**Forecasting the flu in the US (continued)**

**EB:** Empirical Bayes (let \( \alpha_r, \beta_r = 1 \) for all \( r \)) (Brooks et al., 2015)

**EBR:** Empirical Bayes with regional effects

**Problem:** EBR is intractable and we are forced to make approximations for \( \beta_r \)

**Solution:** New approach: posterior biasing (PB)

**Figure:** Illustration of PB. The black dot is the peak. The blue curve is given less weight than the red one because the curve goes through the predicted peak.

**Results:** PB yields improved results, while EBR suffers from the approximation we made.

**The “next” disease and agent-based models (ABMs)**

ABMs are a viable way to forecast new diseases (e.g. Dengue, Ebola, Zika, the “next” one)

**For new infectious diseases, we have**
- Little data
- Less knowledge
- Frenzied awareness
- Few if any models

**Solution:** Simulate the spread of disease using ABMs!