

Providence College

DigitalCommons@Providence

Mathematics & Computer Science Student
Scholarship

Mathematics & Computer Science

Spring 4-22-2020

Research in Sabermetrics: the Cape Cod Baseball League

Thomas Zinzarella
Providence College

Follow this and additional works at: https://digitalcommons.providence.edu/computer_science_students



Part of the [Mathematics Commons](#)

Zinzarella, Thomas, "Research in Sabermetrics: the Cape Cod Baseball League" (2020). *Mathematics & Computer Science Student Scholarship*. 2.

https://digitalcommons.providence.edu/computer_science_students/2

This Presentation is brought to you for free and open access by the Mathematics & Computer Science at DigitalCommons@Providence. It has been accepted for inclusion in Mathematics & Computer Science Student Scholarship by an authorized administrator of DigitalCommons@Providence. For more information, please contact dps@providence.edu.

Park Factors and WAR: Why they Matter

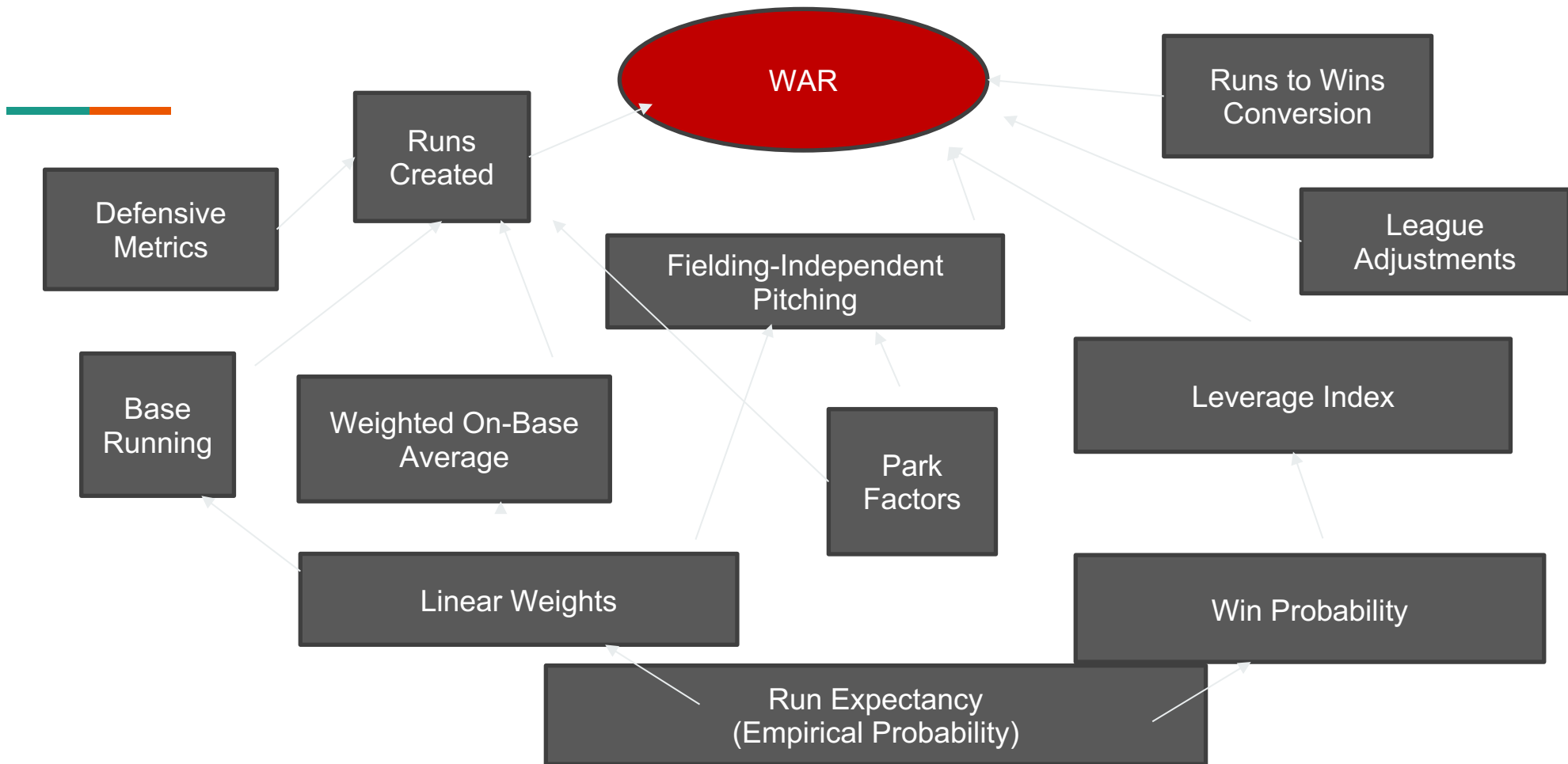
An Analysis by Thomas Zinzarella





What is WAR?

- Our research class decided to look into WAR. In baseball, WAR stands for Win's Above Replacement. WAR is one of the many statistical tool's baseball professionals use to judge a player.
- WAR aims to find how many more win's a player can bring to a team than a Minor League baseball player or a free agent.
- In retrospect, 4-5 WAR, you are at an All-Star level and anything over 6 in a season is considered potential MVP recognition.



The Cape Cod Baseball League: An Overview

- One of the premier baseball summer leagues in the U.S (1 in 7 MLB ballplayers played on Cape.)
- Drastic differences in ballpark sizes
 - In Orleans: CF fence is 432, compared to 352 in YD. YD is a much smaller ballpark.





Why the Cape League?

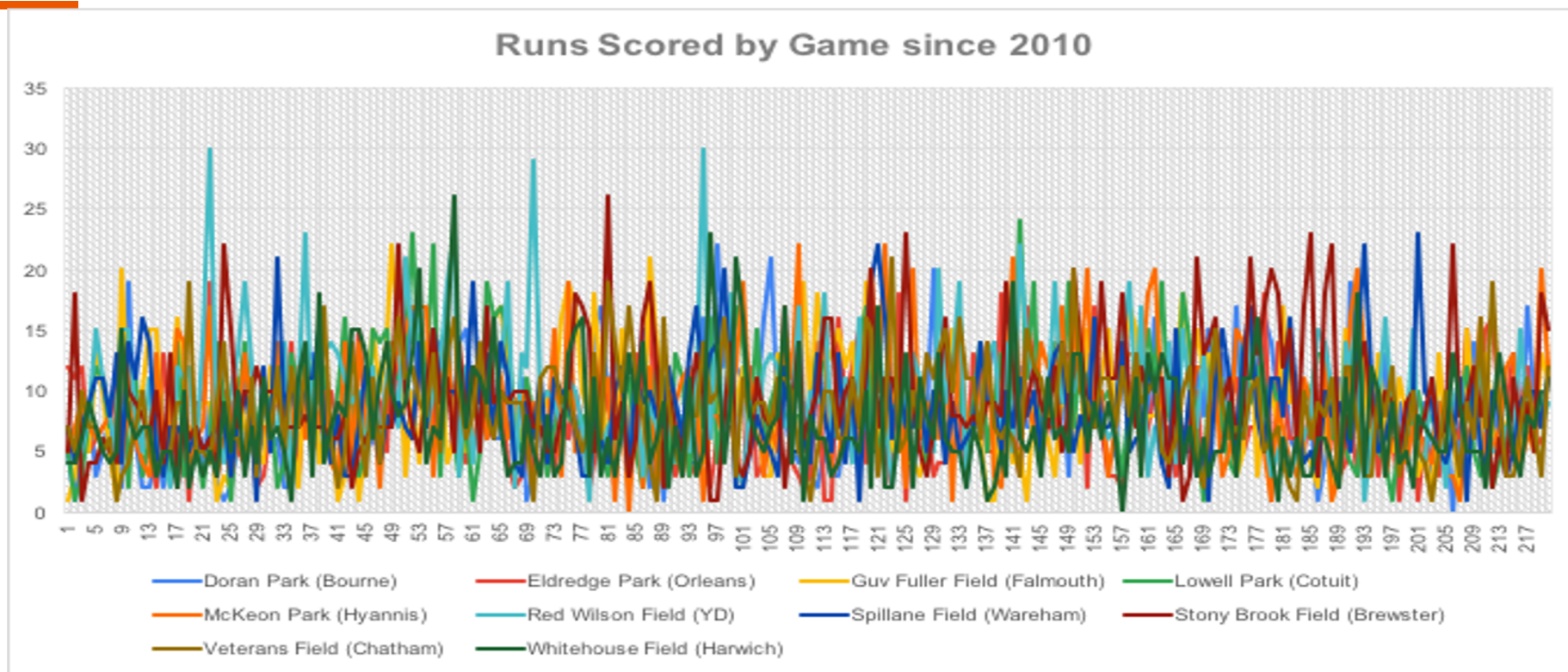
- Provides many constant variables for our class project. In order to play in the league, you must have college eligibility. Generally, players are between rising sophomores-rising seniors.
- Most players are rising sophomores or juniors because they want to enter draft after their junior year.
- Since these are the best college baseball players, the talent level is close together.
- In June, each team has temporary players to fill roster spots for players who are still competing in the College World Series or are heading to play for the Collegiate National Team.
- Some temporary guys earn full season contracts, but these are considered the “replacement players.”

How we Gathered our Data

- Pointstreaks box score data from 2010-2019
- Gathered total runs scored in home games and away games



Summary Statistics





Our Formula and Results

$$PF = 100 * \left(\frac{\frac{homeRS+homeRA}{homeG}}{\frac{roadRS+roadRA}{roadG}} \right)$$

Bourne	Orleans	Falmouth	Cotuit	Hyannis	YD	Wareham	Brewster	Chatham	Harwich
0.901	0.940	1.048	1.004	1.029	1.122	1.003	1.152	0.989	0.852

What this Means for a Players' WAR

- HR in Brewster/YD shouldn't be weighed the same as a HR in Orleans.
- Pitchers should be let off at easier ballparks, compared to other ones.



Application to the 2018/19 Season

- Case Study: Whitehouse Field (Harwich Mariners)
 - LF: 330 CF: 395 RF: 330
- 2019: 7th in CCBL HR
 - Niko Kavadas 9 HR , Lanzilli 4 HR
 - 27 as team (15 road, 12 home)
 - 2nd ERA Cape
- 2018: Last HR (14)
 - Home: .223 AVG, 3.06 team ERA
 - Road: .262 AVG, 4.79 team ERA
- 2017: Last HR (14)
 - Home: .213 AVG, team 3.72 ERA
 - Road: .260 AVG, team 5.78 ERA
 - Jonathan India, 5th overall pick by Reds, 21 HR at Florida



Other Factors

- Double-headers brought back few years ago
 - Teams play 2 double-headers in June (one at home and on road, 7 inning games.)
- Wood-bats
 - College players play with aluminum bats. Takes a few weeks in June to adjust. Cape coaches always say, take your batting average at school and cut it in half.
- Rain-outs
 - This past summer, because of so many rain outs in June, some teams had to play 32 games in 29 days.
- Pitching (ERA qualifier)
 - Many college coaches give summer coaches an inning's limit on a pitcher. So from 10-years ago, pitchers stayed longer.
- Pitching adjustment
 - Every pitcher and player in this league are the studs of their team. Many of these pitchers are Friday night starters, which are typically a team's ace pitcher.



Conclusions/Questions

- WAR effects both pitcher and hitters
- Different ballparks offer different opportunities



Thank you

