

August 23, 2019

StanCon2019 Organizing Committee  
P.O. Box 90596  
Austin, TX 78709 USA



To Whom It May Concern:

This letter confirms that  
attended 2 afternoons (1/2 day) of instruction for *Hierarchical Modeling with Stan* at StanCon2019  
on the dates of August 20 and August 21, 2019.

The course description is: Hierarchical models are and should be the default way to conduct a Bayesian analysis. By hierarchical Bayesian models, we mean any generative process where the distribution for some unknown depends on one or more other unknowns. This includes instrumental variables, interaction terms, hierarchical shrinkage priors and many others. However, the most common instance of a hierarchical model is one where the generative process allows some of the parameters to vary by group, which can be conveniently specified using the syntax of the lme4 R package. In this tutorial we will start with estimating and interpreting estimates of hierarchical models using the stan\_glmer function in the rstanarm R package, proceed to the brm function in the brms R package, and finish with some examples where participants modify or write code in the Stan language to specify a hierarchical model. Prerequisites: Some experience with R (not necessarily the aforementioned packages) and some experience with MCMC (not necessarily Stan).

Proof of payment is in the form of the corresponding EventBrite receipt. Please note that individual tutorials were not ticketed.

StanCon2019 (<https://mc-stan.org/events/stancon2019Cambridge/>) is the annual conference of the Bayesian modeling language Stan.

Sincerely,

A handwritten signature in black ink, appearing to read 'Breck Baldwin'.

Breck Baldwin, Ph.D on behalf of StanCon Organizing Committee