# THE ISBA BULLETIN

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### A Message from the President

by Sylvia Richardson *ISBA President* sylvia.richardson@imperial.ac.uk

I am delighted to be able to give up updates of activities during the last couple of months. First of all, the Board has formally approved the creations of Sections within ISBA. Groups of normally at least 30 ISBA members may thus petition the Board to be designated as a Section. The petition has to outline the initial bylaws of the section, its purpose and how it fits within the overall aim of ISBA. All the details regarding the creation of a Section will be given on the web site. I hope that this process will encourage the constitution of a number of active groups under the ISBA umbrella, and that subsequent issues of the Bulletin will be able to report the creation of Sections and their activities.

Election to the nominating committee has also taken place recently and I am delighted to report that Guido Consonni, Dipak Dey, Chris Holmes, Daniel Peña, Fabrizio Ruggeri, and Jon Wakefield have been duly elected. I extend my warmest congratulations to them.

The first issue of Bayesian Analysis is scheduled for August. Rob Kass and all the editorial board have worked very hard and we all look forward to reading the journal. Many thanks to them. Thoughts are currently being given to finding ways of including our journal into a bundle for libraries. I would like to encourage potential authors to send their work to Bayesian Analysis.

### A MESSAGE FROM THE EDITOR

#### by J. Andrés Christen jac@cimat.mx

Again I wish to remind you to please feel free to participate in the Bulletin, by sending me articles or suggestions for columns. Also please suggest topics to discuss or people to invite to write columns, either to the corresponding AE or to me directly. I hope you like reading this issue of the ISBA Bulletin!

As usual, meetings are an essential part of our activities. Active preparations are underway for the next joint Valencia / ISBA World meeting in 2006. The ISBA programme is being developed under the lead of Kerrie Mengersen, the Chair of the Programme Council. It has been decided that the ISBA sessions will be held in the afternoons of the conference, and will consist of a single stream of contributed talks, while the morning sessions are organised by the Valencia programme committee and consist of invited plenary talks, followed by ample time for discussion. More details on the meeting are given in this Bulletin in page 8 and I take this opportunity to thank Kerrie and her colleagues on the Programme Council for their important contribution to the activities of ISBA.

An important award will be made at ISBA 2006, the Mitchell prize. This prize recognises an outstanding paper that describes how a Bayesian analysis has solved an important applied problem. The 2006 Prize committee members are Tony Oagan (Chair), Dave Higdon and Marina Vanucci. Details and the call for entries can be found in this issue of the bulletin. This award has been created and maintained through the active solidarity of many Bayesian colleagues in ISBA, from the Mitchell Prize Founderscommittee, and by the ASA section on Bayesian Statistical Science, and we are all grateful for their commitment to this endeavour. I thus conclude my message by encouraging our community to actively seek nominations to this prestigious award. For people in the northern hemisphere: Have a good summer!



June 2005

#### APPLICATIONS

#### STATISTICAL MODELS RECONSTRUCT ANCIENT CLIMATES

by John Haslett John.Haslett@tcd.ie

Climate change is widely considered to be one of the most severe forms of the many environmental changes taking place globally. The development of sophisticated climate models calls for close collaboration between scientists from various fields including palaeo-environmentalists, ecologists, atmospheric scientists, oceanographers, and climate modellers. Researchers in the Statistics Department of Trinity College Dublin, led by Professor John Haslett, are collaborating with botanists in Durham University in the UK, led by Professor Brian Huntley, and with Professor Alan Gelfand of Duke University (the ISBA President-Elect) on Bayesian statistical methods in the reconstruction of past climates from fossil pollen found in lake sediment.

The team's previous work was focused on the palaeoclimate at one site in Ireland, Glendalough. Current much more ambitious work concerns the climate of Europe during the Holocene. General information about the science may be found at the HOLIVAR (http://www.geog.ucl.ac.uk/ ecrc/holivar/) and PAGES (http://www.pages. unibe.ch/) websites. One specific aspect of such work is that better knowledge of the palaeo-climate will provide a better basis for evaluating on-going research into climate change. This is the focus of the Paleoclimate Modelling Intercomparison Project (PMIP); see http://www-pcmdi.llnl.gov/ pmip/.

The essential idea in pollen based palaeo-climate reconstruction is that climate drives changes ecology. Since fossil pollen grains in lake sediment can provide quantitative information on past ecologies, information is thus indirectly available on past climates. In Ireland, the end of the Ice Age (circa 11,000 years ago) was extremely rapid, and involved an arctic tundra landscape suddenly warming - perhaps over a decade. The pollen records show rapid colonization by Betula (birch) and Juniperus (juniper) followed over the succeeding millennium by Corylus (hazel), Pinus (pine), Ulmus (elm) and Quercus (oak). Knowledge of their favoured ecologies from modern data leads to information on the past development of the climate. The basic data are pollen assemblages - counts of the numbers of pollen grains for several (typically greater than 30) different taxa. The identification

and counting of these pollen grains is difficult and error prone; see Figure 1 for examples of pollen grains that have not been degraded either by the passage of several millennia nor by the laboratory processes necessary to recover pollen from the silt. At Glendalough, a 15m core of sediment yields 150 samples (at regular depths but irregular times). There are several hundred such cores across Europe.

The Bayesian formulation for this problem involves several aspects. These include: the uncertainty in dating the sample - radio-carbon dating is not as simple as is generally thought; the probability distribution of multivariate counts - we consider mixtures of multinomials; the way this distribution responds to climate - we use multivariate non-parametric smoothing; the temporal variation in climate, which is mostly smooth in time (at a resolution of several decades), but is subject to occasional changes - we use a random walk with longtailed increments.

MCMC may be thought of as permitting the generation, by random sampling, of past climates that are consistent with the pollen record. We regard frequently generated climates as those most probable, given the data. Figure 2 shows, for each of the 150 sections of a sampled core from Glendalough each corresponding to a time slice from the past, a summary of 1000 reconstructions of 'degree days above 5 degrees', measure of the length of the growing season, at Glendalough. Thus for climates since the ice-age, GDD5 values of approximately 1500 seem most probable given the data. However, previous values around 500 are more likely.

The main advantage of this methodology over others in the literature is that it provides meaningful statements on the uncertainty associated with such reconstructions. It is this feature that permits the joint use of the multiplicity of records that are available. At Glendalough there are 150 samples, and climate is reconstructed en bloc as coherent (joint) temporal histories. The Holocene project aspires to provide realisations of past climate as joint spatio-temporal reconstructions. Pollen is just one of several climate proxies; dendrochronolgy (tree-rings) is another well known example. The approach extends to the simultaneous joint use of the many different types of information about the palaeo-climate. The disadvantage is that the work is computationally challenging in the extreme, involving implementation on parallel processing clusters. Typical Markov chain Monte Carlo runs take many days and sometimes weeks even on simple versions of the problem. Papers and links may be found at http://www.tcd.ie/

Figure 1: Pollen Grains: Quercus (Oak) - left, Betula (Elm) - right



Figure 2: Climate Reconstruction at Glendalough - Growing Days Above 5 Degrees



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### BAYESIAN METHODS FOR WAVELET-BASED MODELING

#### by Claudia Angelini and Marina Vannucci c.angelini@iac.cnr.it and mvannucci@stat.tamu.edu

Wavelets are families of functions that can accurately describe other functions in a parsimonious way. Because of their time-frequency properties, wavelets have become a powerful tool for dimension reduction and extraction of important features of curves. Wavelets are defined as translations and dilation of a basis function  $\psi$ , called wavelet mother,

$$\psi_{i,k}(x) = 2^{j/2} \psi(2^j x - k). \tag{1}$$

Given a vector of observations of a function at equispaced points, fast wavelet transforms allow to calculate empirical wavelet coefficients that describe feature of the data at different locations and scales.

This bibliography is restricted to Bayesian contributions to wavelet-based statistical modeling and,

### ANNOTATED BIBLIOGRAPHY

due to space limitation, it is not exhaustive.

## Wavelet Shrinkage

Pioneer work on classical wavelet shrinkage was done by Donoho and Johnstone in early 90's. This technique allows the recovery of a signal from noisy data by shrinking empirical wavelet coefficients according to some optimal criteria.

 Vidakovic, B. (1998), "Non-linear wavelet shrinkage with Bayes rules and Bayes factors", J. American Statistical Association, 93, 173–179. This is the first contribution to the development of Bayesian approaches to wavelet shrinkage. Prior models are imposed on the wavelet coefficients and Bayes rules are constructed that achieve non-linear thresholding via Bayesian hypothesis testing. The significance of each wavelet coefficient is independently tested by imposing a prior that assigns non zero probability to the null hypothesis.

- Chipman, H.A., Kolaczyk, E.D. & McCulloch, R.E. (1997), "Adaptive Bayesian wavelet shrinkage", *J. American Statistical Association*, 92, 1413–1421. The authors achieve Bayesian shrinkage via a scale mixture of two normal prior distributions with different standard deviations, representing negligible and significant wavelet coefficients. A closed form posterior mean estimate is obtained.
- 3. Clyde, M., Parmigiani, G. & Vidakovic, B. (1998), "Multiple shrinkage and subset selection in wavelets", *Biometrika*, **85**, 391–401. The prior model is a scale mixture of a normal distribution and a point mass at zero, in the spirit of those used for model selection. Monte Carlo methods are employed to obtain approximations of posterior means and variances.
- Abramovich, F., Sapatinas, T. & Silverman, B.W. (1998), "Wavelet thresholding via a Bayesian approach", *J. Royal Statistical Society, Series B*, **60**, 725–749. Using the same prior model as in reference [3.] the authors propose posterior median estimators that lead to a level-dependent thresholding procedure.

# **Relaxing Assumptions**

Extensive work has been done on extensions of wavelet shrinkage techniques. Efforts have been in relaxing particular model assumptions and in improving the prior models.

- 5. Clyde, M. & George, E.I. (2000), "Flexible empirical Bayes estimation for wavelets", *J. Royal Statistical Society, Series B*, **62**, 681–698. Empirical Bayes methods are proposed to aid prior specifications. These are developed for standard normal error models as well as heavier tailed error models, such as Studentt.
- 6. Vidakovic, B. & Ruggeri, F. (2001), "BAMS method: theory and simulations", *Sankhyā*, *Series B*, 63, 234–249. The prior on each wavelet coefficient is chosen as a mixture of a point mass at zero and a double exponential, conditionally on the noise variance. The prior on the noise variance is chosen as exponential. This results in a Bayes rule that achieves level-depended shrinkage.
- Angelini, C. & Vidakovic B. (2004), "Γ-Minimax Wavelet Shrinkage: A Robust Incorporation of Information about Energy of

a Signal in Denoising Applications", *Statistica Sinica*, **14**, 103–125. Several prior distributions are considered for single coefficients. All are mixtures of a point mass at zero and a symmetric, unimodal distribution. Estimation is done within the  $\Gamma$ -minimax paradigm.

- Vannucci, M. & Corradi, F. (1999), "Covariance structure of wavelet coefficients: Theory and models in a Bayesian perspective", *J. Royal Statistical Society, Series B*, 61, 971–986. The authors consider prior models that avoid the typical assumption of independent wavelet coefficients. A fast algorithm is developed and used to iteratively calculate the wavelet coefficients covariances.
- 9. Abramovich, F., Besbeas, P. & Sapatinas, T. (2002), "Empirical Bayes approach to block wavelet function estimation", *Computational Statistics and Data Analysis*, **39**, 435–451. Information about neighboring structure of wavelet coefficients is incorporated in the prior model. A mixture of a point-mass at zero and a multivariate normal distribution is placed on level-wise blocks of wavelet coefficients.
- De Canditiis, D. & Vidakovic B. (2004), "Wavelet Bayesian block shrinkage via mixtures of normal-inverse gamma priors", J. Computational and Graphical Statistics, 13, 383– 398. A mixture of two normal-inverse gamma distributions is imposed on blocks of coefficients leading to block-wise shrinkage.
- 11. Kolaczyk, E.D. (1999), "Bayesian Multiscale models for Poisson Processes", *J. American Statistical Association*, **94**, 920–933. The author extends methods to a Poisson regression model and develops inferential strategies within a Haar multiscale Bayesian framework.

# **Minimax Properties**

Abramovich, F., Amato, U. & Angelini, C. (2004), "On optimality of Bayesian wavelet estimators", *Scandinavian Journal of Statistics*, 31, 217–234. Asymptotic minimax optimality of posterior mean, median and Bayes Factor for Besov spaces is studied. The prior imposed on each wavelet coefficient is a mixture of a point mass at zero and a Gaussian density.

- 13. Johnstone, I.M. & Silverman, B.W. (2005), "Empirical Bayes selection of wavelet thresholds", *Annals of Statistics*, **33**, to appear. A class of empirical Bayes methods for leveldependent thresholds is presented. The prior is a mixture of a point mass at zero and a heavy-tailed density. Estimates are obtained by posterior median. Results are given on the asymptotic minimax optimality for a wide class of Besov spaces and loss functions.
- Zhang, C.H. (2005), "General empirical Bayes wavelet methods and exactly adaptive minimax estimation", *Annals of Statistics*, 33, 54–100. General empirical Bayes methods are proposed and their frequentist properties, such as minimaxity, supersufficiency and dominance, are considered.

# **Functional Data**

The following references concern the use of wavelets in the modeling of multiple curves.

- 15. Brown, P.J., Fearn, T. & Vannucci, M. (2001), "Bayesian wavelet regression on curves with application to a spectroscopy calibration problem", J. American Statistical Association, 96, 398–408. The authors consider regression models that relate a multivariate response to functional predictors, they apply wavelet transforms to the curves, and use Bayesian selection methods to identify features that best predict the responses.
- 16. Vannucci, M., Brown, P.J. & Fearn, T. (2003), "A decision theoretical approach to wavelet regression on curves with a high number of regressors", J. Statistical Planning and Inference, 112 195–212. Using the same regression setting as in reference [15.] the authors propose an alternative inferential approach that uses decision theory and seeks a single best subset of the wavelet coefficients. Prediction is done under a quadratic loss with an additive cost penalty non-decreasing in the number of wavelet coefficients.
- 17. Morris, J.S., Vannucci, M., Brown, P.J. & Carroll, R.J. (2003), "Wavelet-based nonparametric modeling of hierarchical functions in colon carcinogenesis (with discussion)", J. American Statistical Association, 98, 573–597. The authors extend wavelet regression to the nested functional framework. Curves are modeled in a nonparametric hierarchical fashion. A wavelet-based Bayesian approach

leads to adaptively regularized estimates and posterior credible intervals for the mean and random effects functions.

18. Vannucci, M., Sha, N. & Brown, P.J. (2005), "NIR and mass spectra classification: Bayesian methods for wavelet-based feature selection", *Chemometrics and Intelligent Laboratory Systems*, to appear. Classification problems involving functional predictors, such as near infrared and protein mass spectra, are considered. Probit models and Bayesian variable selection methods allow simultaneous classification of the samples and selection of discriminatory wavelet coefficients.

# **Other Statistical Modeling**

Here we list wavelet-based approaches on a number of different statistical modeling contexts.

- Müller, P. & Vidakovic, B. (1998), "Bayesian inference with wavelets: Density estimation", *J. Computational and Graphical Statistics*, 7(4), 456–468. Wavelet bases functions are used to build a series expansion of an unknown density. A prior model imposed on the wavelet coefficients induces geometrically decreasing probabilities on non-zero coefficients at finer levels. Inference is done via MCMC.
- 20. Park, C.G., Vannucci, M. & Hart, J.D. (2005), "Bayesian methods for wavelet series in single-index models". J. Computational and Graphical Statistics, to appear. Similar in spirit to reference [19.], although in the context of single-index models. A nonparametric estimation approach is proposed that combines wavelet methods for non-equispaced designs with Bayesian models. The direction parameter is represented via its polar coordinates.
- Huang, S.Y. & Lu, H.S. (2000), "Bayesian wavelet shrinkage for non-parametric mixedmodels", *Statistica Sinica*, 10, 1021–1040. Bayes and empirical Bayes estimation for nonparametric mixed-effects models are addressed. Empirical Bayes estimators have Gauss-Markov type optimality, are equivalent to regularized estimators and are minimax.
- 22. Pensky, M. & Vidakovic, B. (2005), "Bayesian decision theoretic scale-adaptive estimation of spectral density", *Statistica Sinica*, to appear. The log-spectrum of a stationary Gaussian time series is estimated via Bayesian shrinkage of empirical wavelet coefficients.

Asymptotical optimality of the estimator is proven.

23. Ko, K. & Vannucci, M. (2005), "Bayesian wavelet analysis of autoregressive fractionally integrated moving-average processes", *J. Statistical Planning and Inference*, to appear. The authors propose a wavelet-based Bayesian approach to the estimation of Gaussian ARFIMA model. Decorrelation properties of the wavelet transform imply a relatively simple Bayes model in the wavelet domain. Estimation is done via MCMC.

# **Image Analysis**

- 24. Jansen, M. & Bultheel, A. (2001), "Empirical Bayes approach to improve wavelet thresholding for image noise reduction", *J. American Statistical Association*, **96**, 629–639. Bayesian wavelet shrinkage is extended to image denoising. A geometrical prior leads to a multiscale version of a Markov random field model.
- 25. Figueidero, M.A.T. & Nowak, R.D. (2001), "Wavelet-based image estimation: an empirical Bayes approach using Jeffrey's noninformative prior", *IEEE Transactions on Image Processing*, **10**, 1322–1331. A hierarchical empirical Bayes approach using Jeffreys prior and the MAP principle leads to an amplitudescale invariant shrinkage rule.
- Portilla, J., Strela, V., Mainwright, M. & Simoncelli, E.P. (2003), "Image denoising using scale mixtures of Gaussians in the wavelet domain", *IEEE Transaction Image Processing* 12, 1338-1351. Coefficients at adjacent positions and scales are modeled as product of a

Gaussian vector and a hidden positive scalar multiplier. Single coefficients estimates are weighted averages of local linear estimates over all values of the hidden multiplier.

# **Books and Review Papers**

Reviews of Bayesian modeling in the wavelet domain are addressed in:

- 27. Vidakovic, B. (1999), *Statistical modeling by wavelets*, John Wiley & Sons: New York.
- Müller, P. & Vidakovic, B. (Eds.) (1999), Bayesian inference in wavelet-based models, Lectures Notes in Statistics, 141, Springer Verlag: New York.
- 29. Ruggeri, F. & Vidakovic, B. (2005), "Bayesian modeling in the wavelet domain", in *Handbook of Statistics*, **25**, to appear.

## Software and Web Links

- 30. Antoniadis, A., Bigot, J. & Sapatinas, T. (2001), "Wavelet estimators in nonparametric regression: a comparative simulation study", *J. Statistical Software*, 6(6), 1–83. http://www. jstatsoft.org/v06/i06/html-help/
- Besbeas, P., De Feis, I. & Sapatinas, T. (2004), "A comparative simulation study of wavelet shrinkage estimators for Poisson counts", *International Statistical Review*, 72, 209–237.
- 32. Johnstone, I.M. & Silverman, B.W. (2005), "EbayesThresh: R programs for empirical Bayes thresholding", Journal of Statistical Software, 12(8), 1–38. http://www.stats.ox.ac. uk/~silverma/ebayesthresh/

### THE 2006 MITCHELL PRIZE

The Mitchell Prize committee invites nominations for the 2006 Mitchell Prize. The Prize is currently awarded every other year 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 ASA Section on Bayesian Statistical Science (SBSS), the International Society for Bayesian Analysis (ISBA), and the Mitchell Prize Founders' Committee, and consists for 2006 of an award of \$1000 and a commemorative plaque. The 2006 Prize selection committee members are Tony O'Hagan (chair), Dave Higdon and Marina Vannucci. This information is reproduced from http://www.bayesian.org/awards/mitchell.html, where more details may be found.

#### CALL FOR DISSERTATION ABSTRACTS

by Robert B. Gramacy rbgramacy@ams.ucsc.edu

Have you recently completed your Ph.D? Send your dissertation abstract to the email address above and have it published in this bulletin. This is one of the main features of the Student Corner section, and an important service to the community. However, this service depends on the active participation of our student members. Fac-

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### NEWS FROM THE WORLD

by Alexandra M. Schmidt alex@im.ufrj.br

I would like to encourage those who are organizing any event around the World, to get in touch with me to announce it here.

### **Events**

**Bayesian Hierarchical Models in Biostatistics**, University of New South Wales, Sydney, Australia. 18 - 19 July 2005.

The School of Mathematics, UNSW, proudly presents a two day workshop on Bayesian Hierarchical Models in Biostatistics to be held at UNSW on 18 - 19 July 2005. It is a satellite course to the AMSI sponsored Recent Advances in Biostatistics, Bioinformatics and Markov chain Monte Carlo.

The course instructors will be: Prof. Sylvia Richardson (Imperial College, London, UK) Prof. Peter Green (Bristol University, UK).

This course will be of interest to researchers in statistics and biostatistics or those involved in quantitative applications in epidemiology, medicine, biological sciences and environmental science, plus individuals with a general interest in understanding and applying advanced quantitative Bayesian methods. There is a sizable practical component to this course with time for hands-on data analysis. The course assumes a good grasp of basic statistics, including linear and generalized linear regression analysis. For further details please visit http://www.maths.unsw.edu.au/ ~scott/symposium/workshop-pjgsr.html.

Seminar on Bayesian Inference in Econometrics and Statistics (SBIES), Washington University ulty, please encourage your students to participate. As fellow Ph.D. candidates, or young researchers and students, we all benefit from exposure to the work of our peers. Potential employers and future colleagues can get a glimpse into the interests of young researches, and possibly even spark collaborations. I am sure that we all know someone who has recently graduated or will be graduating soon. I look forward to hearing from you before the next edition of this bulletin. Please feel free to provide a link to the full thesis, or a link to a technical report,

#### **NEWS FROM THE WORLD**

in Saint Louis, St. Louis, MO, USA. August 1-2, 2005.

which can be published along with the abstract.

The 2005 edition of the Seminar on Bayesian Inference in Econometrics and Statistics (SBIES) will be held at Washington University in Saint Louis on August 1 - 2, 2005.

The idea is to have a focused meeting concentrated on a few topics (say model choice, computation, and financial econometrics, but not necessarily restricted to these topics) and if possible limit the attendance to about 65 people. To ensure a place in the meeting it is important, therefore, to register as soon as possible. To facilitate participation in the meeting, some limited funding support to cover expenses related to travel and accommodations is available. If such support is necessary, please request it when you register. For further details please visit the conference web page http: //www.olin.wustl.edu/faculty/chib/sbies.

# Conference on Bayesian Applications and Methods in Marketing

**Tutorial on Bayesian Statistics and Marketing**, Johannes Kepler Universit Linz, Linz, Austria. September 19 - 21, 2005.

The conference and tutorial will bring together leading practitioners and scholars in marketing that use Bayesian statistical methods. The intent of the meeting is fourfold:

1. To provide training to students and practitioners on both basic and new Bayesian techniques.

2. To discuss current problems faced by practitioners and data are available for solving these problems.

3. To discuss new marketing methods and models.

4. To expose researchers in marketing to new advances in Bayesian methods.

More information is available at

http://www.ifas.jku.at/ or contact: Sylvia Frühwirth-Schnatter (*Sylvia.Fruehwirth-Schnatter@jku.at*).

Eight Workshop on Case Studies in Bayesian Statistics, Carnegie Mellon University, Pittsburgh, PA, USA. September 16-17, 2005.

The Eighth Workshop on Case Studies of Bayesian Statistics will take place on September 16th and 17th 2005 at Carnegie Mellon University, Pittsburgh, PA. The Workshop will feature in-depth presentations and discussions of substantial applications of Bayesian statistics to problems in science and technology, poster presentations of contributed papers on applied Bayesian work and, new this year, contributed presentations by young researchers. In conjunction with the workshop, the Department of Statistics' Eighth Morris H DeGroot memorial lecture will be delivered by Donald Rubin.

Selected case studies for the eighth workshop include "Does the Effect of Micronutrient Supplementation on Neonatal Survival Vary with Respect to the Percentiles of the Birth Weight Distribution?" by Francesca Dominici, Johns Hopkins University, and "An Assessment of Climate Change in the Ocean" by Michael Levine, Duke University. In addition, there will be a panel discussion on "Subjectivism and Objectivism: Two Views of Bayesian Analysis" led by Jim Berger and Michael Goldstein and moderated by Susie Bayarri. There will also be a short course on proteomics.

Contributed paper abstracts for posters will be due September 1, 2005.

The organizing committee of the Eighth Workshop includes Emery Brown, Alicia Carriquiry, Elena Erosheva, Constantine Gatsonis, Rob Kass, Herbie Lee, and Isa Verdinelli.

Please submit abstracts via the webpage http: //www.stat.cmu.edu/bayesworkshop which contains additional information, including abstracts of previous, successful case studies.

If you have questions, please contact Rob Kass at kass@stat.cmu.edu, or any of the other organizers.

Valencia / ISBA Eighth World Meeting on Bayesian Statistics, Benidorm, Alicante, Spain. June 1st - 7th, 2006.

This is the first announcement of the Eighth Valencia Meeting, which is co-sponsored by the University of Valencia and the International Society for Bayesian Analysis. The 8th Valencia International Meeting on Bayesian Statistics and the 2006 World Meeting of the International Society for Bayesian Analysis will be jointly held in Benidorm (Alicante, Spain) from Friday June 2nd to Tuesday June 6th, both inclusive. Programme Committee:

 Susie Bayarri (Universitat de València, Spain) James O. Berger (Duke University, USA) José M. Bernardo (Universitat de València, Spain) A. Philip Dawid (University College London, UK)

David Heckerman (Microsoft Research, USA) Adrian F. M. Smith (Queen Mary, University of London, UK)

Mike West (Duke University, USA) ISBA Programme Committee: Kerrie Mengersen (QUT, Australia) Peter Müller (MD Anderson Centre, USA) Jose M. Bernardo (Universitat de Valencia, Spain) Local Organizer: José M. Bernardo (Universitat de València, Spain).

Venue: Delegates are expected to arrive on the evening of Thursday June 1st (the opening lecture will be early in the morning of June 2nd) and depart on the morning of Wednesday, June 7th (the gala dinner will be on the evening of June 6th). As in previous occasions, this will be a residential conference in a coastal resort. On this occasion the venue is Gran Hotel Bali, a four star hotel with an appropriate purpose built large auditorium, built in the south end of Benidorm (50 km north from Alicante and 140 km south from Valencia). The closest airport is Alicante (ALC), well connected to Madrid, Barcelona and many European cities, by both conventional and low-cost airlines. Given the timing of the conference early flight bookings are strongly recommended.

<u>Tutorials</u>: The Conference will be preceded by a one-day set of tutorials, intended to provide a short review of the main ideas in Bayesian Statistics. The tutorials will be delivered by members of the programme committee and will take place through Thursday June 1st. Those planning to attend the tutorials should arrive to the conference venue on the evening Wednesday, May 31st.

Scientific Programme: The scientific programme will include (i) a set of 20 plenary thirty minute talks, followed by a discussion initiated by an invited discussant, which is being organized by the Valencia meeting scientific committee and will take place in the mornings, (ii) a set of selected plenary contributed talks organised by ISBA will take place in the afternoons, and (iii) a set of plenary poster sessions which will take place in the evenings. The language of the conference will be English.

Proceedings: Authors of both invited and contributed papers will be asked to submit their final versions by May 1st, 2006 in a purpose built LateX style which will be posted at the conference website. These proceedings will be printed in pdf format in a CD-ROM, which will be distributed at the conference. Post-conference publication plans will later be announced. All contributed papers selected for the published proceedings will automatically be considered for the the Lindley Prize, awarded for innovative research in Bayesian statistics: see http://www.bayesian. org/awards/LindleyPrize.html.

Registration: The registration fee (which will include the farewell dinner) will be 225/100 Eur (about 290/130 US\$) for delegates or accompanying persons. The accommodation fee for the full period, (6 nights) with breakfast and dinner (including beer or wine), but not lunch, will be 650/450

Eur (about 840/580 US\$) on single/double occupancy basis. The cost of the use of the auditorium and that of the required electronic and internet facilities has been distributed in fees quoted above. Registration forms will eventually be posted at the conference website: http://www.uv. es/valenciameeting.

<u>Grants</u>: The organizing committee is submitting grant proposals for travel support to junior researchers and colleagues from developing countries. Applications forms for financial support will be posted at the conference website.



#### INTERNATIONAL SOCIETY FOR BAYESIAN ANALYSIS

#### **Executive Committee**

President: Sylvia Richardson Past President: Jim Berger President Elect: Alan Gelfand Treasurer: Bruno Sansó Executive Secretary: Deborah Ashby Program Council

Chair: Kerrie Mengersen Vice Chair: Peter Müller Past Chair: José Miguel Bernardo

Web page: http://www.bayesian.org



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