

Annotated Bibliography for Project XXXXX

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References

Albert, J. (2009). *Bayesian computation with r*. Springer Science & Business Media.

This is a concise book for someone with a strong background in math and statistics. A biologist may view this an intermediate-level book. It would be worth reading after mastering Kery 2010 in order to deepen your understanding of Bayesian statistics and to realize that you do not have to use WinBUGS or Stan with every problem.

Andreon, S., & Weaver, B. (2015). *Bayesian methods for the physical sciences: Learning from examples in astronomy and physics*. Springer.

This is a concise book for someone with a strong background in math and statistics. A biologist may view this an intermediate-level book. It would be worth reading after mastering Kery 2010 and Albert (2009) in order to deepen your understanding of Bayesian statistics and to realize that you do not have to use WinBUGS or Stan with every problem.

Carpenter, B., Gelman, A., Hoffman, M., Lee, D., Goodrich, B., Betancourt, M., ... Riddell, A. (2016). Stan: A probabilistic programming language. *J Stat Softw*, 0, 000-000.

Chaloner, K., & Verdinelli, I. (1995). Bayesian experimental design: A review. *Statistical Science*, 10, 273-304.

Davidson-Pilon, C. (2015). *Bayesian methods for hackers: Probabilistic programming and bayesian inference*. Addison-Wesley Professional.

This book was a 2015 Christmas gift from my father. It is meant to be introductory but it does reach into advanced topics. It relies on the PyMC package.

Dreyfus, S. E., & Dreyfus, H. L. (1980). *A five-stage model of the mental activities involved in directed skill acquisition* (Tech. Rep.). DTIC Document.

The famous Dreyfus and Dreyfus model of expertise. I have a pdf of this somewhere.

Feroz, F., Hobson, M., & Bridges, M. (2009). Multinest: an efficient and robust bayesian inference tool for cosmology and particle physics. *Monthly Notices of the Royal Astronomical Society*, 398(4), 1601–1614.

Cited it the BMC paper as the feference for multitest.

Gelfand, A. E., Hills, S. E., Racine-Poon, A., & Smith, A. F. (1990). Illustration of bayesian inference in normal data models using gibbs sampling. *Journal of the American Statistical Association*, 85(412), 972–985. Retrieved from <http://people.umass.edu/bioep740/yr2009/topics/gelfand-1990-jasa.pdf>

Gelman, A., Carlin, J. B., Stern, H. S., & Rubin, D. B. (2014). *Bayesian data analysis* (Vol. 2). Chapman & Hall/CRC Boca Raton, FL, USA.

This is the third edition. Its shorthand reference is BDA3. It has been cited over 17000 times in two years! Appendix C introduces using R and STAN together.

Gilks, W. R., Richardson, S., & Spiegelhalter, D. J. (1996). Introducing markov chain monte carlo. In (p. 1-19). London: Chapman and Hall.

I have a pdf of this chapter.

Gilks, W. R., Thomas, A., & Spiegelhalter, D. J. (1994). A language and program for complex bayesian modelling. *The Statistician*, 0, 169–177.

Hamelryck, T., Mardia, K., & Ferkinghoff-Borg, J. (2012). *Bayesian methods in structural bioinformatics*. Springer Science & Business Media.

I have this book. This is the first book to take a probabilistic approach statistical structural bioinformatics. You need to be an advanced beginner or higher in Bayesian data analysis to get much out of this book. The book is not self-contained and there is no associated software. It is out a tutorial.

Johansen, A. M. (2009, 4). Smctc: Sequential monte carlo in c++. *Journal of Statistical Software*, 30(6), 1–41. Retrieved from <http://www.jstatsoft.org/v30/i06>

I have the pdf. There is a R package RcppSMC that talks between R and SMCTC. I have the key book on the subject by Doucet in 2001: Sequential Monte Carlo Methods in Practice.

Johnson, V. E. (2013a). Revised standards for statistical evidence. *Proceedings of the National Academy of Sciences*, 110(48), 19313–19317.

Johnson, V. E. (2013b). Revised standards for statistical evidence. *Proceedings of the National Academy of Sciences*, 110(48), 19313–19317.

Kass, R. E., & Raftery, A. E. (1995). Bayes factors. *Journal of the american statistical association*, 90(430), 773–795.

Kéry, M. (2010). *Introduction to winbugs for ecologists: Bayesian approach to regression, anova, mixed models and related analyses*. Academic Press.

I have this book. It is unique in that it presents data simulations along with linear models using Bayesian and frequentist approaches. This part that I have read I like very much. The book is very well organized.

Korner-Nievergelt, F., Roth, T., von Felten, S., Guélat, J., Almasi, B., & Korner-Nievergelt, P. (2015). *Bayesian data analysis in ecology using linear models with r, bugs, and stan*. Academic Press.

This is a very accessible book on using cutting edge BDA without a lot of math.

Kruschke, J. (2015). *Doing bayesian data analysis: A tutorial with r, jags, and stan* (2nd ed.). Academic Press.

This is the second edition of the Puppy Dog book. The author is a Mr. Rodgers kind of guy, judging from the videos that he posted that explain the analysis behind Bayesian t-tests. Contrary to the title of the book, most of the examples are in JAGS. I bought this book for Victoria. It starts off slow and simple but looks are deceiving. It rises to a high level of sophistication.

Lesaffre, E., & Lawson, A. B. (2012). *Bayesian biostatistics*. John Wiley & Sons.

I have a copy of this book. I have written a brief review of it for myself.

Lunn, D. (2012). *The BUGS book: A practical introduction to Bayesian analysis*. Boca Raton, FL: Chapman & Hall/CRC Press. Retrieved from <http://www.crcpress.com/product/isbn/9781584888499>

Marin, J.-M., & Robert, C. P. (2014). *Bayesian essentials with r*. Springer.

I have a pdf of this book. This book looks really good as a second book on bayesian computation because it has more math while still having examples from R. It was written for scientists who have to apply Bayesian statistics. However, it was written by two statisticians. They may have included too much math.

McGrayne, S. B. (2011). *The theory that would not die: how bayes' rule cracked the enigma code, hunted down russian submarines, & emerged triumphant from two centuries of controversy*. Yale University Press.

Monnahan, C. C., Thorson, J. T., & Branch, T. A. (2016). Faster estimation of bayesian models in ecology using hamiltonian monte carlo. *Methods in Ecology and Evolution*, 0.

This looks like a good evaluatoin of Stan. This paper is a must read.

Rupp, B. (2009). *Biomolecular crystallography: principles, practice, and application to structural biology*. Garland Science.

I have this book. It has a nice discussion of Bayesian statistics in crystallography.

Sivia, D., & Skilling, J. (2006). *Data analysis: a bayesian tutorial*. OUP Oxford.

Skilling, J. (2006). Nested sampling for general bayesian computation. *Bayesian analysis*, 1(4), 833–859.

Smith, A., Skene, A., Shaw, J., & Naylor, J. (1987). Progress with numerical and graphical methods for practical bayesian statistics. *The Statistician*, 0, 75–82.

I got this article from JSTOR. It is a key reference in computational Bayesian statistics.

Spiegelhalter, D. J., Abrams, K. R., & Myles, J. P. (2004). *Bayesian approaches to clinical trials and health-care evaluation* (Vol. 13). Wiley. Retrieved from <https://books.google.com/books?id=eZdRL53PuWsC> (QA 279.5 .S65 2004)

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Sturtz, S., Ligges, U., & Gelman, A. (2005). R2winbugs: A package for running winbugs from r. *Journal of Statistical Software*, 12(3), 1–16. Retrieved from <http://www.jstatsoft.org>

Su, Y.-S., & Yajima, M. (2012). R2jags: A package for running jags from r [Computer software manual].