

THE ISBA BULLETIN



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The official bulletin of the International Society for Bayesian Analysis

A MESSAGE FROM THE PRESIDENT

- Raquel Prado -
president@bayesian.org

Dear ISBA members, I hope you had a productive and enjoyable summer. As part of my summer activities I attended the Joint Statistical Meetings in Denver this past July/August. There were 21 sessions at JSM co-sponsored by ISBA, including 7 invited sessions, 10 topic contributed sessions and 4 contributed sessions. These sessions covered a huge variety of topics. I want to thank Robert Gramacy (this time in his role of SBSS Program Chair) and Mahlet Tadesse (ISBA) for working jointly to get the Bayesian-themed invited sessions into the JSM 2019 program. One of these ISBA sponsored sessions was the Savage Award session which I had the pleasure to attend. The session was well attended and the four talks were absolutely outstanding. Congratulations to Rajesh Ranganath (Theory & Methods Savage Award), Henry Scharf (Applied Methodology Savage Award), Andrew Holbrook (Theory & Methods Honorable Mention), and Tianjian Zhou (Applied Methodology Honorable Mention) (see picture of the awardees is on the next page)!. Speaking of awards, the 2018 Mitchell Prize was also presented at JSM to Abhra Sarkar, Jonathan Chabout, Joshua Jones Macopson, Erich Jarvis and David Dunson for their paper “Bayesian semi-parametric mixed effects Markov models with application to vocalization syntax,” published in the *Journal of the American Statistical Association*, 113:524, 1515-1527, 2018 (see picture of Abhra and David below). Congratulations to Abhra, Jonathan, Joshua, Erich and David!

At JSM I also attended the Committee of Presidents of Statistical Societies (COPSS) Friends Meeting, representing ISBA. During this meeting

each society presented a summary of their recent and future activities, initiatives and issues. We discussed several opportunities to collaborate. COPSS encouraged the friends societies, associations and JSM special partner members to provide ideas and feedback for the white paper report and grand challenges of “Statistics at a Crossroads: Challenges and Opportunities in the Data Science Era” (see <https://hub.ki/groups/statscrossroad>). I invite you to have a look at the website and provide your feedback/ideas individually or just get in touch with me.

Election season is coming up. The ISBA Nominating Committee (Nicolas Chopin, Michele Guindani, Rosangela Loschi, Veronika Rockova, Marina Vannucci and Anton Westveld) has been busy contacting members and finalizing the list of candidates for President-elect, Treasurer, and Board members.

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ISBA sections are also actively working on selecting their candidates. Details about the elections and further information about individual candidates can be found here: <https://bayesian.org/nominees/>. I am grateful and delighted that the following candidates are running for these officer positions:



(a) Savage awardees Andrew Holbrook, Henry Scharf, Rajesh Ranganath and Tianjian Zhou.



(b) Mitchell awardees David Dunson and Abhra Sarkar.

- Candidates for President-elect:
 - Ramsés Mena Chávez
 - Igor Pruenster
- Candidates for Treasurer:
 - Marian Farah
 - Lorenzo Trippa
- Candidates for ISBA Board:
 - Francois Caron
 - Andrés Christen
 - Miguel De Carvalho
 - Adrian Dobra
 - Nial Friel
 - Laura Ventura
 - Helga Wagner
 - Xinyi Xu

Finally, I want to mention that the ISBA Professional Conduct Committee has recently discussed and approved some proposed changes to the Code of Conduct and related documents. These changes will soon be presented to the Board for approval. I will share with you the outcome of this process as soon as it is completed.

– Raquel Prado

FROM THE EDITOR

- Maria DeYoreo -
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With the September issue of the ISBA bulletin upon us, we know that summer vacations and conference travel season have come to a close, and school is back in session. I hope that everyone is rejuvenated and ready for a lovely and productive fall. The past three months saw a host of conferences with many ISBA members in attendance, including the Joint Statistical Meetings (JSM) in Denver, where I was lucky to see many Bayesians at the SBSS mixer. As always please reach out to me to submit conference highlights or news you think members should be aware of to appear in the December *ISBA Bulletin*. I also request that you think about someone who might be interested in serving as an Associate Editor for the *Bulletin*, and urge them to reach out to me with questions! I also would be happy to accept nominations and reach out to potential AEs myself. Thanks to all for considering, and I wish everyone well!

CALL FOR ASSOCIATE EDITORS

We are still in need of an Associate Editor to help compile the *News from the World* section! The primary role of this AE is to compile news from ISBA members, such as announcements of important awards members have received, solicit conference reports and announce upcoming conferences or meetings of interest to members, or share interesting things happening in the Bayesian community. Please contact mdeyoreo@rand.org if you are interested in serving as an AE for the *Bulletin*! I also ask readers to think about whether you know someone who might be a great candidate for this position, and please tell them to contact me to talk about this opportunity. This is a great opportunity to get more involved with ISBA by contributing to the society and staying up to date with what's happening in the community, and to meet more people within the Bayesian community. This is a great position for a graduate student or postdoc!

FROM THE PROGRAM COUNCIL

- Li Ma-
program-council@bayesian.org

The 2020 ISBA World Meeting will be held June 29-July 3, 2020 at Kunming, China, hosted by Yunnan University. Information about the meeting will be added to the conference website <http://www.isba2020worldmeeting.com> as it becomes available.

The Scientific Committee for ISBA 2020 has received proposals for Member Invited Sessions, and the results will be communicated to the session proposers in early October. A call for Contributed Talks and Posters is now open. The deadline for submitting a Contributed Talk is December 15, 2019, and the submission for contributed Posters will remain open until January 15, 2020. Please go to the conference website for the submission link.

The Scientific Committee is also conducting a survey on potential topics of interest from prospective Short Course attendees and soliciting Short Course proposals. You may use the ISBA 2020 Short Course Proposal and Interest Submission Form on the conference website to complete the survey and/or to submit short course proposals. The deadline for submitting the form has been extended to *October 15, 2019*.

Meeting Sponsorships and Co-sponsorships. If you are planning a meeting in 2020 and would

like to request financial sponsorship (or co-sponsorship) or non-financial endorsement from ISBA, please submit your requests to the program council at program-council@bayesian.org. Detailed information on how to submit a request for either sponsorship or endorsement can be found at <https://bayesian.org/events/request-sponsorshipendorsement/>.

Upcoming ISBA-sponsored/endorsed events

1. 2nd Symposium on Advances in Approximate Bayesian Inference (AABI), December 8, 2019, Vancouver, Canada.
2. BayesComp 20. January 8-10, 2020. Gainesville, Florida, USA.
3. 3rd Italian-French Statistics Seminar, January 2020, Milan, Italy.
4. The 5th EAC-ISBA Conference: A Satellite Meeting of the 2020 ISBA World Meeting in Celebrating James O Berger's 70th Birthday, June 26-27 2020, Da Li, China.
5. BAYSM 2020, June 26-27 2020, Kunming, China.
6. European Seminar on Bayesian Econometrics (ESOB) 2020, September 3-4, 2020, Madrid, Spain.

UPDATES FROM BA

From the BA Editor

- Michele Guindani-

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The September 2019 issue of BA is [online](#) and features 10 original contributions and the Discussion paper “[A Bayesian Conjugate Gradient Method](#)” by Jon Cockayne, Chris J. Oates, Ilse C.F. Ipsen, and Mark Girolami. In his invited discussion, Philipp Hennig (Max Planck Institute) provides important insights into the thread of research on probabilistic linear algebra methods, and the challenges faced for obtaining “active” and “passive” probabilistic solvers. The other invited discussion by Ethan Xingyuan Fang (Penn State) provides an interesting re-interpretation of the proposed method in a classical setting. Four thought-provoking contributed discussions enrich the manuscript further, together with the rejoinder from the authors.

A **new initiative** of Bayesian Analysis, the official journal of ISBA, is a series of Webinars on some interesting articles published in the Journal, including Discussion papers. The **first Webinar** will present the manuscript by Cockayne et al, and it will be held on Wednesday, **October 2nd, 2019 4:00 pm** British Standard Time. The Webinar times for other time zones can be checked [here](#). We have organized a form to register to the Webinar, which can be accessed by following the included [link](#). Information about the Webinar schedule and the channel will be sent to the email address provided in the form above. The first 90 registrants will be able to participate interactively via the Zoom Conference platform; additional registrants will be able to view the Webinar on a dedicated YouTube Channel.

The Discussion paper for the December issue of the journal is “Latent Nested Nonparametric Priors” by Federico Camerlenghi, David B. Dunson, Antonio Lijoi, Igor Prünster, and Abel Rodríguez. You can find the manuscript in the Advance publication section of the journal website or by following this [link](#). We welcome public contributions to the Discussion of the manuscript. The contributions should be no

more than two pages in length, using the **BA latex style**. The contribution should be submitted to the journal using the Electronic Journal Management System (EJMS) **submission page** before **October 15th, 2019**.

Finally, Jin Cao (SMU) has agreed to hold the position of Managing Editor of the journal from January 1st, 2020 to December 31st, 2022. She will help ensuring a smooth and fast reviewing process. I would like to personally thank Tony Pourmohamad (Genentech, Inc) for his valuable help and his dutiful commitment over the past three busy years. I thank Jin for taking up this important role in the journal.

j-ISBA

- Brenda Betancourt -

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The summer of conferences has come to an end and we are happy to say that it was a success for j-ISBA! In June, our session at the VI Latin American Meeting on Bayesian Statistics (VI COBAL) in Lima (Peru), presented the work of young researches Isabelle Beaudry (PUC, Chile), Kelly Cristina (UFRJ, Brazil), and Henrique Bolfarine (USP, Brazil). The conference was a great venue for junior researchers that included plenary talks from Catalina Vallejos (University of Edinburgh) and Mauricio Sadinle (University of Washington) as well as other sessions dedicated to the work of young Bayesians. I would like to highlight the outstanding work of the local conference organizers and the Pontifical Catholic University of Peru (PUCP) where the conference was hosted. Peru of course was an excellent conference location with exquisite cuisine and places like Machu Picchu to explore after an exciting Bayesian meeting!

Later in July, we were also present at JSM 2019 in Denver with a topic contributed session that included talks from Diana Cai (Princeton), Bianca Dumitrascu (Princeton), Lorenzo Masoero (MIT) and Zacharie Nault (University of Toronto). The session was well attended and the Section on Bayesian Statistical Science (SBSS) of the ASA organized a great mixer that was also a good opportunity for junior Bayesians to interact in a more informal setting.

Elections are coming soon and we are honored to have two candidates for each of the three soon-to-be vacant positions: Chair-Elect, Program Chair and Secretary. The nominees for the Chair-elect position are Roberta de Vito (Princeton University) and Tommaso Rigon (Bocconi University), for Program Chair the nominees are Aki Nishimura (University of California, Los Angeles) and Andrea Cremaschi (Oslo University Hospital), and finally Matteo Iacopini (Scuola Normale Superiore, Pisa) and Willem van den Boom (Yale-NUS College, Singapore) are the candidates for Secretary. We wish all of them good luck for the elections and encourage you to vote when the time comes. You can find their biography in the ISBA website: <https://bayesian.org/nominees/>.

Of course, j-ISBA is an open community and the work of the officers is often done jointly with the members. We are always happy to hear from our members of any opportunity to share experiences, having career-advice and interact. Don't be shy and participate in the j-ISBA life through our Facebook group, Twitter account or blog (<https://jisbablog.wordpress.com/>)!

ISBA AWARDS

The 2018 ISBA Awards were announced at JSM this year in Denver. The Prize Committee has received nominations for 2019, and the winners will be announced at the ISBA World Meeting in Kunming, China in 2020.

The Savage Award

The Savage Award, named in honor of Leonard J. “Jimmie” Savage, is bestowed each year to two outstanding doctoral dissertations in Bayesian econometrics and statistics, one each in Theory & Methods and Applied Methodology. The winners for 2018 were:

Theory and Methods

Rajesh Ranganath, Black Box Variational Inference: Scalable, Generic Bayesian Computation and its Applications. Princeton University; David Blei, advisor.

Andrew Holbrook (Honorable Mention), Geometric Bayes. University of California, Irvine; Babak Shahbaba, advisor.

Applied Methodology

Henry Scharf, Statistical Models for Dependent Trajectories With Applications to Animal Movement. Colorado State University; Mevin Hooten, advisor.

Tianjian Zhou (Honorable Mention), Bayesian Nonparametric Models for Biomedical Data Analysis. The University of Texas at Austin; Peter Müller, advisor.

For further details on the Savage Award, including names of past winners and eligibility details please visit <https://bayesian.org/project/savage-award/>. Up to two awards of \$750 will be awarded to the winners for 2019. Finalists will be notified in December 2019 and invited to present their dissertation research in a special contributed session at the ISBA World Meeting, in Kunming, China, in 2020.

Mitchell Prize

The Mitchell Prize is given in recognition of an outstanding paper that describes how a Bayesian analysis has solved an important applied problem. The winners for 2018 were:

Abhra Sarkar, Jonathan Chabout, Joshua Jones Macopson, Erich D. Jarvis and David B. Dunson for their paper “Bayesian Semiparametric Mixed Effects Markov Models With Application to Vocalization Syntax” published in *Journal of the American Statistical Association*, 113:524, 1515-1527, DOI: 10.1080/01621459.2018.1423986.

For details on the Mitchell Prize, including names of past winners and eligibility details please visit <https://bayesian.org/project/mitchell-prize/>. For 2019 winners, the prize includes a check for \$1000 and a plaque; the winner(s) will be announced at the ISBA World Meeting, in Kunming, China, in 2020.

DeGroot Prize

The DeGroot Prize is awarded to the author or authors of a published book in Statistical Science. For details on the DeGroot Prize, including names of past winners and eligibility details please visit <https://bayesian.org/project/degroot-prize/>. The prize includes a check for \$1500; the winner(s) will be announced at the ISBA World Meeting, in Kunming, China, in 2020.

Conference Report

12th International Conference on Bayesian Nonparametrics

This past 24-28 of June, Oxford hosted the 12th International Conference on Bayesian Nonparametrics. An impressive number of 220 participants from 21 countries (per affiliation) gave life to a diverse and high quality programme which covered all the recent advances in the field. The programme included three plenary talks given by Aad van der Vaart, Tamara Broderick and Long Nguyen, 9 invited sessions, 12 contributed sessions and 2 poster sessions. The scientific committee, led by Antonio Lijoi, put together an exciting programme which covered topics such as Bayesian inverse problems, BNP asymptotics and credible sets, random measures and predictive inference in BNP, BNP computations, foundational aspects of BNP, BNP for discrete structures, BNP for Biostats and BNP for high dimension. The poster sessions displayed 65 posters of high quality. 82 Phd students attended the conference and 43 travel funds were awarded to early career researchers. This included 8 ISBA travel funds awarded to Cecilia Balocchi, Diana Cai, Amine Hadji, Didong Li, Zacharie Naulet, Bo Ning, Miriam Shiffman and Giacomo Zanella. A junior ISBA reception, intended for students or researchers within 5 years of having completed their degree, was held on Wednesday evening. Non ISBA members were very welcome to attend. A childcare service was provided during the conference.

The 13th edition of the conference will be held in Chile in 2021. I am sure we are looking forward to this meeting in 2021!

– François Caron and Fabrizio Leisen

Members' News

Childcare at BNP

This year, the Bayesian Nonparametrics conference has fostered novel collaborations of sorts by attracting a new generation of early Bayesians. They interacted intensely every day, 9am-5pm, under the supervision of two fantastic day care women. Their different mother tongues, Spanish, Italian and French, leaves open the question of the language of their actual communication. Day care activities included daily visits to Oxford's Museum of Natural History, manual activities, games of any sorts, etc. From our parents point of view, we are indebted to the organizers Fabrizio, François, and all the local organizing committee for proposing this service, and to the whole community for supporting it. Thanks to it, we were able to attend the conference sessions seamlessly, with the extra benefit of sharing with our children this key and joyful moment in researchers' life that is a (BNP) conference!

SOFTWARE HIGHLIGHT

SEMIPARAMETRIC REGRESSION AND THE HRW R PACKAGE

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HRW is a new R package on the Comprehensive R Archive Network (cran.r-project.org) and supports the new book *Semiparametric Regression with R* by Jarek Harezlak, David Ruppert and Matt P. Wand (<http://semiparametric-regression-with-r.net>). The package contains datasets, scripts for illustrative semiparametric regression analyses and some support functions.

A feature of Harezlak, Ruppert and Wand (2019) is that it is one of the first books to make extensive use of the Stan Bayesian inference engine (Carpenter *et al.*, 2017) via the R package rstan. The HRW

package contains 20 scripts that perform Bayesian semiparametric regression analyses via rstan. The first of these is a script named `WarsawAptsBayes.R` that performs Bayesian nonparametric regression for some scatterplot data concerning apartments in the city of Warsaw. The R commands:

```
library(HRW) ; demo(WarsawAptsBayes,package="HRW")
```

run the script. If a user wants to study the code for analysis of a different data set then the R command:

```
system.file("demo","WarsawAptsBayes.R",package = "HRW")
```

returns the full path name of the script file on the user's computer. The user has the option of copying `WarsawAptsBayes.R` to a new file and modifying the code for analyses of other datasets.

Even though the HRW package and corresponding book contain several Bayesian examples, it is for pragmatic rather than philosophical reasons. Indeed, most of the book is on non-Bayesian methodology and R software such as the `gam` (Hastie, 2018) and `mgcv` (Wood, 2019) packages which support generalized additive model analyses with barely a prior or credible interval in sight. Bayesian inference engines are included and recommended due to the extra flexibility they provide. Examples (with HRW package illustrative script) are:

- contrast curves with variability bands (pointwise credible intervals) for the *difference* between two regression functions. (`WarsawAptsSimpFacByCurv.R`),
- less common response distributions such the skew extension of the t-distribution developed by Jones and Faddy (2003) (`MichIncMCMCskewt.R`),
- marginal generalized additive mixed for longitudinal data as described in Al Kadiri, Carroll & Wand (2010) (`margAddMod.R`),
- nonparametric regression with missing predictor data (`PIDana.R`),
- nonparametric regression with data subject to measurement error (`BCRana.R`), and
- additive models that cater for heteroscedasticity (`ozoneAna.R`).

The HRW package has only a few functions, but the one named `summMCMC()` should be of interest to anyone carrying out Bayesian analyses using Markov chain Monte Carlo methodology. Given Markov chain Monte Carlo samples, or *chains*, for one or more parameters of interest `summMCMC()` provides a single figure summary. Its use can be explained without even doing a Bayesian analysis. Simply type:

```
library(HRW)
xListSingleChain <- list(cbind(rnorm(100),rnorm(100),
                             rnorm(100),rnorm(100)))
summMCMC(xListSingleChain,parNames = list("par1","par2","par3","par4"))
```

and then sit back and marvel at the resulting visual feast. If your Bayesian analysis involves multiple chains then the commands:

```
xListMultipleChains <- list(chain1 = cbind(rnorm(100),rnorm(100),
                                           rnorm(100),rnorm(100)),
                           chain2 = cbind(rnorm(100),rnorm(100),
                                           rnorm(100),rnorm(100)))
summMCMC(xListMultipleChains,
         parNames = list("par1","par2","par3","par4"))
```

add Brooks-Gelman-Rubin (Brooks & Gelman, 1998; Gelman & Rubin, 1992) diagnostic plots. The help page for `summMCMC()` provides full details on tailored use of this function.

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