Jim Albert Method

This uses Albert's package on hitting data, BApredict

```r
suppressPackageStartupMessages(library(BApredict))
hits <- collect_hitting_data()
model <- predict_hr(hits, "Stanton", 10000)
current_hrs <- model$current_HR
homers <- tibble(hrs = model$future_HR)
ggplot(homers, aes(x = hrs)) + geom_histogram(bins = 20)
```

```r
print(paste("Probability of tying or breaking the record: ",
  mean(round(homers$hrs >= (61 - current_hrs), 3))))
```

```
## [1] "Probability of tying or breaking the record: 0.201"
```

```r
print(paste("Average number of home runs Stanton will hit = ",
  round(mean(homers$hrs), 3)))
```

```
## [1] "Average number of home runs Stanton will hit = 2.306"
```
```r
print(paste("Standard deviation: ", round(sd(homers$hrs), 3)))

## [1] "Standard deviation: 1.481"

Bob Carpenter (Stan Group) Method

ab <- 567
hr <- 57
games <- 152
phrs <- sum(rbinom(1e5, rpois(1e5, 10 * ab / games), rbeta(1e5, 1 + hr, 1 + ab - hr)) >= (61 - hr)) / 1e5
print(paste("Probability of tying or breaking the record: ", round(phrs, 3)))

## [1] "Probability of tying or breaking the record: 0.519"
```