional, social and professional - were often stormy and very demanding for all concerned, but he was an unforgettable character, who will be much missed.▲

ANNOTATED BIBLIOGRAPHY

COMPUTATIONAL INFERENCE FOR INVERSE PROBLEMS

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Inverse problems occur when indirect observations d are made of a physical system x, typically by scattering energy of some kind, and we want to infer properties of the unknown true system. That includes nearly all physical imaging systems, with well-known examples being x-ray imaging, CAT scanning, and remote sensing.

The forward map F that models the deterministic mapping $\mathrm{x} \mapsto \mathrm{d}$ is the subject of theoretical physics, though often requires further physical modelling of instrumentation and data modelling as practiced in statistics. Computer implementation of these models is usually the realm of specialists in computational methods, with efficient implementation being essential when comprehensive Bayesian inference is planned. A suitable probabilistic model for this modelling and observation process is then

$$\mathrm{d} = F(\mathrm{x}) + b(\mathrm{x}) + \epsilon.$$

Here, b and ϵ denote the model bias and the measurement noise, respectively. The model bias may arise from various sources: numerical error in computer implementation of the forward model, spatial discretization of the unknown parameters, inappropriate assumptions in the mathematical model, etc.

The system can often be represented in terms of spatially distributed parameters $\mathbf{x}$ (for example, coefficients in a partial differential equation modelling energy propagation), so representations and prior models are usefully drawn from spatial statistics.

- Hurn, M. A., Husby, O., & Rue, H. (2003) "Advances in Bayesian Image Analysis", *Highly Structured Stochastic Systems*, eds Green, P. J., Hjort, N., & Richardson. S, Oxford University Press, 302-322.

  A great overview of modern Bayesian image modelling and analysis. The notions of low-, mid-, and high-level models are set out, as well as an example in ultrasound imaging. As the authors note, the issue of physical modelling for the likelihood is not considered.

Many statistical papers on inverse problems highlight the high computational cost required in evaluating the forward map, and hence likelihood. However, understanding the structure of the forward map is critical for efficient computation. Specifically, the forward map necessarily has an unbounded range of sensitivities, hence posterior distributions are supported on a relatively low-dimensional manifold with correlation coefficients that equal 1 to within machine precision. These properties give the extreme sensitivity that inverse problems display to both measurement and modelling errors, and make believable inference from measured data a challenging task.

- Fox, C., Tan, S., & Nicholls, G. K. (1997) *Inverse Problems*, lecture notes for ELEC 404, available at http://elec.otago.ac.nz/w/images/1/19/ELEC404_Inverse_Problems.pdf

  This graduate course has been taken up by engineering groups around the world, as an accessible introduction to inverse problems. These notes cover the basic structure and difficulties arising in inverse problems, regularization methods, simple probability models, and sample-based inference.

In common with most of Bayesian statistics, computational inference for inverse problems is a rapidly developing research field, with remarkable work appearing each year. We have explicitly excluded many exciting advances that we can forecast, and instead focus on the best technology available today for performing inference in practical inverse problems. The basic structure should be familiar to all; posterior inference implemented by random walk Metropolis-Hastings (MH). However, sophisticated advances in treating model error and utilizing model reduction have vastly improved the efficiency and quality of inference.

Model bias

A major advance in recent years has been the development of frameworks for treating bias in complex computer models. These Gaussian process (GP) based approaches allow estimation of model bias, and also the possibility of fast inference via GP surrogates to the forward map. There are difficulties in high dimensional settings, since then building GP models is expensive. In the context of inverse problems, these methods have proved a practical route to improving on biased and overly confident estimation that results from artificially simplified forward maps.

- Kennedy, M. C., & O'Hagan, A. (2001) "Bayesian calibration of computer models" (with discussion), *Journal of the Royal Statistical Society: Series B*, **63**, 425–464.

  In this milestone paper, the model parameters x are considered as a combination of unknown calibration parameters and controllable inputs. By collecting field observations at various controllable inputs, and pre-evaluating the forward model F at a collection of model parameters, Gaussian process (GP) surrogates to F are constructed, with the bias b represented by a separate GP model. Thus, the posterior distribution is a joint Gaussian distribution conditioned on field observations and pre-evaluated model outputs. Estimating model parameters and hyperparameters of the GP models facilitates predictions and analysis of uncertainty in the forward model.

- Bayarri, M. J., Berger, J. O., Cafeo, J., Garcia-Donato, G., Liu, F., Palomo, J., Parthasarathy, R., Paulo, R., Sacks, J., & Walsh, D. (2007) "Computer Model Validation with Functional Output", *Annals of Statistics*, **35(5)**, 1874–1906.

  The framework of Kennedy and O'Hagan (2001) is extended to analyze vehicle suspension systems where the model output is a time series. Wavelet decomposition is used to decompose the model output, with model output, bias function and field observations transformed into the decomposed basis. Hence, the framework of Kennedy and O'Hagan (2001) can be expressed independently on each basis.

- Higdon, D., Gattiker, J., Williams, B., & Rightley, M. (2008) "Computer Model Calibration using High Dimensional Output", *Journal of the American Statistical Association*, **103(482)**, 570–583.

  Implosion of steel cylinders are analyzed. To deal with the functional model output, singular value decomposition is used to construct the basis vector for the model outputs. Then, a different set of basis vector are chosen for the bias function, based on what is known about actual physical process and potential deficiencies in the simulator.

- Higdon, D., Lee, H., & Holloman, C. (2003) "Markov chain Monte Carlo-based approaches for inference in computationally intensive inverse problems", *Bayesian Statistics 7*, eds Bernardo, J. M., Bayarri, M. J., Berger, J. O., Dawid, A. P., Heckerman, D., Smith, A. F. M., & West, M., Oxford University Press, 181–197.

  A Metropolis couple scheme is implemented to analyze the permeabilities of a subsurface flow system. Since measurements can only be observed for a single set of controllable inputs, the framework of Kennedy and O'Hagan (2001) is not applicable. Hence the nature and size of the model bias can only be judged by knowledge about the physical process.

We note that in practice the forward model is often 'corrected' after examination of residual structure, also using modelling judgements.

Proposals and adaptation

- Nicholls, G. K., & Fox, C. (1998) "Prior modelling and posterior sampling in impedance imaging", *Bayesian Inference for Inverse Problems, Proc. SPIE 3459*, 116–127.

  Several proposal distributions built from multiple 'moves' are applied to sampling in electrical impedance tomography, under various prior models. Demonstrates the computational gain available by exploiting the structure of the inverse problem when designing proposal distributions.

- Green, P. J., & Mira, A. (2001) "Delayed rejection in reversible jump Metropolis-Hastings", *Biometrika*, **88**, 1035–1053.

  The reversible jump formalism is presented

in a form that we use to evaluate the Hastings' ratio for subspace moves. The delayed rejection algorithm is also discussed.

Tuning of proposals is often required to give statistically efficient implementations, though can be very time consuming for the high dimensional representations that are typical in inverse problems. The advent of adaptive methods gave a practical way to automate that tuning process.

- Haario, H., Saksman, E., & Tamminen, J. (2001) "An adaptive Metropolis algorithm", *Bernoulli*, **7**, 223–242.

  This adaptive Metropolis algorithm uses the multivariate Gaussian $N(0, \frac{2.83^2}{d}\Sigma)$ as proposal, where d is dimensionality of the parameter space, with the covariance matrix Σ estimated from past samples of the chain. Ergodicity is established by an argument akin to lace work.

- Haario, H., Laine, M., Mira, A., & Saksman, E. (2006) "DRAM: Efficient adaptive MCMC", *Statistics and Computing*, **16**, 339–354.

  Combines the delayed rejection and adaptive Metropolis algorithms.

- Roberts, G. O., & Rosenthal, J. S. (2007) "Coupling and Ergodicity of Adaptive MCMC", *Journal of Applied Probability*, **44**, 458–475.

  Establishes simplified regularity conditions that are sufficient to ensure ergodicity of adaptive MCMC algorithms, namely, the diminishing adaptation and bounded convergence conditions. Now, anybody can design a convergent adaptive MCMC.

- Roberts, G. O., & Rosenthal, J. S. (2009) "Examples of Adaptive MCMC", *Journal of Computational and Graphical Statistics*, **18(2)**, 349–367.

  Based on the above ergodicity conditions, several adaptive MCMC algorithms are designed including the adaptive Metropolis with Gibbs algorithm and the Regional adaptive Metropolis algorithm that tunes random walk proposals to match an 'optimal' acceptance rate. These two algorithms potentially can be applied in a high dimensional context.

- Higdon, D., Reese, C. S., Moulton, J. D., Vrugt, J. A., & Fox, C. (2009) "Posterior exploration for computationally intensive forward models", *Technical Report LA-UR 08-05905, Statistical Sciences Group, Los Alamos National Laboratory*, to appear in *The Handbook of Markov Chain Monte Carlo*, eds Meng, X.-L., Gelman, A., & Jones, G., CRC press.

  Several implementations of the MH are reviewed and tested on a synthetic 2D electrical impedance tomography problem. Interestingly, the multivariate Gaussian proposal used by the adaptive Metropolis algorithm gives poor mixing, while simple single-site update shows acceptable mixing.

The following two algorithms provide useful black-box sampling tools for low dimensional mid-level representations of fixed dimension.

- Ter Braak, C. J. F. (2006) "A Markov Chain Monte Carlo version of the genetic algorithm differential evolution: easy Bayesian computing for real parameter spaces", *Statistics and Computing*, **16**, 239–249.

  A population MCMC algorithm is designed by combining the genetic algorithm differential evolution and the random walk MH algorithm.

- Christen, J. A., & Fox, C. (2010) "A general purpose sampling algorithm for continuous distributions (the t-walk)", *Bayesian Analysis*, **5(2)**263–282.

  Two points in state space are maintained and used to design moves for the t-walk that is close to affine invariant.

Efficient MCMC

One major difficulty in MCMC sampling for inverse problems is the computing cost of each iteration in the MH. To make a fast inference, a reduced order model can be employed to mimic the behavior of the posterior distribution. As we already mentioned, GP models are possible candidates but limited by the dimensionality of the parameter space. Alternatively, we can use the knowledge of the physical modelling of the forward map to build a reduced order model, which could provide reasonable numerical accuracy and feasible computing speed.

- Christen, J. A., & Fox, C. (2005) "MCMC using an approximation" *Journal of Computational and Graphical Statistics*, **14(4)**, 795–810.

  This paper presents our preferred method for taking advantage of computational efficiencies available from state-dependent approximations, while still sampling from the correct posterior distribution. An example is presented of inference in an inverse problem using a cheap approximation based on a local linearization of the forward map.

- Kolehmainen, V., Tarvainen, T., Arridge, S. R., & Kaipio, J. P. (2010) "Marginalization of uninteresting distributed parameters in inverse problems", *International Journal for Uncertainty Quantification*, **1**, accepted.

  Develops the enhanced error model, evaluated over the prior distribution. Presents an application in which the forward map is approximated by a coarse numerical model, with statistics of the numerical error between the coarse model and the forward map used to construct an accurate reduced order model of the posterior distribution.

- Cui, T. (2010) "Bayesian calibration of geothermal reservoir modelling via Markov chain Monte Carlo", Ph.D. thesis, Department of Engineering Science, the University of Auckland.

  Presents detailed development of the adaptive delayed-acceptance Metropolis Hastings (ADAMH) algorithm, with extensive performance verification and large-scale examples. This algorithm represents our best current technology for correct and complete sampling in inverse problems using low-level representations. A milestone for geothermal model calibration, allowing automatic calibration of large-scale models for the first time.

Convergence diagnostics

- Roberts, G. O. (1996) "Markov chain concepts related to sampling algorithms", in *Markov Chain Monte Carlo in Practice*, eds Gilks, W. R. and Richardson, S., & Spiegelhalter, D. J., Chapman & Hall, 45–57.

  A useful summary of convergence results for MCMC, with simple window estimators for the variance in the sample mean.

- Wolff, U. (2004) "Monte Carlo errors with less errors", *Computer Physics Communications*, **156(2)**, 143–153.

  Introduced a Γ-method to estimate the variance of the mean estimator, and the integrated autocorrelation time, by choosing an optimal window size that minimizes the error of the Monte Carlo error for a given sequence of correlated samples. MATLAB code is available on the author's website.

Selected applications

We list here, without annotation, papers that demonstrate exemplary modelling and inferential solution of substantial inverse problems.

- Haario, H., Laine, M., Lehtinen, M., Saksman, E., & Tamminen, J. (2004) "Markov chain Monte Carlo methods for high dimensional inversion in remote sensing", *Journal of the Royal Statistical Society: Series B*, **66(3)**, 591–608.

- Cornford, D., Csato, L., Evans, D. J., & Opper, M. (2004) "Bayesian analysis of the scatterometer wind retrieval inverse problem: Some new approaches". *Journal of the Royal Statistical Society. Series B*, **66(3)**, 609–652.

- McKeague, I. W., Nicholls, G. K., Speer, K., & Herbei, R. (2005) "Statistical inversion of South Atlantic circulation in an abyssal neutral density layer", *Journal of Marine Research*, **63(4)**, 683–704.

- Watzenig, D., & Fox, C. (2009) "A review of statistical modeling and inference for electrical capacitance tomography", *Measurement Science and Technology*, **20(5)**, doi:10.1088/0957-0233/20/5/052002.

- Lipponen, A., Seppanen, A., & Kaipio, J. P. (2010) "Reduced-order estimation of nonstationary flows with electrical impedance tomography", *Inverse Problems*, **26(7)**, doi:10.1088/0266-5611/26/7/074010.▲

SOFTWARE HIGHLIGHT

RECENT DEVELOPMENTS IN THE BUGS SOFTWARE

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In recent years the main thrust of the BUGS project [1, 2] has been towards focussing development efforts on the open-source incarnation of the software, OpenBUGS. The main difference between OpenBUGS and WinBUGS lies in the behaviour of the 'expert system', which chooses the various sampling methods for updating unknown variables in the model. WinBUGS defines one algorithm for each possible classification of sampling distribution whereas there is no limit to the number of algorithms that OpenBUGS can make use of. The OpenBUGS approach provides much greater scope for experimenting with contemporary MCMC methods and has thus been adopted as the way forward for the project. At the time of writing, OpenBUGS already supports considerably more sampling methods than does WinBUGS, such as several new types of block-updater and some 'population MCMC' methods [3].

Another reason for the shift towards OpenBUGS is the open-source nature of the software, potentially facilitating developments from many individuals. As the software has matured, from somewhat experimental into a stable and reliable package, much behind-the-scenes work has led to an appropriate infrastructure for supporting such developments. The source code now resides on SourceForge [4], an internet repository specifically designed for such projects. Anyone can download the source code and apply for "developer" status if they have code to contribute. In addition a wiki page has been developed [5] to facilitate, for example, distribution, dissemination, discussion and bug tracking, and also to act as a general BUGS resource, providing FAQs and instructions on how to get the software running on Linux, or how to begin developing the software yourself, say. As a wiki this has the facility to be edited from anywhere and by anyone (with permission), representing another progressive move to take the project forwards. A finance hub has been set up so that the project can now receive donations and an international steering committee will decide on future directions, such as how to spend donated funds to best serve the user community.

In terms of developing the capabilities of the software, here at the MRC Biostatistics Unit in Cambridge we have been focussing on translating some of the more specialised WinBUGS developments into OpenBUGS, such as templates for implementing your own specialised functions and distributions (WBDev [6]), and reversible jump capabilities (Jump [6]). Mostly we have been implementing and developing facilities for modelling dynamical systems -models involving differential equations- and combining these effectively with other models. We are also looking at implementing truncated distributions correctly, so that there is a clearer distinction between censoring and truncation [7]. Meanwhile, aside from his important work on improving the expert system, implementing new MCMC methods, and general refinement of the system, Andrew Thomas has been working on methods for sequential importance sampling and parallelising multiple Markov chains across multi-core processors, leading to "OpenSIS" and "MultiBUGS", respectively. Also here at the Biostatistics Unit, Chris Jackson has made several important contributions, including techniques for visualising the uncertainty conveyed by posterior distributions [8], current work-in-progress on Bayesian nonparametrics, and collaborating with Uwe Ligges (Technische Universität Dortmund) and others to produce a new version of BUGS-R (an interface for controlling OpenBUGS from within R, aka BRugs). Vijay Kumar (Gorakhpur University) has contributed numerous specialized distributions, such as various extensions of the Weibull distribution. And last, but by no means least, a team led by Neal Thomas (Pfizer, US) and Bill Gillespie (Metrum Institute, Connecticut) have developed a suite of validation programs for the software, to prove that it is actually working correctly!

OpenBUGS is now considered to be at least as re-

liable and efficient as WinBUGS 1.4.3 (no jokes please) across a wide range of test applications. WinBUGS will always be available but is no longer being developed, and so we are urging users to make the switch. Please take a look anyway, by visiting the wiki page [5]; comments are always very welcome.

Acknowledgements

Thank you to everyone involved in the project, there are too many to mention here! The following people have been instrumental in getting the project to where it is today: Andrew Thomas, David Spiegelhalter, Nicky Best, Bob O'Hara, Neal Thomas, Bill Gillespie, Nathan Coulter, Uwe Ligges, Larry Gould, Chris Jackson and Steve Miller. Many thanks also to all the users of the software, whose patience, enthusiasm and innovation is always very much appreciated.

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[1] D. Lunn, D. Spiegelhalter, A. Thomas, and N. Best. The BUGS project: Evolution, critique and future directions (with discussion). Statistics in Medicine 28:3049–3067, 2009.

[2] D. J. Lunn, A. Thomas, N. Best, and D. Spiegelhalter. WinBUGS -a Bayesian modelling framework: concepts, structure, and extensibility. Statistics and Computing 10:325–337, 2000.

[3] C. J. F. Ter Braak. A Markov chain Monte Carlo version of the genetic algorithm Differential Evolution: Easy Bayesian computing for real parameter spaces. Statistics and Computing 16:239–249, 2006.

[4] http://sourceforge.net

[5] http://www.openbugs.info

[6] http://www.winbugs-development.org.uk

[7] https://www.jiscmail.ac.uk/cgi-bin/webadmin?A2=ind0910&L=BUGS&F=&S=&P=5643

[8] C. H. Jackson. Displaying uncertainty with shading. The American Statistician 62:340-347, 2008.▲

STUDENTS' CORNER

Call for Dissertation Abstracts

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Recent Ph.D graduates, having your dissertation abstract published is as simple as emailing it to the email address above. Publishing your abstract will not only provide exposure for your research, but it may potentially lead to collaborations with future colleagues. In addition, you are providing an important service to the Bayesian community by giving established researchers a taste of the interests of young researchers. Faculty, please encourage your students' participation.▲

NEWS FROM THE WORLD

CALL FOR ANNOUNCEMENTS

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I would like to encourage those who have any announcements or would like to draw attention to an up-coming conference, to get in touch with me and I would be happy to place them here.

Announcements

2012 ISBA World Meeting Planning has already begun for the 11th ISBA World Meeting, to be held in June 2012 in Kyoto, Japan. See the June 2010 issue of the ISBA Bulletin for the announcement and more information http://www.bayesian.org/bulletin/1006.pdf.

I would like to encourage those who have any announcements or would like to draw attention to an up-coming conference, to get in touch with me and I would be happy to place them here.

Meetings and conferences

Eighth ICSA International Conference, Guangzhou, China. 19-22nd December, 2010.

The conference will be held at Guangzhou University, located in Guangzhou city in Guangdong Province in Southern China and has a theme 'Frontiers of Interdisciplinary and Methodologic Statistical Research'. The conference is cosponsored by the American Statistical Association, the Chinese Association of Applied Statistics, the Chinese Society of Probability and Statistics, and the Institute of Mathematical Statistics, and International Society for Bayesian Analysis (ISBA), and jointly organized by the College of Mathematics and Information Science, Guangzhou University.

Please note that the deadline for early registration is the 1st Nov. Additional information can be found at http://www.icsa2.org/Intl_2010/.

66th Annual Deming Conference on Applied Statistics, Atlantic City, NJ. 5-10th December, 2010.

The purpose of the three-day conference is to provide a learning experience on recent developments in statistical methodologies in twelve three-hour tutorials. Attendees receive bound proceedings of the presentations. The conference is followed by two parallel short courses on (1) Bayesian Adaptive Clinical Trials by Prof. Brad Carlin, University of Minnesota and Scott Berry, Berry Consultants; and (2) SAS for Mixed Models by Profs. Ramon Littell, University of Florida and Walter Stroup, University of Nebraska. The conference makes the books on which the conference is based available for sale at about a 40% discount.

The full program and online registration is available at http://www.demingconference.com.

Adapski III: Advances in Monte Carlo, Park City, UT, 3-4th January, 2011.

Following an enthustiastic reponse to the earlier editions of the workshop in 2005 and 2008, this workshop is intended to provide an updated snapshot of the methodological and theoretical advances in Monte Carlo methods with an emphasis on adaptive Monte Carlo methods in the broad sense (adaptive MCMC, adaptive population Monte Carlo, and various breeds of adaptive importance sampling amongst others), that is algorithms that attempt to automatically optimise their performance to a given task.

The workshop will consist of 4 half-day sessions on 3rd and 4th January and one or two poster sessions and will be held at The Canyons. There will be breaks on both afternoons in order to allow both informal discussions and relaxation (skiing!).

Additional information can be found at http://www.maths.bris.ac.uk/%7Emaxca/adapskIII/.

MCMCSki III: Markov Chain Monte Carlo in Theory and Practice, Snowbird, UT, 5-7th January, 2011.

A central theme of the conference will be Markov chain Monte Carlo (MCMC) and related me-

thods and applications in the 21 years since the publication of Gelfand and Smith (1990, JASA), the paper that introduced these methods to mainstream statisticians. The conference will also feature three plenary speakers (Nicky Best, Mike Newton, and Jeff Rosenthal) and six invited sessions from internationally known experts covering a broad array of current and developing statistical practice. As with the first joint IMS-ISBA meeting in Isla Verde, Puerto Rico,and the second and third joint meeting in Bormio, Italy, nightly poster sessions will offer substantial opportunity for informal learning and interaction.

Additional information can be found at http://madison.byu.edu/mcmski/

Fourth Annual Bayesian Biostatistics, Houston, Texas. 26-28th January, 2011.

Current and prospective users of Bayesian biostatistics are invited to join others with similar interests for a three-day conference sponsored by the Department of Biostatistics at The University of Texas MD Anderson Cancer Center. Researchers are invited to submit abstracts for consideration as contributed presentations at the conference. All topics in Bayesian biostatistics are acceptable, including clinical trial design and analysis, health policy, epidemiology, health economics, clinical decision making, comparative effectiveness, and bioinformatics. Submit abstract title; text of 150 words or less; authors, affiliations, and contact information via e-mail to Lydia Davis (lbdavis@mdanderson.org). Submission Deadline: October 1, 2010. Applicants will be notified of the Program Committee's decision by November 1, 2010.

All participants are encouraged to display a poster at the conference poster session and discussion. If interested, send an abstract (up to 300 words) to Lydia Davis (lbdavis@mdanderson.org) by November 15, 2010.

Online registration and additional information about Bayesian Biostatistics Conference 2011 is available at http://biostatistics.mdanderson.org/BBC2011.

Conference in Honour of Professor Adrian F. M. Smith on Hierarchical Models and Markov Chain Monte Carlo, Heraklion, Greece. 2-5th June, 2011.

In Bayesian statistics, two influential papers in the latter part of the 20th Century –reprinted in Volume III of Breakthroughs in Statistics, Springer-Verlag–were co-authored by Adrian Smith. These papers contain two central ideas in the theory and practice of modern Bayesian statistics, namely Hierarchical Models (Lindley and Smith, Journal of the Royal Statistical Society, Series B, 1972) and Markov chain Monte Carlo (Gelfand and Smith, Journal of the American Statistical Society, 1990). This conference will showcase many key advances that continue to be made, using these ideas, by many established and younger researchers.

Research involving hierarchical models and MCMC continues to grow at an astonishing rate, spanning a broad spectrum of topics in medicine, engineering, scientific computation, business, psychology, bio-informatics, computational physics, graphical models, neural networks, geosciences, and public policy. This explosion of Bayesian ideas is, in part, the result of papers authored or co-authored by Adrian Smith.

Additional information can be found at http://afmsmith.com/index2.htm.

International Research Conference on Bayesian Learning, Istanbul, Turkey. 15-17th June, 2011.

In all domains of research, a major part of the problem that needs to be solved involves the task of managing the uncertainty inherent in the problem. In that instance, Bayesian Learning provides a powerful methodology to researchers, enabling them to reach effective decisions in light of evidence. With its ability to incorporate prior knowledge to the inference process, Bayesian Learning appeals to researchers for both of its theory and applications.

Interested individuals from academic and business worlds are invited to come together to discuss and communicate on challenging issues related to theory of Bayesian learning and applications in finance & accounting, general management, marketing, organizational behavior and production & operations within the historic and mystic environment of Istanbul while we will celebrate the 310th birthyear of Rev. Bayes.

Additional information can be found at http://marc.yeditepe.edu.tr/yircobl11.htm.

Short courses and workshops

Workshop on Bayesian Inference for Latent Gaussian Models with Applications, Zurich, Switzerland. 2-5th February, 2011.

Latent Gaussian models have numerous applications, for example in spatial and spatio-temporal epidemiology and climate modelling. This workshop brings together researchers who develop and apply Bayesian inference in this broad model class. One methodological focus is on model computation, using either classical MCMC techniques or more recent deterministic approaches such as integrated nested Laplace approximations (INLA). A second theme of the workshop is model uncertainty, ranging from model criticism to model selection and model averaging.

Hravard Rue will give an INLA tutorial on the first day. Further confirmed invited speakers are Renato Assunção, Gonzalo García-Donato, Alan Gelfand, Finn Lindgren, Douglas Nychka, Christopher Paciorek and Stephen Sain. Contributed talks and a poster session complete the four-day program.

Additional information can be found at http://www.math.uzh.ch/bilgm11.

2011 International Workshop on Objective Bayesian Analysis, Shanghai, China. 11-15th June, 2011.

Following earlier meetings on objective Bayes methodology the principal objectives of OBayes2011 are to facilitate the exchange of recent research developments in objective Bayes methodology, to provide opportunities for new researchers to shine, and to establish new collaborations and partnerships that will channel efforts into pending problems and open new directions for further study. O-Bayes2011 will also serve to further crystallize objective Bayes methodology as an established area for statistical research.

Additional information can be found at http://www.sfs.ecnu.edu.cn/Obayes2011/index.html.

Eight Workshop on Bayesian Nonparametrics, Veracruz, Mexico. 26-30th June, 2011.

The workshop aims at presenting the latest developments on Bayesian nonparameteric statistics, covering a wide range of theoretical, methodologic and applied areas. The meeting will be structured in 4 tutorials on special topics, a series of invited and contributed talks and contributed posters sessions. For those interested this event will be preceded by the Mexican Workshop on Bayesian Statistics (TAMEB) which will feature a day of introductory courses (in Spanish) to Bayesian statistics.

Scientific committee: David B. Dunson, Subhashis Ghosal, Jim Griffin, Nils L. Hjort, Michael I. Jordan, Yongdai Kim, Antonio Lijoi, Ramses H. Mena, Peter Müller, Luis E. Nieto, Igor Pruenster, Fernando A. Quintana, Yee W. Teh and Stephen G. Walker

Additional information can be found at http://www.bnpworkshop.org/.▲