

THE ISBA BULLETIN



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A MESSAGE FROM THE PRESIDENT

- Steve MacEachern -
ISBA President, 2016
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The series of conferences begun as the Valencia conferences and, with the passage of time, morphed into the ISBA world meetings is my second favorite series of conferences. The joy of the trip began in earnest when I bumped into friends at the local airport in Columbus, headed to ISBA of course, but taking different paths. It built with unexpected encounters with famous and soon-to-be famous Bayesians at my next stop in Charlotte, this time on the same plane to Roma. In Roma, we joined many more, now from across the globe, for the flight to Cagliari and thence to Forte Village. This, truly, was to be a gathering of the Bayesians.

The meeting lived up to its reputation, as the speakers brought their best material, and the fellowship was terrific—from the communal breakfasts in the morning, through the day of talks, to dinner, the late poster sessions, and even later discussions on the beach. Throughout the conference, I heard many comments on the high quality of the talks, both in terms of content and delivery.

Highlights of the conference included the newly named lectures. In the de Finetti Lecture, Persi Diaconis told us that, as Bayesians, we should certainly think about using Bayesian methods when analyzing data—and this includes the output of simulation methods used to fit Bayesian models. In the Bayarri Lecture, James Scott treated us to some personal reminiscences of Susie Bayarri, and then described a stream of work motivated by the need for speed when dealing with huge data sets. These two inaugural named lectures set a high bar for the future.

The additional ‘grand lectures,’ Foundational, Keynote, and the selected paper from Bayesian

Analysis were given by Peter Green, Sonia Petrone, David Spiegelhalter, Merlise Clyde, Sudipto Banerjee, Raquel Prado, David Dunson, and Matt Pratola. They spanned Bayesian Statistics, from theory, to application, to computation, and were enjoyed by all. As a reminder, conference goers are encouraged to submit discussions for the Bayesian Analysis paper.

A number of awards were presented at the meeting. These included a pair of honorary lifetime memberships in ISBA, presented to Adrian Smith and Phil Dawid for their long-standing contributions to the field. Both spoke of the early years of the Bayesian renaissance in which they participated so fully. Zellner medals were presented to Steve Fienberg and Merlise Clyde for their outstanding service to ISBA. (Continued p. 2)

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Steve Scott was presented with a certificate of appreciation for his dedicated work for ISBA, especially with regard to the web issues. There were many new ISBA Fellows—who you can read about later in this issue of the Bulletin.

The cabaret has long served as the endpoint of the conference, and it undoubtedly keeps the membership there for the duration of the conference. Pleasantly, even the last of the technical sessions had strong attendance. The cabaret featured ‘The Imposteriors.’ Attendees could pick up bumper stickers and geek-chic pocket protectors (ask an older colleague if you don’t know what they are). The band had the crowd moving until well after the scheduled closing, and there were many bleary eyes on the 4:30 a.m. bus to the airport.

Thanks to the scientific committee, headed by Michele Guindani, and the local organizing committee, headed by Stefano Cabras, for putting together a remarkable conference.

The General Meeting: News from the general meeting included the usual reports on the financial status of ISBA: sound, but with some concern about costs of the transition of the web site. The ISBA Bylaws state that \$30,000 are needed to perpetually endow a named lecture. Additionally, approval is needed by the ISBA Board. Sufficient funds have been donated to ensure the continuation of the de Finetti Lecture. The Bayarri Lecture has accumulated most of the funds, but has not yet hit the \$30,000 mark. I encourage those who knew Susie to contribute to the lecture fund memorializing her contributions to the discipline.

The Constitution and Bylaws Committee will review ISBA’s documents over the next several months, proposing changes as appropriate. In particular, language surrounding the named lectures will be updated.

The committee tasked with updating and redesigning the ISBA web site has been working hard to bring back functionality to the site. They have found a replacement for the previous vendor. Full functionality and a redesign will proceed over the next stretch of time. Kudos to Steve Scott, Amy Herring, and Kate Calder for their hard work on the web site.

Future ISBAs: Last year, a call went out for proposals to host ISBA 2020. Ming-Hui Chen, of the University of Connecticut, put together a stand-out proposal to hold the conference in Kunming, the capital of Yunnan province, China. There is good transportation to and from Kunming, prices for food and lodging are moderate, and there is a commitment for local support. The conference will be held on and near the grounds of Yunnan University which regularly hosts international conferences. The ISBA Board voted unanimously in favor of the proposal.

The current policy is to select the site of the ISBA world meeting four years in advance. Proposals are due some time earlier. Keep an eye out for a call in 2017 for proposals to host the 2022 meeting. I encourage all who are interested in hosting the meeting to consider putting a proposal together.

And of course, we mustn’t forget ISBA 2018 which will be held in Edinburgh, Scotland. Two years passes quickly. In the interim, work hard and consider proposing a session of talks for the conference.

Closing: Ah, my favorite conference series? That would be the biannual nonparametric Bayesian conference, now run under the auspices of the Bayesian Nonparametric Section of ISBA. For all the same reasons: great work, great friends, and (almost) always in an interesting venue. –*Steve MacEachern*

A MESSAGE FROM THE EDITOR

- Beatrix Jones -
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If you read nothing else in this *Bulletin*, turn to the end and check out the triumphant return of the interview section, where Eduardo Gutiérrez-Peña interviews Manuel Mendoza, one of my predecessors as *Bulletin* editor, and one of the founders of the Bayesian community in Mexico. Thanks to

Isadora Antoniano for organising, and translating, this interview. As well as our usual communications, we have the citations of the ISBA fellows, the Savage award winners, and other Bayesian awards. ISBA2016 was not the only conference this quarter; see the reports from the BAYESM conference and EnviBayes workshop. News of the World includes the information on the Lindley Prize and the Booking.com data mining competition announced at the ISBA meeting, and we hear from recent graduate Chris Glynn in the Students’ Corner.

FROM THE PROGRAM COUNCIL

- CHRIS HANS -
CHAIR OF THE PROGRAM COUNCIL
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ISBA at NIPS 2016: Following the success of the ISBA at NIPS initiatives in 2014 and 2015, the Program Council encourages individuals planning to submit proposals for post-conference workshops related to Bayesian methods at NIPS (Neural Information Processing Systems) 2016 <https://nips.cc/Conferences/2016> to consider requesting ISBA endorsement. Last year, four ISBA-endorsed workshops made it into the final program. Requests for endorsement can be submitted at <https://bayesian.org/node/add/conference-endorsement>. The Program Council will promptly review all requests submitted by July 6, 2016 and will reply with a decision by July 11, 2016 so that workshop organizers can include the ISBA endorsement in their proposal. Inquiries can be directed to program-council@bayesian.org or hans@stat.osu.edu.

Meeting Sponsorships and Co-sponsorships: As announced in email message to the membership in May, the May 30th, 2016 deadline for requesting sponsorship or co-sponsorship of meetings and workshops to be held in 2017 has been extended to June 30th, 2016. Information on how to submit a request can be found at <https://bayesian.org/meetings/planning>. Requests for non-monetary endorsement of events will be entertained continually throughout the year (see <https://bayesian.org/meetings/planning-endorsed>). Inquiries can be directed to program-council@bayesian.org or hans@stat.osu.edu.

Upcoming ISBA Events: We would like to highlight the following upcoming meeting that is being co-sponsored by ISBA:

The 10th ICSA International Conference on Global Growth of Modern Statistics in the 21st Century <http://www.math.sjtu.edu.cn/conference/2016icsa/Default.aspx>, December 19-22, 2016, Shanghai, China.

UPDATE FROM BA

From the BA Editor
- Bruno Sansó -
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This is the eleventh year we publish Bayesian Analysis. In addition, this year we published our 1,000-th paper. Those are two remarkable milestones. Very special thanks go to the funding editor in chief, Rob Kass, as well as all the former editors in chief: Brad Carlin, Herbie Lee and Marina Vannucci. A particular recognition goes to Pantelis Vlachos for creating and handling our original online submission system. That home-made system served as well for many years, until we switched to EJMS and Project-Euclid. It was a fundamental piece of the idea of having a free access journal.

Special Awards: In celebration of these achievements, a committee composed of the previous EiCs and myself decided to honor the most influential paper of the decade and the most promising paper of the last five years, among the

papers published in BA. The distinctions went, respectively, to the paper “The Case for Objective Bayesian Analysis”, by J.O. Berger, and the paper “The Bayesian Elastic Net”, by N. Lin and Q. Li. Thanks to the sponsorship of ISBA, BA awarded a plaque during the closing ceremony of the ISBA 2016 meeting in Sardinia.

2016 Lindley Prize: During the above mentioned ceremony, ISBA awarded the 2016 Lindley Prize to the paper “Posterior Belief Assessment: Extracting Meaningful Subjective Judgments with Bayesian Analyses of Complex Statistical Models”, by D. Williamson and M. Goldstein. This work was published as part of the special issue of BA dedicated to the papers presented at the ISBA 2014 in Cancún, published in December 2015.

The September issue of the journal is available online available at <https://projecteuclid.org/euclid.ba>. There are already seven papers in the issue. It will completed with the ISBA2016 meeting discussion paper “Ef-

efficient Metropolis-Hastings Proposal Mechanisms for Bayesian Regression Tree Models”, by Pratola, featuring a discussion by Gramacy and Hans.

On a final note, submissions for the proceedings of ISBA 2016 are open until August 31, 2016.

CONFERENCE REPORTS

BAYESM

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The 3rd edition of the Bayesian Young Statisticians Meeting, BAYSM 2016, took place in Florence, Italy on June 19 - 21, following the ISBA World Meeting in Sardinia. Over 70 young and junior Bayesians participated, with high quality oral presentations and posters. The program was completed by 4 plenary speakers: Fabrizia Mealli, Peter Müller, Steven Scott and Marina Vannucci; 1 keynote speaker: Alessandra Guglielmi; and 5 discussants: Daniela Cocchi, Emanuela Dreassi, Brunero Liseo, Antonio Pievatolo and Fabrizio Ruggeri who provided invaluable advice and insights. The award winners were: For the best presentation in the Theory and Methodology category, Annalisa Cadonna for her work *Bayesian mixture modeling for multiple spectral densities*, a

joint work with Raquel Prado and Athanasios Kottas. For the best presentation in the Applications category, Alison Parton for her work *Bayesian inference for continuous time animal movement based on steps and turns*, a joint work with Paul Blackwell and Anna Skarin. For the best poster, Carmen Minuesa for her work *Bayesian estimation on controlled branching processes: robustness via disparities*, a joint work with Miguel González and Inés del Puerto. Last but not least, a special mention was awarded to Lea Jakob and Hannes Jarke for their poster *The science behind the magic: the relation of Harry Potter "Sorting Hat Quiz" to measures of values and personality - a Bayesian analysis*, in collaboration with Eduardo Garcia-Garzon.

For more information on past events visit <http://baysm.org>, where pictures from Florence and information on the next edition of BAYSM will soon be available.



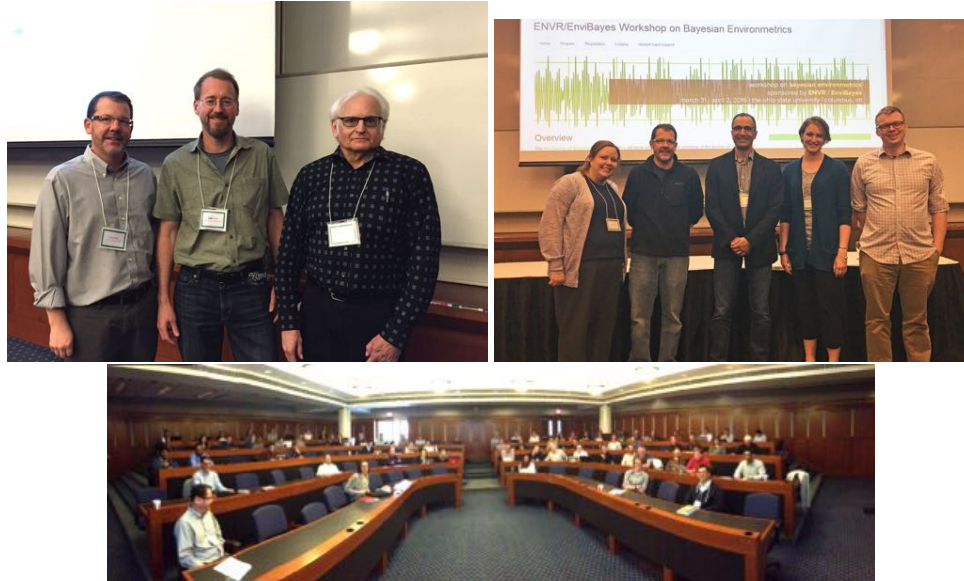


Figure 1: Top Left: (from right) Mark Berliner, Andy Royle, Chris Wikle; Top Right: The organizers (from right): Peter Craigmile, Candace Berrett, Bruno Sansó, Chris Wikle, Catherine Calder; Bottom: The main workshop room.

EnviBayes
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The Workshop on Bayesian Environmetrics served as the biennial workshop of the Section on Statistics and the Environment (ENVR) of the American Statistical Association and the first meeting of the new Section on Environmental Sciences (EnviBayes) of ISBA. EnviBayes, in coordination with the ENVR jointly hosted the workshop, which honored Mark Berliner for his contributions to Bayesian hierarchical modeling for physical and environmental systems. The meeting was held at The Ohio State University in Columbus, Ohio from March 31 - April 2, 2016.

The workshop began with a half-day short course on Dynamic Space-Time Modeling taught by Chris Wikle. The technical program was a day and a half and featured four plenary sessions, each with three talks, and one special session on Physical Statistical Modeling honoring Mark Berliner. All presentations were given by leading researchers in the field, including EnviBayes members Sudipto Banerjee, Jenny Brynjarsdottir, Matthew Heaton, Matthias Katzfuss, and Jonathan Stroud. Talks in the special session were given by Andy Royle, Ralph Milliff, and Jim Berger. The workshop also featured a panel

discussion on the future of publishing in environmental statistics. Distinguished panel members Montserrat Fuentes, Jennifer Hoeting, Bruno Sansó, and Andrew Lawson discussed topics such as reproducibility in research, best practices in peer reviewing, and upcoming changes to major journals. On the evening of April 1, a banquet was held in honor of Mark Berliner with tributes given by Jim Berger, Chris Wikle, Steve MacEachern, Doug Nychka, and Christopher Hadad.

The meeting was attended by a diverse collection of participants from academia, government, and industry, with a large number of students and junior researchers in attendance. There was a lively poster session with 25 presenters, including many undergraduate and graduate students coming from across the US and the UK.

Financial and other support for the workshop was provided by ENVR, EnviBayes, STATMOS, and OSU's Department of Statistics and Mathematical Biosciences Institute. Members of the organizing committee were Candace Berrett, Kate Calder (Chair), Peter Craigmile, Doug Nychka, Bruno Sansó, and Chris Wikle. Emily Kang (ENVR Treasurer) and Rick Peterson (ASA) provided invaluable assistance with financial issues.

The full program and abstracts can be found at <http://community.amstat.org/envr/events/bayesenvr/bayesenvr-program>.

NEWS FROM THE WORLD

Lindley Prize Announcement

The Prize Committee of ISBA is pleased to announce the 2016 Lindley Prize. The 2016 Lindley Prize will be awarded for innovative research in Bayesian statistics that is accepted for publication in a special issue of Bayesian Analysis for papers from the ISBA 2016 World Meeting in Sardinia, Italy. Please indicate that your paper is being submitted for consideration for the 2016 Lindley Prize. Papers from any presenter (invited or contributed, oral or poster) may be submitted. The prize includes a check for \$1000 and a plaque with the winner(s) announced at the ISBA World Meeting in 2018.

Submissions should be made electronically by 31 August at <https://projecteuclid.org/authors/euclid.ba> and should include the identification number of the session in which the work was presented. Authors should prepare their manuscripts using the BA macros.

Followup Policy: all papers presented at ISBA 2016 are eligible for the Lindley Prize provided that they have not already been published in Bayesian Analysis i.e., assigned specific pages in a specific volume.

It is the responsibility of the author(s) to inform the Editor-in-Chief of Bayesian Analysis that they want their work considered for the Lindley Prize. In particular, the authors must supply the identification number for the session in which their work was presented at ISBA 2016 prior to publication.

For details on the Lindley Prize, including names of past winners, eligibility, and submission information, please visit <http://www.bayesian.org/awards/LindleyPrize.html>.

Booking.com competition

This year, Booking.com and ISBA join forces to organize a competition using Booking.com data. Booking.com is the leading online travel agent, with almost a million active properties and over a million reservations each day. The data will contain about 1.5 million rows of call data, with information on the call itself, the agent who handled the call, and the reservation related to the

call. The goal of the competition is to use this data to analyze handling time data from Booking.com's customer service department. There will be three different tracks.

- Prediction: How well can you predict handling time into the future
- Inference: What drives the handling times
- Other: If you have any model, technique, idea that doesn't fit in one of the above mentioned topics.

You will be able to register starting from the middle of August, and the data will be released the 1st of September. After that you will have 2 months to work on your solution. You are allowed to work in teams, and each track will have one winner. On top of that, we will select an overall winner that is then invited to the Booking.com headquarters in Amsterdam to participate in a hackathon to further develop their ideas. Booking.com will provide travel arrangements for at most three people.

You can pre-register for the conference by leaving your contact information at <http://www.booking-isba-competiton.tk>. We will then keep you up to date about any news about the competition.

If you have any further questions, please mail booking.isba.competition@gmail.com. Please note that the competition is only open to members of ISBA.

Meetings and conferences

Intractable Likelihood (i-like) 2016, Lancaster University, Lancaster, UK. June 22-24, 2016.

The fourth annual workshop on intractable likelihood, i-like2016, will cover the challenges of applying likelihood and Bayesian methods for complex models/big data, with a particular focus on applications in genetics, epidemiology and networks. For full details, including reregistration information, please see <http://www.lancaster.ac.uk/ilike2016/>.

Workshop on Causation: Foundation to Application, Jersey City, NJ. June 29, 2016.

Causality is central to how we view and react to the world around us, to our decision making, and to the advancement of science. Causal inference in statistics and machine learning has advanced rapidly in the last 20 years, leading to a plethora of new methods, both for causal structure learning and for making causal predictions (i.e., predicting what happens under interventions).

This one-day workshop will focus on the foundations of causal inference on the one hand, and practical applications on the other. This integration of the boundaries of the field provides a basis for fruitful discussion among researchers who do not usually have offices on the same corridor.

Please see the conference website for the details: <http://people.hss.caltech.edu/~fde/UAI2016WS/>

Retrospective Monte Carlo Workshop, University of Warwick, Coventry, UK. July 7-8, 2016.

This workshop will focus on Monte Carlo methods which aim to exploit algorithmic design (in particular, the ordering of the steps in Monte Carlo algorithms) to address new (classically intractable) classes of statistical models. We envisage the topics in “Retrospective Monte Carlo” to cover Exact Simulation, Bernoulli Factory, Algorithmic Design for Big Data and Epsilon Strong Simulation. The workshop will be held over 2 full days, comprising approximately 10 talks of one hour duration with a 30 min coffee break after each, a poster session and a conference dinner

(www.warwick.ac.uk/rmc2016).

2016 BU-Keio Workshop, Boston University, MA. August 15-19, 2016.

This year’s Boston University-Keio University Workshop will focus on probability and statistics. The registration is now open. There will be a mix of talks by senior faculty, postdocs and advanced graduate students on current research trends. All talks are meant to be accessible to advanced graduate students. Partial funding is available for postdocs and graduate students at US institutions outside the Boston area. Women and underrepresented minorities are encouraged to apply for funding. For information on the workshop and funding, please visit math.bu.edu/keio2016.

Summer School on Impact Evaluation Methodologies for Public Health and Development Policies, Florence, Italy. September 12-15, 2016.

The 2nd edition of ARCO’s Summer School on Impact Evaluation Methodologies for Global Development Projects and Public Health (<http://www.arcolab.org/2957-2/>). Plenary sessions and workshops are scheduled to provide attendees with both theoretical and practical knowledge. Participants can choose between two parallel streams: 1) Global Development Economics & Policy; and 2) Public Health & Epidemiology.

Lectures will be held by Prof. D. Rubin (Harvard University), Prof. F. Mealli (University of Florence) and the Deputy Director of J-PAL Europe, I. Bencheick.

2016 ISBA AWARDS

As well as these awards, see the BA editor’s section for the Lindley Prize, and two special awards celebrating 1000 papers/10 years of Bayesian Analysis.

De Groot and Mitchell Prize

De Groot Prize: **Bayesian Data Analysis, third edition**, by A. Gelman, J. Carlin, H. Stern, D. Dunson, A. Vehtari, and D. Rubin. In recognition of an influential contribution to genuine application of Bayesian Statistics and of its wide impact on the Bayesian community and on many other dis-

ciplines.

Mitchell Prize: **MAD Bayes with Tumor Heterogeneity–Feature Allocation with Exponential Family Sampling**. Y. Xu, P. Muller, Y. Yuan, K. Gulukota, and Y. Ji. 2015, *JASA* 110(510):503-514. The paper develops a novel nonparametric Bayesian feature allocation model to decode tumor heterogeneity. The method provides a decomposition of a highly heterogeneous tumor cell population into homogeneous subpopulations. This is critical to precise cancer prognosis and personalized medicine. The proposed approach is scalable, easy to implement and ben-

efits from the flexibility of Bayesian nonparametric models. The paper is a great example of how Bayesian methods can be used to solve important applied problems

Lifetime Members' Junior Researcher Awards

Luke Bornn, for his distinctive contributions in spatial statistics, Bayesian statistics, Approximate Bayes inference, and Monte Carlo methods. In addition, his Bayesian models for analyzing basketball data and assessing the quality of individual players have received major attention by the US media, showcasing the usefulness of Bayesian models in sports analytics

Tamara Broderick, for her distinctive work on the characterization of exchangeability in feature allocation, and the study of the stick-breaking properties of the beta process. She has also been recommended for her service record in the Bayesian community, by promoting ties with the machine learning community and being a major promoter of the recent ISBA@NIPS initiative.

Travel Awards

New Researchers' Travel Awards

Botond Szabo For his early significant and foundational contributions to frequentist optimality theory for nonparametric Bayes procedures, including empirical Bayes estimation of hyper-parameters and the performance of nonparametric credible sets

Jeff Miller or his work on clustering properties of commonly used Bayesian nonparametric models, and his study of the robustness of Bayesian inferences to model misspecification.

Pilar Iglesias Travel Awards

Minerva Mukhopadhyay (India) For her original work on Bayesian variable selection

Kelly Cristina Mota Gonçalves (Brazil) For her work on clustered and sparse populations when the data are obtained from an adaptive cluster sampling.

Savage Awards

Applied Methodology, Honorable Mention: **Linlin Zhang**, Rice University. Zhang's thesis tackles the important scientific problem of analyzing and interpreting experimental fMRI data. fMRI measures a delayed response to a stimulus, which activates certain volume elements (voxels) in the

brain. The goal is to identify which voxels are activated, and how these depend on the stimulus applied. The data-structure is complex, involving, for each subject: stimulus-response relationships, multiple time-series, spatial correlation, and clustering. A strength of this thesis is its careful attention to modelling this structure, combining realism and tractability. State-of-the-art tools, carefully chosen, justified and applied, include: discrete wavelet transforms, Markov random fields, spike-and-slab model selection priors, and Dirichlet clustering processes. Bayesian computation uses MCMC and variational analysis. Numerous applications to simulated and real fMRI data show excellent results.

Applied Methodology, Winner: **Maria De Yoreo**, UCSC & Duke.

De Yoreo's thesis proposes a model for analysing nonparametric regression problems with stochastic continuous covariates and binary or ordinal responses. The approach is not motivated by a specific problem but abstracts out the essential features of several classes of problem. The response is treated as a discretized latent variable so that a distribution for the response given the explanatory variables can be derived. The joint distribution is modelled as a mixture of multivariate Gaussians, the mixing being supplied by a Dirichlet Process representation. Bayesian analysis is effected by truncating the infinite mixture and using Gibbs sampling. The model is extended to repeated measurements over time by using dependent Dirichlet processes, where the atoms are held constant. The methodology is illustrated by several detailed analyses of substantive problems. Overall, this thesis opens a new way to relax the linearity of the regression function so that extensions to spatial and multivariate ordinal/continuous settings can be analysed.

Theory and Methods, Honorable Mention: **Botond Szabó**, Eindhoven University of Technology & CREST-Paris. This thesis considers the asymptotic behavior of adaptive nonparametric Bayesian posterior distributions in the signal-in-white-noise setting, including inverse problems. One major contribution of the thesis is the derivation of convergence rates for several types of empirical Bayes procedures in this setting. A second major contribution is one of the first rigorous studies of the frequentist asymptotic behaviour of nonparametric Bayesian credible sets. Frequentist coverage is established in white noise for several such sets under various adaptive schemes and self-similarity conditions. This leads to a deeper understanding

of uncertainty quantification of Bayes nonparametric procedures. Members of the international scientific community acknowledge the fundamental value of his scientific construct as the basis for future developments of Bayes nonparametrics.

Theory and Methods, Winner: Tamara Broderick, UC Berkeley & MIT. Broderick's thesis offers an elegant treatment of the problem of feature allocation, a generalized form of the problem of clustering where the clusters are no longer exclusive but instead are defined in terms of a notion of features. So, each data point belongs to several classes whereas in clustering each data point belongs to only one class. Her characterization of exchangeable feature probability functions allows for a natural Bayesian nonparametric modeling framework of random features, in which the number of features are not known a priori. Her work also provides insightful reinterpretations of existing methods. The author has developed a rich class of combinatorial stochastic processes applicable for feature selection, and the theory developed is practical for large data sets.

Zellner Medals

The Zellner Medal honors Arnold Zellner, one of the founders of ISBA and ISBA's first president. The purpose of the Zellner Medal is to recognize ISBA members who have rendered exceptional and distinguished service to ISBA over an extended period of time, and whose contributions have had an impact on the society beyond the time of his or her incumbency.

The Zellner Medal will be given every even year to, at most, two recipients, selected by a Committee consisting of three former ISBA Presidents, not serving ISBA as current officers. The recipients of the 2016 Zellner Medal are:

Merlise Clyde, in view of her outstanding contributions, sustained impact and legacy in ISBA leadership; and in recognition of her career impact in development of Bayesian analysis as a research, educational and professional leader

Stephen Fienberg, reflecting his leading roles in the formation and development of ISBA, and sustained impact as ambassador for the society and profession; and in recognition of his premier contributions and broad-ranging impact on the development of Bayesian analysis

2016 ISBA Fellows

Wesley Johnson, for fundamental research

contributions to Bayesian predictive modelling, Bayesian regression through informative prior elicitation and diagnostics, Bayesian nonparametrics, diagnostic screening tests, and biostatistical and veterinary applications; for exceptional mentoring, advising and teaching; and for longstanding service to the Bayesian community.

Adrian F. M. Smith, for his research contributions to hierarchical modelling, Bayesian Computations and applications, and for his leadership, first of Bayesians, later of the mathematical sciences more generally, and then of government and universities. *Also made a lifetime member.*

Alan Gelfand, for the development of Markov chain Monte Carlo methodology, and for sustained contributions to Bayesian modeling in environmental and spatial statistics.

Bruno Sansó, for the fundamental contributions in the application of Bayesian Methods in Spatial Statistics and Environmental Statistics, winning the 2009 Mitchell prize with an analysis of sea surface temperatures. He has rendered important services to the Bayesian community as treasurer of ISBA (2005-2007), member of the editorial board of the ISBA Bulletin and member of the nominating and publication committees. He was the chair of ISBA Section on Environmental Sciences (2015) and is the current Editor of *Bayesian Analysis*. He was also member of the local organizing committee of the 2014 World ISBA Meeting.

Ming-Hui Chen, for his path breaking research contributions in Bayesian computation, Bayesian modeling, Bayesian biostatistics and outstanding service to ISBA.

Donald A. Berry, for his outstanding contributions to society by spearheading the use of the Bayesian approach to optimize clinical trials providing early access of safe and effective therapies for patients and thereby improving public health.

Xiao-Li Meng, for outstanding contributions to statistical theory and methods, for service to the profession, and for exemplary training of future generations of statisticians.

Subhashis Ghoshal, for his deep and groundbreaking research on asymptotic properties of Bayesian procedures, his generous and dedicated students' mentoring and the remarkable services to our profession.

David Dunson, for outstanding and diverse contributions to Bayesian nonparametrics, and for sustained work in biostatistics.

Malay Ghosh, for outstanding contributions to Bayesian Theory and its applications, in particu-

lar in areas such as objective Bayesian inference, hierarchical and empirical Bayesian methods in small area estimation and case-control studies, and most recently in Bayesian multiple testing and variable selection.

Brad Carlin, for outstanding early contributions to Markov chain Monte Carlo algorithms and convergence acceleration, for development of methods for spatiotemporally correlated data, especially in the environmental and health sciences, for research in Bayesian adaptive clinical trials and meta-analysis, for mentoring of junior statisticians, for editorial service to the profession as editor-in-chief of *Bayesian Analysis*, for administrative leadership, and for work in conference organization, especially as co-leader of the 'MCM-Ski' IMS-ISBA joint international conference series.

Sonia Petrone, for influential contributions to Bayesian Nonparametrics and outstanding service to the profession and Bayesian community.

Antonietta Mira, for outstanding contributions to probability theory and stochastic processes, especially regarding novel methods and theoretical support for Markov chain Monte Carlo algorithms, for mentoring of junior statisticians, for editorial service to the profession, and for her longstanding role as the primary force behind the series of joint international meetings of ISBA and the IMS (Institute of Mathematical Statistics), colloquially known as MCMSki.

Antonio Lijoi, for groundbreaking research in Bayesian Nonparametrics and service to profession.

Peter Mueller, for outstanding work in biomedical studies, Bayesian nonparametrics, optimal design; for exemplar and generous mentoring; and for his leading role in Bayesian Statistics and in the Bayesian community.

Philip Dawid, for his research contributions to conditional independence and its applications, his work on the marginalization paradox and prequential analysis and Bayesian networks, among many other achievements. *Also made a lifetime member.*

Anthony O'Hagan, for his contributions to practical elicitation in many contexts, his deep research on Bayesian robustness, and uncertainty in computer codes, and his applied work in health economics.

Peter Green, for his numerous contributions to Bayesian methodology and the leadership role he has played in the area and the Statistical Community more generally. His scientific work has significantly broadened the range of applications to which Bayesian methodology can be applied routinely. His service to the community includes president of the International Society of Bayesian Analysis, the Royal Statistical Society but also editor or associate editor for all the major statistical journals.

STUDENTS' CORNER

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In this second issue, I introduce a new academic researcher Chris Glynn. He finished his PhD in Statistical Science from Duke University in this spring. He will begin a postdoctoral position with Prof. Emily Fox at the University of Washington. In addition to introducing new researchers, this Students' Corner also features dissertation abstracts. Issuing abstracts is a good opportunity to find collaborators. If you are willing to, don't hesitate to send your dissertation abstract to my email address.

Student Voices

Chris Glynn
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Hello bulletin readers, and thank you for the opportunity to introduce myself. My name is Chris Glynn, and I recently finished my PhD in Statistical Science at Duke University. I am very fortunate to have been a part of the Duke community these past four years.

Prior to studying at Duke, I earned a bachelors degree in electrical and computer engineering from the University of New Hampshire and a masters degree in mathematical finance from

Boston University. My prior academic training fostered a research interest in complex dynamical systems. In engineering, data is often collected from sensors over time. In finance, asset prices evolve with time. I am still most excited by problems with time-varying data and an element of sequential prediction.

Questions that arose from professional experience prompted me to pursue a PhD. As a research associate at the Federal Reserve Bank of Boston, I worked on a team of economists, bank examiners, and policy makers from around the Federal Reserve system to help the largest banks in the U.S. implement an international banking agreement called Basel II. Seeing the mechanism by which defaulted loans at one bank spread losses to other financial institutions forced me to ask questions about how to dynamically manage risk and model interdependence for these institutions. Rather than pursue a PhD in economics or finance, I felt that Bayesian networks and models for time-varying covariance matrices offered a more exciting and personally rewarding set of tools to approach that problem. I wanted to get a PhD in statistics to develop tools for policy makers and decision makers to fix a damaged banking system.

Of course, the things that you are excited about on the first day of graduate school are rarely the things you write your dissertation about. Though I remain interested in the bank network problem, my interests were refined as I matured as a student, met new people, and developed new collab-

orations. I was fortunate to learn dynamic modeling and Bayesian forecasting from Professor Mike West. In my first year at Duke, I worked with Professor Sayan Mukherjee and collaborators in mathematics and evolutionary anthropology to develop tools for visualizing and aligning large collections of 3D scans of primate bones. I also worked with Professor David Banks and collaborators at Sciome, LLC, a startup in the Research Triangle of North Carolina, on a topic model for time-stamped text documents that allows for the inclusion of document-specific covariates. Existing dynamic topic models largely ignore document metadata.

Throughout all of these collaborations, I worked closely with my PhD adviser, Professor Surya Tokdar. I feel very fortunate to have worked with Surya. He gave me the freedom to work on research that I was personally excited about. At almost every meeting, Surya helped me to transform my most recent research challenge into a deeper statistical insight. Surya was also a tremendous mentor as I searched for academic jobs.

In the fall of 2016, I will begin a postdoctoral position with Professor Emily Fox at the University of Washington. In the fall of 2017, I will begin as an Assistant Professor of Decision Sciences at the Peter T. Paul College of Business and Economics at the University of New Hampshire. As an alumnus of UNH and native of New Hampshire, I am excited to return home and contribute to the Bayesian community in New England.

INTERVIEW

MANUEL MENDOZA

by Eduardo Gutiérrez-Peña

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(translated by Isadora Antoniano)

Manuel Mendoza is currently a Professor at the Department of Statistics at the Instituto Tecnológico Autónomo de México (ITAM), in Mexico City. He previously occupied various faculty positions at the Universidad Nacional Autónoma de México (UNAM), from which he graduated. He is widely recognized as an excellent teacher and has participated in the organization of numerous events. He also was editor of the ISBA Bulletin (2010-2012) and was one of the first Bayesians in

Mexico, contributing greatly to the development of the discipline in his country.

Beyond academics, he has actively promoted the correct use of Statistics for solving problems of social interest.

In April, this year, a group of friends and colleagues organized an event to celebrate Manuel's 60th birthday in recognition of his professional trajectory.

EG. How did your interest for Bayesian Statistics begin?

MM. During my undergraduate studies I had diverse interests, ranging from Analysis and Alge-

bra on one side, to Computer Science, Probability and Statistics, on the other. In the end, I shifted towards the second group, in great part because my first Statistics Professor (Gustavo Valencia) invited me to work as his teaching assistant. At the time, all of the Statistics courses being taught at the Science Faculty, where I studied, were 100% frequentist. In any case, once on track, I began my masters in Statistics and Operational Research and was invited by Gustavo to take part in an informal seminar with him, another professor (Francisco Aranda) and a researcher who had been his teacher (Ignacio Méndez). The subject was Bayesian Statistics, a new approach to inference of which they knew only some general ideas.

This happened in 1977 and was enough to raise my interest in the Bayesian approach to Statistics. Little did I suspect such interest would last for so many years!

EG. *Where did you study?*

MM. I simultaneously followed two undergraduate courses at the Science Faculty, in UNAM. I started with Actuarial Sciences and then enrolled in Mathematics. I graduated only from the first, since by then I had enrolled in the Masters program at the same university. After finishing the Masters courses I worked for some time at the Statistics Lab of the Science Faculty where, together with Gustavo and Francisco, I helped people from various UNAM research centers perform statistical data analyses.

The idea of a PhD project was born from the seminar with Gustavo, Francisco and Ignacio. At one of the meetings, Ignacio mentioned a young Spanish Bayesian statistician he had met at a congress and the possibility of inviting him to Mexico. It remained just an idea for a couple of years but finally, in 1979, Gustavo established the contact with this Spanish colleague, who turned out to be José-Miguel Bernardo. He was invited to visit UNAM and, in 1980, he gave an intensive one-month course on Bayesian Statistics. I decided I wanted to focus my PhD studies in the area of Bayesian Statistics, possibly under José-Miguel's supervision. He was very positive and we stayed in touch for a few months, exploring the possibility of my coming to the University of Valencia to work with him. Unfortunately, this was not possible because at the time there was no agreement between Spain and Mexico to mutually recognize academic degrees, so I enrolled in the PhD program in Mathematics at UNAM.

After finishing the courses and thanks to an ulterior arrangement, I went to Valencia to work on my thesis, which I finally presented in Mexico in 1987. In this way, I obtained my PhD from UNAM with a thesis supervised by José-Miguel.

EG. *When you came back to Mexico, what was the situation regarding Bayesian Statistics in the country?*

MM. Statistics in general was only developing in Mexico. For reference, I can mention that in 1970 there were only four people in Mexico with a PhD in Statistics. So, when I obtained my degree in 1987, it was not surprising that only two people held a PhD in Bayesian Statistics or some related area. These were Gustavo himself and Enrique de Alba, who had returned from the United States a few years earlier.

At any rate, the Bayesian paradigm was still practically unknown in Mexico and it did not figure among the research interests of the small and developing statistical community in the country. There were no regular courses on Bayesian Statistics in any Mexican university. This environment offered a unique opportunity to accompany my research and applications with an effort to popularize Bayesian Statistics and open the door for the new generations.

EG. *What is your view on the development of Bayesian Statistics since those days?*

MM. In the international scene, I have witnessed an incredible and stimulating process which has marked the history of contemporary Statistics. The first Bayesian conference I attended, before beginning my PhD, was the Second Valencia International Meeting on Bayesian Statistics organized by José-Miguel in 1983. It brought together the majority of specialists of the discipline at the time, with the participation of around 130 people, including many students like myself. Observing this tiny group of experts... being able to listen to them in person, was very exciting. Almost as much as running into the authors of the articles and books I was studying, walking in the hallways. It has been a privilege watching this scientific community grow in size and influence; recognizing the key contributions that determined the route our discipline would follow, such as the introduction of MCMC methods; in short, witnessing the impact that the Bayesian approach to Statistics has had in science and in society at large.

With regard to Mexico, at a different scale, the change has been equally extraordinary. The three Mexican Bayesians from 1987 have given way to dozens of specialists, including many generations of statisticians, and the rate of growth is still increasing! I believe that the Bayesian community is now firmly established in Mexico, keeping very active links with its international counterpart. For example, when in 1995 Enrique de Alba and I were in charge of the Third ISBA World Meeting, we had to enlist the support of some non-Bayesian colleagues as members of the organizing committee. Since those years, the Mexican Bayesian community has organized, among many other events, three editions of the Mexican Workshop on Bayesian Statistics, the Third International Workshop on Objective Bayesian Methodology, the Second Latin American Congress on Bayesian Statistics (COBAL II), as well as the 8th Workshop on Bayesian Nonparametrics and the 12th ISBA World Meeting. More importantly, some of the younger members of this community include statisticians with wide recognition in and outside the country. They have made important contributions in several areas and, in particular, the Bayesian nonparametrics group enjoys wide success. There are active Bayesians in several universities and research centres, representing an important sector of the still small but vigorous group of Mexican statisticians.

EG. You have been invited to quite a number of conferences in Brazil, Chile and Colombia. How has this interaction with the South American colleagues been?

MM. Fantastic! Mainly via the series of Valencia Meetings organized by José-Miguel in Spain, I have had the chance to meet some Latin American colleagues, particularly from Venezuela, Brazil and Chile. The group was small, as was the case for the Bayesian community in general, but I have always admired the quality of their work. Also, the affinity arising from our common origins gave place to a close friendship which has lasted through the years and has extended to the younger generations. I must admit, though, that the growth has been such that I no longer know all of the Latin American Bayesians, which is a positive sign.

Friendship naturally opened the door to exchange and collaboration. Thus, invitations came for me to visit the Brazilian and Chilean colleagues and, in reciprocity, throughout the years

we have had many visits from our friends in those countries. The idea of organizing the Congreso Bayesiano de América Latina (COBAL) –which will be celebrating its fifth edition in Mexico next year– was an initiative born from such collaboration. It was probably during a dinner at the 6th ISBA World Meeting in 2000, in Greece, that the group of Latin Americans gathered at the table decided to start this series of conferences. Many formed that group, but I remember with special clarity Pilar (Iglesias), Rosangela (Loschi), Dani (Gamerman) and you, of course.

Regarding the relationship with our Latin American colleagues, I wish to mention that, since my first visit, possibly during the III Encontro Brasileiro de Estatística Bayesiana in 1995, I was awed by the quality and size of the Bayesian community in Brazil. It is, without a doubt, a power in our region and an example to follow. On the other hand, in Chile I met a much smaller group but with an impressive capacity for work, which soon reached the international fame for which it is now known. Another exceptional case is that of Venezuela, where Luis Raul (Pericchi) played a fundamental role, preparing extraordinary researchers who, unfortunately, have had to leave their country.

In your question, you mentioned also Colombia. I have visited the country on many occasions, invited by dear colleagues who –strangely– are not Bayesians but have promoted Bayesian Statistics in various ways. Thus, in 1996 I had the privilege to teach a short course on decision theory during the VII Simposio de Estadística, where courses were offered also by José-Miguel Bernardo and Adrian Smith, among others. The theme of Bayesian courses, both theory and applications, has been a constant in my visits to Colombia. The fact is that, with great satisfaction of those of us supporting COBAL, in 2015 the fourth edition of the conference was organized in Colombia and there is reason to expect an increase in the number of Colombian Bayesians in the near future.

EG. Besides your work in academia, you have had the chance to work as a consultant in the public sector. What can you tell us about that experience? Have you made use of Bayesian methods in such projects?

MM. Indeed, I have been invited on several occasions to collaborate with different government agencies. The most relevant cases are the

Comisión Nacional de Seguros y Fianzas (CNSF), and the Instituto Nacional Electoral (INE). The first is a Mexican government agency in charge of supervising the insurance companies; the second is an autonomous body in charge of organizing the Presidential and Congressional elections.

In 1999 I had the opportunity to participate in different projects within the CNSF but the most relevant one was probably the production of the mortality table that life-insurance companies must use to determine the reserves required to meet the payment of claims. In those days, a considerable literature was available on the use of statistical models for the creation of these tables but, from the Bayesian point of view, the articles were scarce. It was very interesting to develop a proposal for a simple model and a Bayesian analysis leading to the required table. It was interesting from a technical point of view, documented in an internal communication, but perhaps more interesting was presenting the proposal to the CNSF officials first and then to the actuaries working for the insurance companies.

It took a great amount of perseverance, uncountable seminars, and a long series of meetings in which experienced actuaries presented their points of view against the proposal. But, in the end, the resistance against the statistical treatment of the problem was broken and the proposal was not only accepted, but enthusiastically embraced by both government officials and actuarial experts, in a way that can only be expected from colleagues with a high level of intellectual honesty.

In the case of the INE, I have had the opportunity to collaborate with the Institute in three elections. I have participated in the evaluation of the quality of the electoral roll but the most exciting project has been, without a doubt, the development of a mechanism for producing a quick count which would allow the Institute to announce preliminary results on the night of the election. The basic problem is simple, however, a robust model is required which allows fast and efficient inference. In our case, we followed a strategy based on the idea of super-populations. We used a reference prior, which allowed us to efficiently analyze the information available in each partial data base without modifying the sampling scheme. Our results were very precise and accurate. Besides raising an interest in the subject of finite populations, this project has made it possible for senior officials of the Electoral Institute to know and value the use Bayesian statistics for quick counts.

Overall, I have truly had a chance to put statistical theory to the test in the context of some projects with a high degree of social exposure. In all cases, I have used the tools provided by Bayesian analysis and, even though I did not need any confirmation, it is always satisfying to arrive at the end of a project and think: It works! If you can convince some people along the way the result is, in my opinion, unbeatable.

EG. Looking back on your academic career, what would you say gives you the greatest satisfaction?

MM. I greatly enjoy all aspects of my academic life, teaching, research, helping to create public awareness of science. In particular, I like to think that throughout the years I have been able to motivate my students to embrace Statistics as their professional destination and, more specifically, to specialize in Bayesian Statistics during their post-graduate studies.

On the other hand, having contributed –in whatever measure– to make an incipient discipline acquire relevance and recognition in our country leaves a good taste in my mouth, so to speak.

EG. What would you tell the young students who see Bayesian Statistics as an option for academic and/or professional development?

MM. The discipline has evolved and, fortunately for us, has gone from a marginal Statistical current to a powerful alternative for analysis and inference, occupying more and more spaces and enjoying increasing recognition. In great part, this change is due to the new simulation methods which make it possible to work with problems that seemed intractable not so long ago, and not only from the Bayesian perspective. It seems to me that, with such evolution, the interest of young students and users of statistical methods has shifted –at least in part– from the axiomatic nature of the discipline, from the foundations, to the applications and to the use of the powerful computational tools that often produce spectacular results.

I suppose there must be many examples and anecdotes about what can happen when the foundations are forgotten. I remember a PhD student –a very competent mathematician– who was producing very interesting results regarding a rather sophisticated family of models and who was convinced that the prior distribution was an ini-



Figure 2: MM (far right) with colleagues (from left) Carlos Daniel Paulino, Rosangela Loschi, and Marcia Branco.

tial point for his simulations and that he should choose it carefully with the sole purpose of accelerating his simulations. In the concrete application, the results he was obtaining appeared quite reasonable so it did not seem worth questioning if he was really performing a Bayesian analysis.

My suggestion for students and young researchers is to take advantage of the full potential offered by the infrastructure of Bayesian Statis-

tics (which will surely continue to improve, with more efficient tools), but to not neglect the fundamentals of our discipline, which constitute the basis on which applications are built.

EG. Thank you very much, Manuel, for your time and comments.

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