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# A Statistical Analysis of the Ouachita Baptist University Men's Baseball Team

Evan Nelson  
*Ouachita Baptist University*

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The logo for the Ouachita Tigers Baseball team is centered in the background. It features a stylized tiger head in purple and gold, with the word "OUACHITA" in purple above it. Below the tiger head, the word "TIGERS" is written in large, bold, purple letters with a white outline. At the bottom, the word "BASEBALL" is written in smaller, purple, all-caps letters, followed by a trademark symbol (TM).

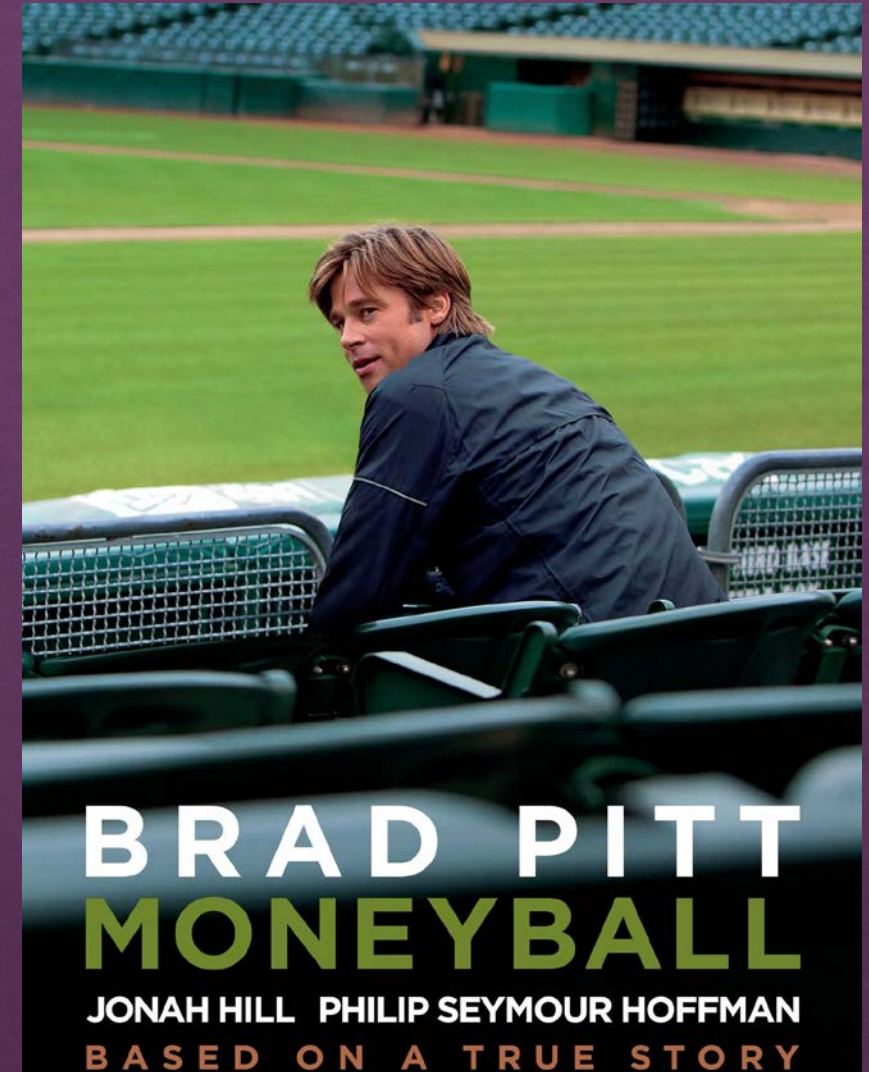
# A Statistical Analysis of the Ouachita Baptist University Men's Baseball Team

By: Evan Nelson



# My Journey to This Senior Thesis

- ◆ Directed Study
- ◆ Big Data Course
- ◆ Robinson-Kell Chapter SABR Meeting
- ◆ 2018 MIT Sloan Sports Analytics Conference





# The Five Tools

- ◆ Run
- ◆ Throw
- ◆ Field
- ◆ Hit
- ◆ Hit with Power



# Sabermetrics

- ◆ A big data revolution in baseball
- ◆ Not about what he looks like, but what he has done.
- ◆ “Analytics have made clubs far better at valuing players.” – Rob Manfred, MLB Commissioner at the 2018 MIT Sloan Sports Analytics Conference



# My Data

- ◆ Used Ouachita baseball box scores from 2003-2018 from the Ouachita Athletics website.
- ◆ Sample size of 829 games
- ◆ Correlation and regression analyses
  - ◆ “What causes the Ouachita baseball team to win and lose?”

**TALK  
DATA  
TO ME**



# Hitting and Fielding Analysis

| Positive    | Negative  | No  |
|-------------|---|-----|
| R (32.7%)   | K (4.9%)  | GDP |
| RBI (29.8%) | E (3.3%)  | A   |
| H (17.5%)   | Location (home code: 0,<br>away code: 1) (1.5%) |     |
| AVG (12.9%) |   |     |
| BB (9%)     |   |     |
| 2B (7.7%)   |   |     |
| SB (6.4%)   |   |     |
| HR (6.2%)   |   |     |
| 3B (3.6%)   |   |     |
| HBP (3.4%)  |   |     |
| SF (2.5%)   |   |     |
| SH (2.3%)   |   |     |
| IBB (2%)    |   |     |
| AB (1.7%)   |   |     |
| CS (1.2%)   |   |     |

# Pitching Analysis

| Positive  | Negative    | No  |
|-----------|-------------|-----|
| SO (6.2%) | R (29.9%)   | BK  |
|           | ER (25%)    | IBB |
|           | H (17.2%)   |     |
|           | ERA (15.4%) |     |
|           | 2B (9.7%)   |     |
|           | BB (8.2%)   |     |
|           | WP (6.5%)   |     |
|           | HBP (4.7%)  |     |
|           | HR (3.9%)   |     |
|           | 3B (3.4%)   |     |



## Player Production Formula for Position Players

$$\begin{aligned} &\diamond 0.65(\text{On-Base Percentage}) \\ &\quad + 0.25(\text{Slugging} \\ &\quad \text{Percentage}) + 0.05(\text{Stealing} \\ &\quad \text{Percentage}) + 0.05(\text{Fielding} \\ &\quad \text{Percentage}) \end{aligned}$$

# 2018 Ouachita Baseball Player Production Rankings for Position Players

1. Austin White– 0.47395
2. Kyle Alexander– 0.46545
3. Preston Speers– 0.43995
4. Tyler Riebock– 0.42288
5. Jakahari Howell– 0.42079
6. Louis Steen– 0.41945
7. Aaron Studdard– 0.38993
8. Victor Draijer– 0.3896
9. Ty Owens– 0.36395
10. Cade McBride– 0.3217
11. Chandler Blake– 0.31575
12. Tarrodd Collier– 0.31405
13. Logan Huneycutt– 0.3071



## Player Production Formula for Pitchers

$$\begin{aligned} &\diamond 0.35[1 - (\text{BB} + \\ &\text{HBP})/\text{IP}] + 0.35[1 - (2\text{B} \\ &+ 3\text{B})/\text{IP}] + 0.15(\text{K}/\text{IP}) \\ &+ 0.15(1 - \text{HR}/\text{IP}) \end{aligned}$$

# 2018 Ouachita Baseball Player Production Rankings for Pitchers

1. John Franklin Matros– 0.72559

2. Tyler Duck– 0.63366

3. Brandon Matros– 0.63355

4. Kaden Tollett– 0.60314

5. Adam Bahloul– 0.59029

6. Sheldon McCown– 0.57989

7. Michael Shepherd– 0.57029

8. Carter Wade– 0.52605

9. Ben Miller– 0.50134

10. Luke Scaggs– 0.4043

11. Noah Fowler– 0.31409

12. Bo Sutton– 0.28867



# Conclusion

- ◆ Thank you!
- ◆ Formulas are easily applied to many levels of baseball
- ◆ Formulas have the chance to impact many within baseball
- ◆ Another small piece in the big data revolution

