# $\underset{\mathrm{saberpowers.github.io}}{\mathrm{SCOTT}} \underset{\mathrm{powers.github.io}}{\mathrm{Powers}}$

Academic Experience	
Rice University Assistant Professor of Sport Analytics and (by courtesy) of Statistics	2023-
SPORTS EXPERIENCE	
FULL-TIME	
Houston Astros Assistant General Manager	2022
Los Angeles Dodgers Director, Quantitative Analysis Senior Analyst, Research & Development	2017-2021 2019-2021 2017-2018
Part-Time/Consulting	
<b>Teamworks</b> (formerly Zelus Analytics) Staff Data Scientist Senior Data Scientist	2020, 2023- 2023- 2020
AZ Alkmaar Data Analyst	2015-2020
Oakland Athletics Analytics Consultant	2015-2016
EDUCATION —	
Stanford University Ph.D. Statistics Advisor: Rob Tibshirani	2017
University of Chicago M.S. Statistics	2013
University of North Carolina at Chapel Hill B.S. Mathematical Decision Sciences and Mathematics Highest Honors from the Department and Highest Distinction from the University	2011
Research —	

## Working Papers

Powers S, Yurko R

"Swinging, Fast and Slow: Interpreting variation in baseball swing tracking metrics"

#### Zhu J, Love D, Powers S

"The relationship between ball path curvature and in-game free throw shooting proficiency in the National Basketball Association"

#### Millington E, Powers S

"A comps-based approach for interpreting tree-based predictions with an application to NFL quarterback draft prospect projection"

#### Hahn J, Powers S, Pai M, Schaefer A

"The Two-Foot Rule: A game theoretic analysis of the pickoff limit in Major League Baseball"

#### Powers S, Iglesias V

"Pitch trajectory density estimation for predicting future outcomes"

#### **Publications**

## Powers S, Stancil L, Consiglio N

"Estimating individual contributions to team success in women's college volleyball" Journal of Quantitative Analysis in Sports 21(2) 117-135

## Burton T, Powers S, Burns C, Conway G, Leach F, Senecal K (2023)

"A data-driven greenhouse gas emission rate analysis for vehicle comparisons" SAE International Journal of Electrified Vehicles 12(1)

#### Powers S, McGuire V, Bernstein L, Canchola AJ, Whittemore AS (2019)

"Evaluating disease prediction models using a cohort whose covariate distribution differs from that of the target population"

Statistical Methods in Medical Research 28(1) 309-320

#### Powers S, Hastie T, Tibshirani R (2018)

"Nuclear penalized multinomial regression with an application to predicting at bat outcomes in baseball"  $Statistical\ Modelling\ 18(5-6)\ 388-410$ 

## Powers S, Qian J, Jung K, Schuler A, Shah NH, Hastie T, Tibshirani R (2018)

"Some methods for heterogeneous treatment effect estimation in high dimensions"  $Statistics\ in\ Medicine\ {\bf 37}(11)\ 1767-1787$ 

#### McGinnis L, Powers S, Bangs D, Cherry A, Tibshirani R, Natkunam Y (2016)

"Double-hit diffuse large B-cell lymphomas with MYC gene rearrangements more commonly involve BCL2 than BCL6 gene rearrangements as the second hit: A large scale single institution study" *Laboratory Investigation* **96** 362A

## Burton T, Powers S (2015)

"A linear model for estimating optimal service fraction in volleyball" Journal of Quantitative Analysis in Sports 11 117-129

## Powers S, Hastie T, Tibshirani R (2015)

"Customized training with an application to mass spectrometric imaging of cancer tissue" The Annals of Applied Statistics  $\bf 9$  1709-1725

#### Powers S, DeJongh M, Best AA, Tintle NL (2015)

"Cautions about the reliability of pairwise gene correlations based on expression data" Frontiers in Microbiology 6 650

## Powers S, Gopalakrishnan S, Tintle NL (2011)

"Assessing the impact of non-differential genotyping errors on rare variant tests of association"  $Human\ Heredity\ 72\ 153-160$ 

## Luedtke A, Powers S, Petersen A, Sitarik A, Bekmetjev A, Tintle NL (2011)

"Evaluating methods for the analysis of rare variants in sequence data"

BMC Proceedings 5 S119

#### Petersen A, Sitarik A, Luedtke A, Powers S, Bekmetjev A, Tintle NL (2011)

"Evaluating methods for combining rare variant data in pathway-based tests of genetic association"  $BMC\ Proceedings\ \mathbf{5}\ S48$ 

## Saavedra S, **Powers S**, McCotter T, Porter MA, Mucha PJ (2010)

"Mutually-antagonistic interactions in baseball networks"

Physica A: Statistical Mechanics and its Applications 389 1131-1141

#### INVITED TALKS

#### MIT Sloan Sports Analytics Conference

"Spotlighting under-the-radar performers in women's college volleyball" Boston 2024

#### New England Symposium on Statistics in Sports

"Estimating individual contributions to team success in women's college volleyball" Boston 2023

#### Contributed Talks

## Cascadia Symposium on Statistics in Sports

"Untangling intention and	timing error from	bat speed and sv	wing length in MLB"	Vancover 2024

#### Saberseminar

"Untangling intention and timing error from bat speed and swing length"	Chicago 2024
"Pitch trajectory density estimation for predicting future outcomes"	Chicago 2023
"Jointly predicting exit velocity and launch angle for batter-pitcher matchups"	Boston 2016
"Rewarding batters for baserunner advancement: A ridge-regressed Rasch model"	Boston 2015

#### Conference of Texas Statisticians

"Baseball pitch trajectory density estimation for predicting future pitcher outcomes" Houston 2024

#### Joint Statistical Meetings

"Nuclear penalized multinomial regression for predicting at bat outcomes in baseball" Chicago 2016

## SABR Analytics Conference

"True wOBA: Estimation of true talent level for batters" Phoenix 2016

#### INVITED PANELS

## Columbia Symposium on AI and Sports

"Data Science and Analytics in Sports Performance and Management" New York 2024

#### STUDENT TALKS

## Cascadia Symposium on Statistics in Sports

Jacob Hahn: "A game theoretic analysis of the pickoff limit in Major League Baseball" Vancouver 2024

#### Women in Sports Data Symposium

Naomi Consiglio: "Modifying k-means clustering to optimize positioning in volleyball" Philadelphia 2024

#### Saberseminar

Jeff Brover: "Do we learn more about AAA batters when they face better pitches?"

Chicago 2024

Chicago 2024

Chicago 2024

Chicago 2024

Chicago 2024

Chicago 2024

#### STUDENT POSTERS

#### Cascadia Symposium on Statistics in Sports

Elizabeth Sepúvelda: "A statistical approach to sport climbing difficulty and progression" Vancouver 2024

#### Opta Forum

Andrew Kang: "Not All Features Are Created Equal: Player clustering and evaluation" London 2024

## Funding —

#### EXTERNAL

#### Major League Baseball Research Gift

"Identifying biomechanical risk factors for pitching injuries" PI: S Powers, \$50,000 2024-2025

#### Internal

## Rice University Creative Ventures Conference and Workshop Development

"Rice Soccer Analytics Conference" PI: S Powers, \$10,000 2024-2025

## Teaching -

\* indicates a course I designed

#### Rice University

Instructor, \*SMGT 430: Introduction to Sport Analytics

Instructor, \*SMGT 432: Soccer Analytics

Fall 2024

Instructor, \*SMGT 435: Baseball Analytics

Spring 2024, Fall 2023

Instructor, \*SMGT 435: Baseball Analytics

Spring 2024, Fall 2024

## Stanford University

Instructor, \*STATS 50: Mathematics of Sports

TA, STATS 305A: Applied Statistics I

TA, STATS 216: Introduction to Statistical Learning
TA, STATS 202: Data Mining and Analysis

TA, STATS 50: Mathematics of Sports

Spring 2016

Winter 2014, Summer 2015, Winter 2017

TA, STATS 50: Mathematics of Sports

Fall 2014

## University of Chicago

Instructor, STAT 23400: Statistical Models and Methods Spring 2013 TA, STAT 22000: Statistical Methods and Applications Fall 2011, Spring 2012, Fall 2012

## Mentorship —

## Rice University

Principal Investigator, Sport Analytics Undergraduate Research Lab

2024Students/Alumni: Jeff Brover, Naomi Consiglio, Lucca Ferraz, Jacob Hahn, Rahul Herrero, Elisabeth
Millington, Zach Pool, Elizabeth Sepúlveda, Luke Stancil, Lou Zhou, Judy Zhu