Umpire Scorecard

Featuring the debut of the MLB's first female umpire

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What to Expect

Data source: Umpire Scorecard Published on Kaggle, adapted from https://umpscorecards.us/

Data Snapshot (Umpire Scorecard)

Original Features	Engineered Features
id	month
date	is_playoff
umpire	year
home	game_num
away	season_progress
home_team_runs	season_quartile
away_team_runs	margin
pitches_called	game_type
incorrect_calls	dow
expected_incorrect_calls	total_runs
correct_calls	scoring_env
expected_correct_calls	big_impact
correct_calls_above_expected	post_allstar
accuracy	is_weekend
expected_accuracy	home_win
accuracy_above_expected	is_veteran
consistency	
favor_home	
total_run_impact	

Umpire Benchmarks (Top Accuracy)

Accuracy above expected is calculated by subtracting an umpire's expected accuracy (from pitch-tracking models) from their actual accuracy in called pitches.

## Top 10 Umpires (by Accuracy Above Expected)

	umpire	games	accuracy	expected_accuracy	acc_above_exp	consistency	favor_home	run_impact
0	Will Little	209	94.13	92.18	+1.94	93.70	+0.075	+1.209
1	Brock Ballou	7	94.90	93.06	+1.83	95.20	-0.289	+1.229
2	John Libka	120	94.96	93.20	+1.75	93.86	+0.032	+1.080
3	Alex Tosi	43	94.50	92.83	+1.67	93.63	+0.150	+1.128
4	Jeremie Rehak	123	94.63	93.03	+1.60	93.64	-0.015	+1.136
5	Pat Hoberg	220	93.92	92.41	+1.51	93.82	-0.041	+1.199
6	Jansen Visconti	133	94.57	93.13	+1.44	94.00	+0.033	+1.210
7	Lance Barksdale	221	93.44	92.22	+1.21	93.60	+0.063	+1.318
8	Adam Beck	62	94.41	93.21	+1.20	94.10	+0.002	+1.181
9	Edwin Moscoso	83	94.64	93.47	+1.17	93.82	-0.019	

Umpire Benchmarks (Bottom Accuracy)

|	umpire	games	accuracy	expected_accuracy	acc_above_exp	consistency	favor_home	run_impact
123	Marcus Pattillo	5	87.80	90.20	-2.40	91.36	-0.322	+2.382
122	Tim Welke	28	88.57	90.40	-1.83	91.57	+0.065	+2.075
121	Rob Drake	194	90.69	92.15	-1.46	92.74	+0.106	+1.750
120	Bob Davidson	59	89.49	90.83	-1.34	92.37	-0.113	+1.991
119	Joe West	206	90.88	92.20	-1.32	92.84	+0.037	+1.875
118	Kerwin Danley	150	90.79	91.97	-1.19	92.20	+0.058	+1.834
117	Ed Hickox	165	91.18	92.33	-1.16	92.56	+0.010	+1.805
116	Malachi Moore	37	92.17	93.26	-1.11	92.85	+0.022	+1.481
115	Mike Winters	134	90.59	91.68	-1.09	92.57	-0.025	+1.939
114	Paul Nauert	153	90.97	91.99	-1.03	92.74	+0.082	+1.802

Marcus Patillo (Worst Umpire 2015-2022)
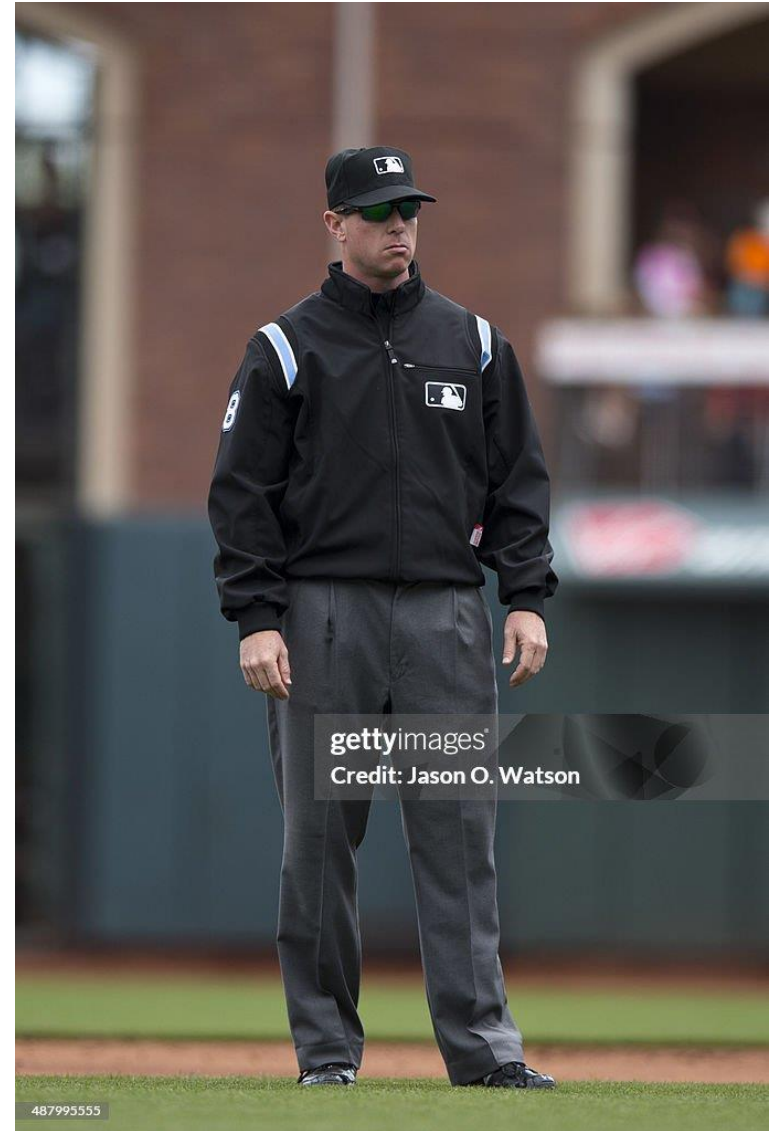
Theme I (Key Questions)

- Expected vs. Actual Accuracy

- Home-Team Bias

- Umpire Clustering

- Random Forest Feature Importance (Target Variable: Accuracy)

- Jen Pawol Debut Comparison
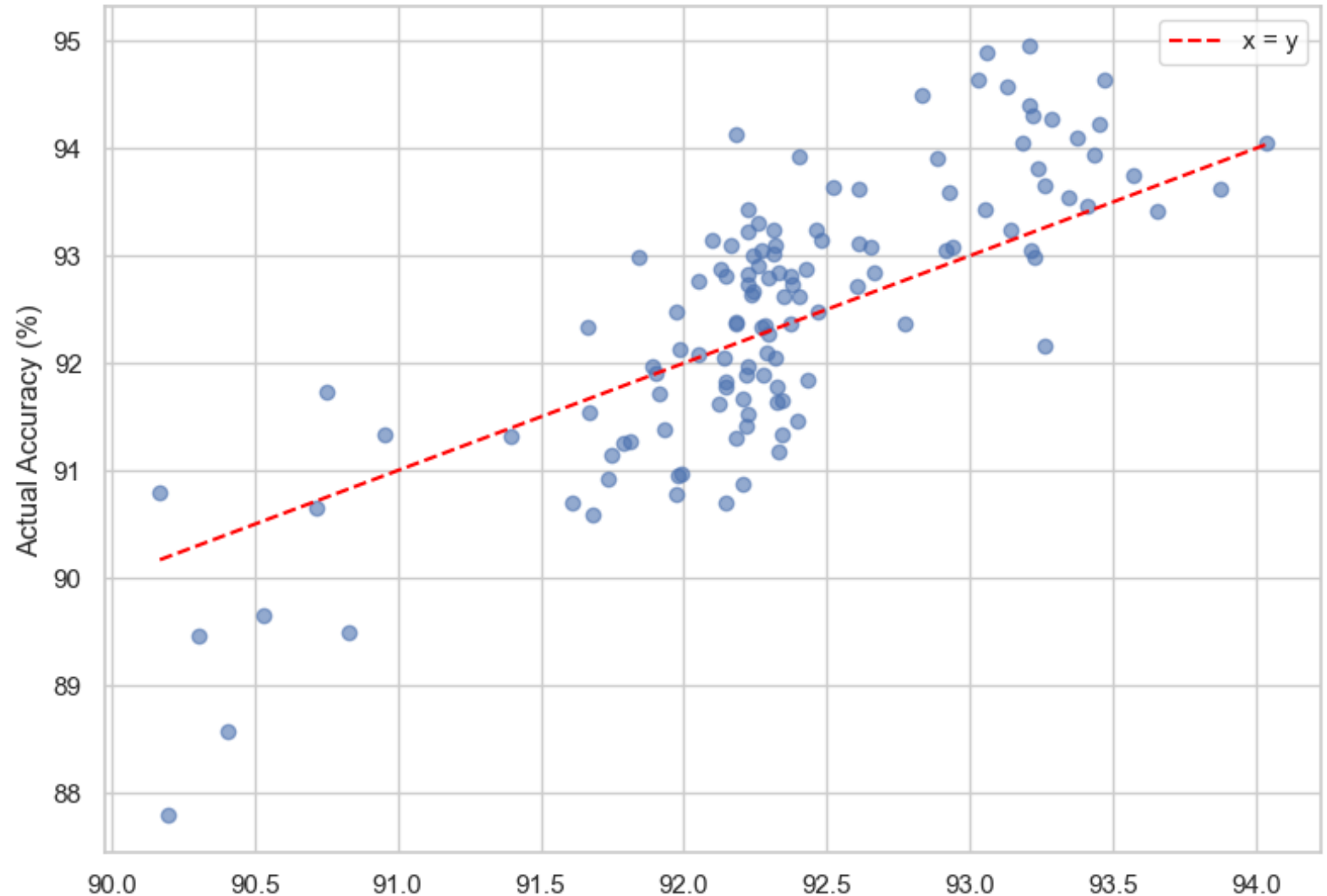
Distribution of Umpire Accuracy Across Seasons
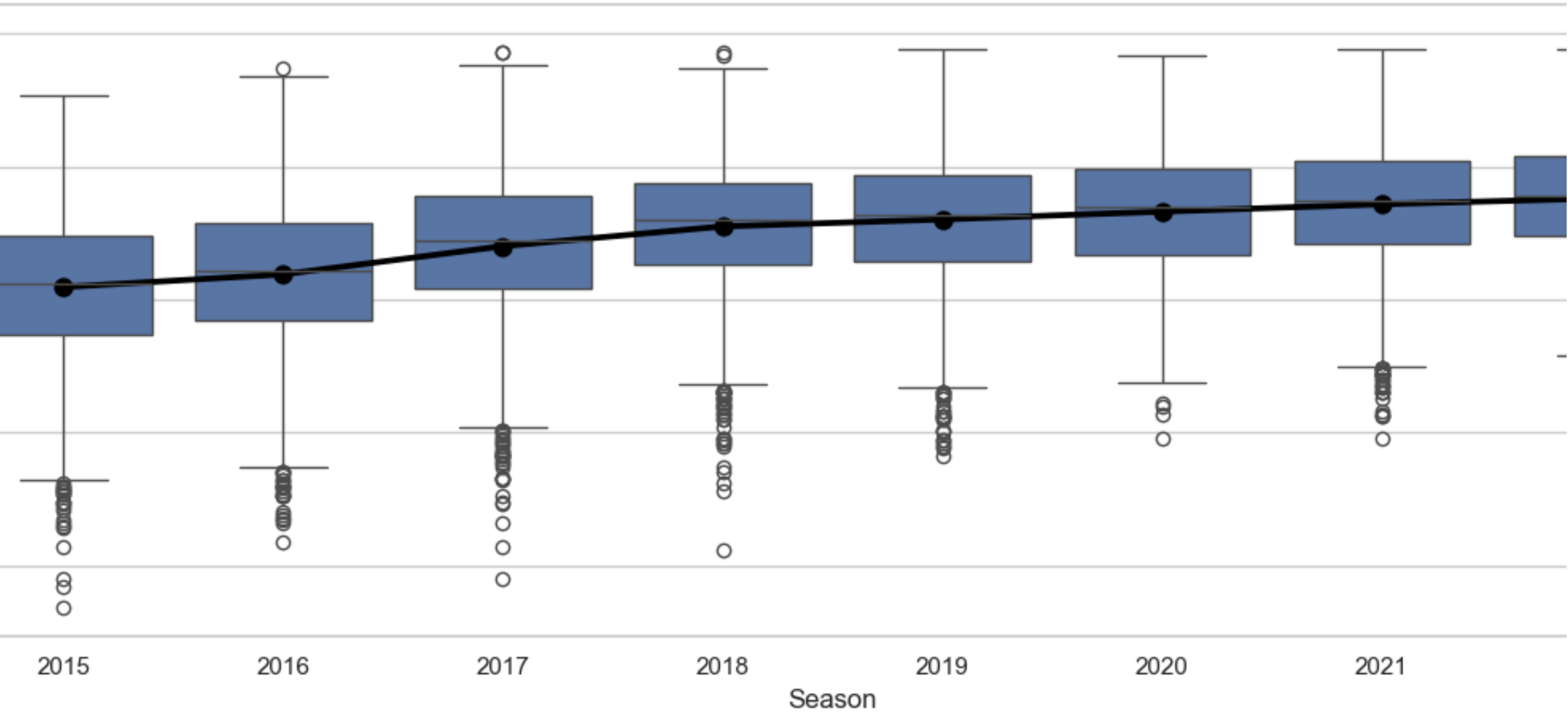
Expected Vs. Actual Accuracy

- Above the line → umpire performed better than tracking system's expectation.

- Most umpires are within ±1–2% of expectations
- A few consistent over/under-performers
- May reflect tendencies tech doesn't capture

Fig. 3 Expected vs. Actual Accuracy by Umpire

Home Team Bias

- Small but consistent lean toward home teams

- Typically < 1% difference

- Seen across most ballparks

Fig. 4 Home-Team Bias by Franchise
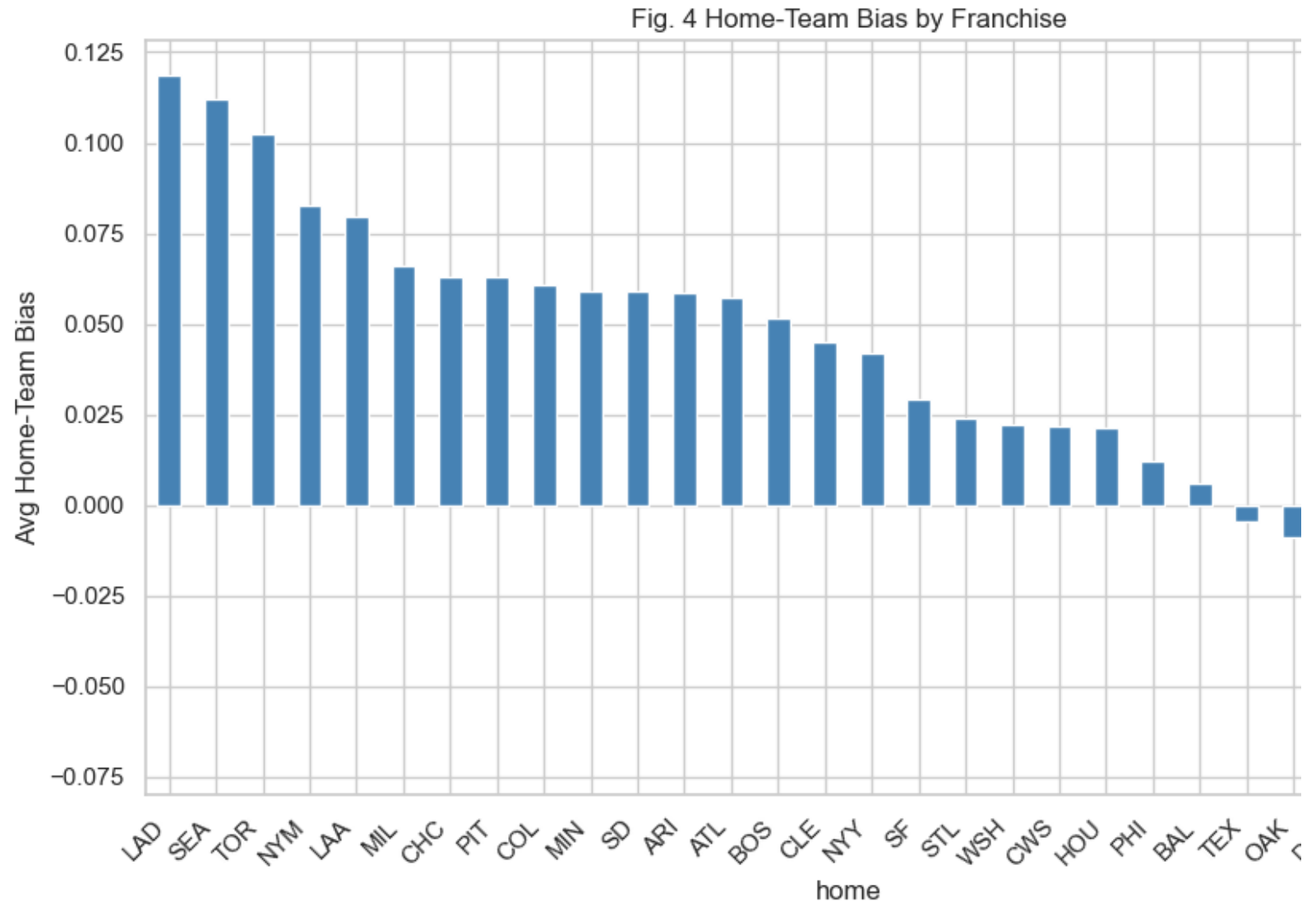
Umpire Clustering

- Four clear performance clusters

- Top group: high accuracy & consistency

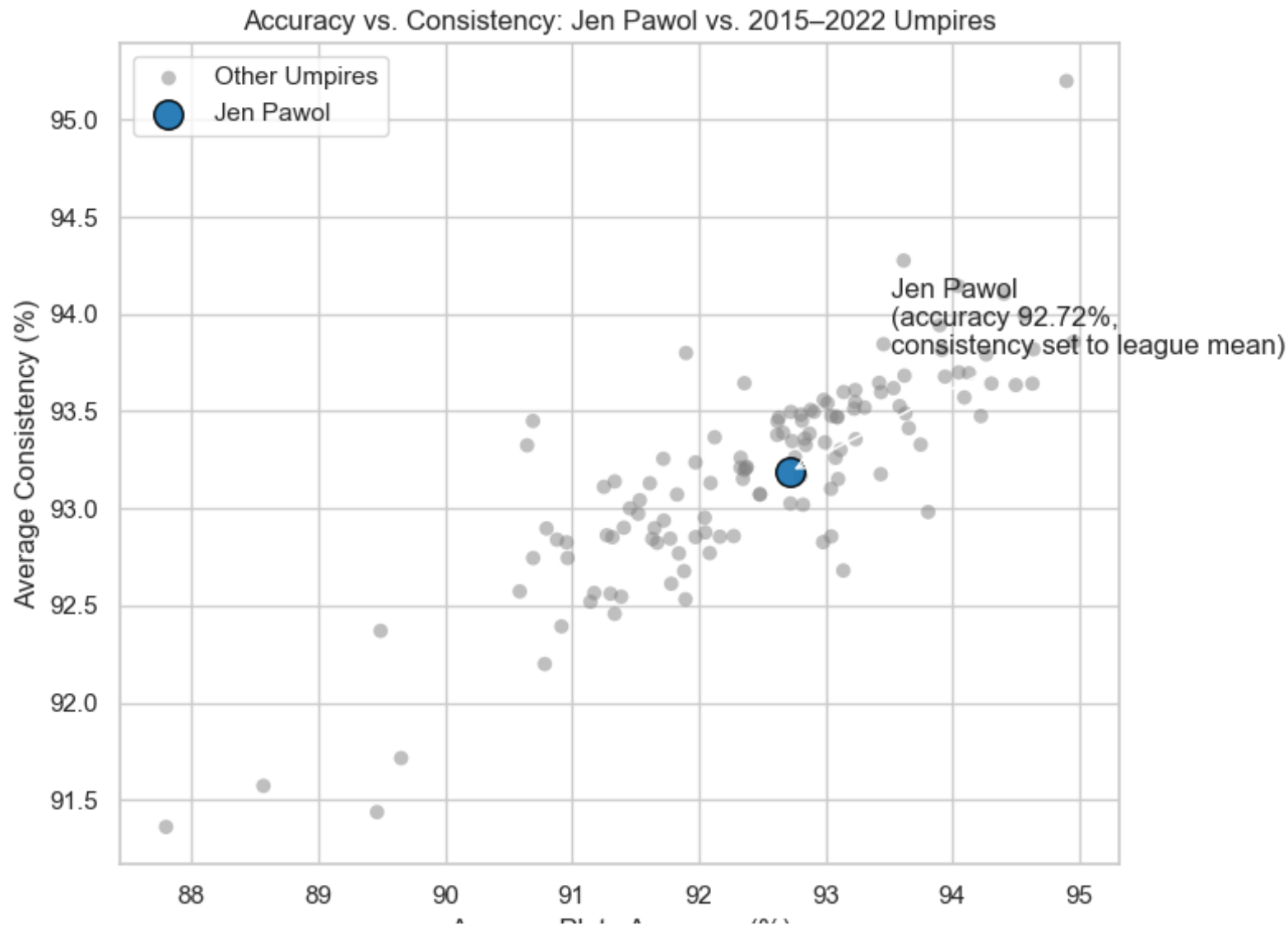- Lower group: more variability in both

Fig. 5 Clusters
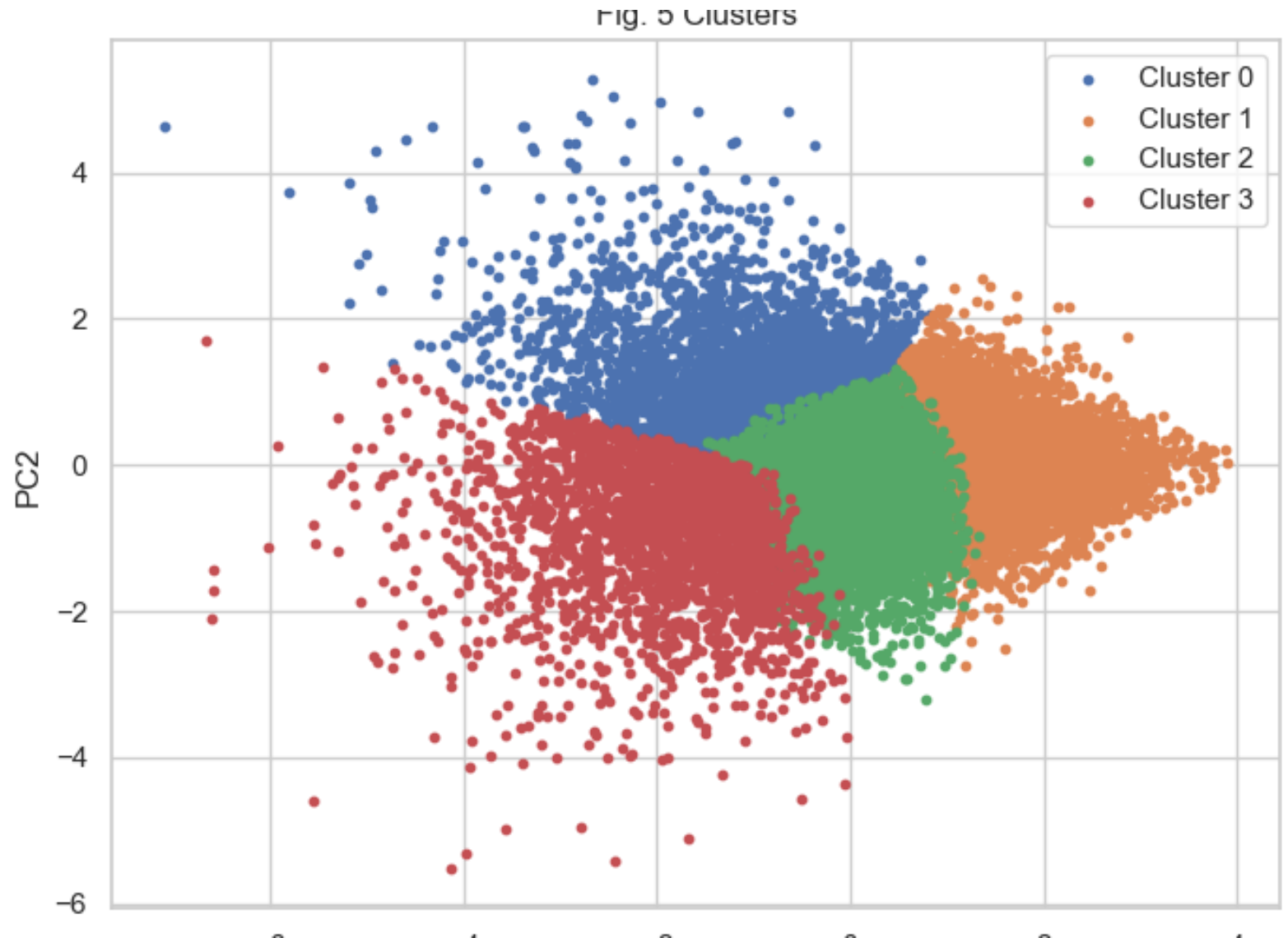
Key Factors Driving Accuracy

- Run impact is the strongest predictor (~58%)

- Consistency is second (~16%)

- Context variables matter less overall

Fig. 6 Feature Importance

Accuracy vs. Consistency: Jen Pawol vs. 2015–2022 Umpires
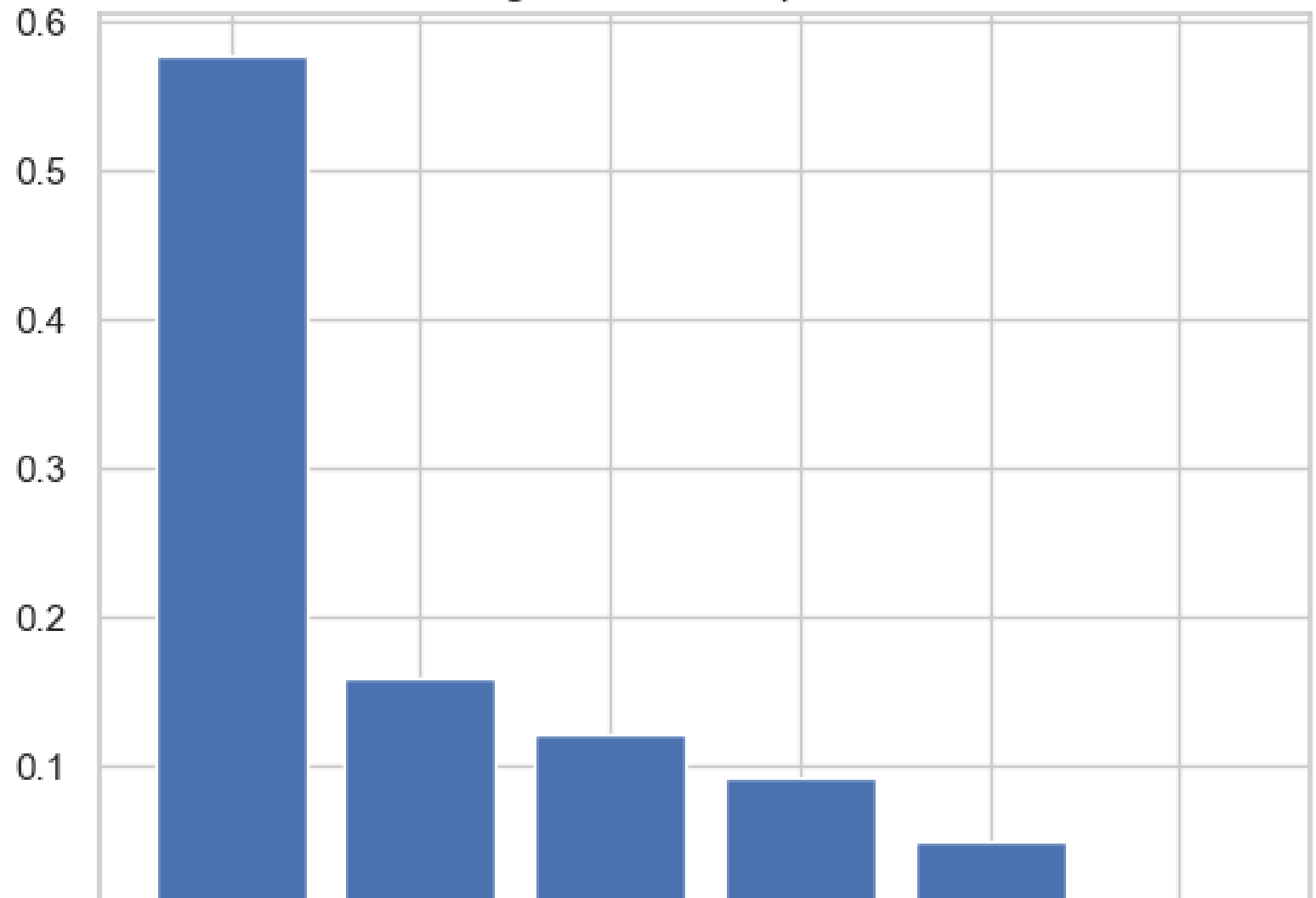
Jen Pawol's First Plate Game

- First female MLB plate umpire
- Accuracy in line with veteran umpires
- Consistency estimated, not measured

Theme II + Cross Theme Observations (Key Questions)

- Accuracy By Game Type

- Postseason vs. Regular Season Accuracy
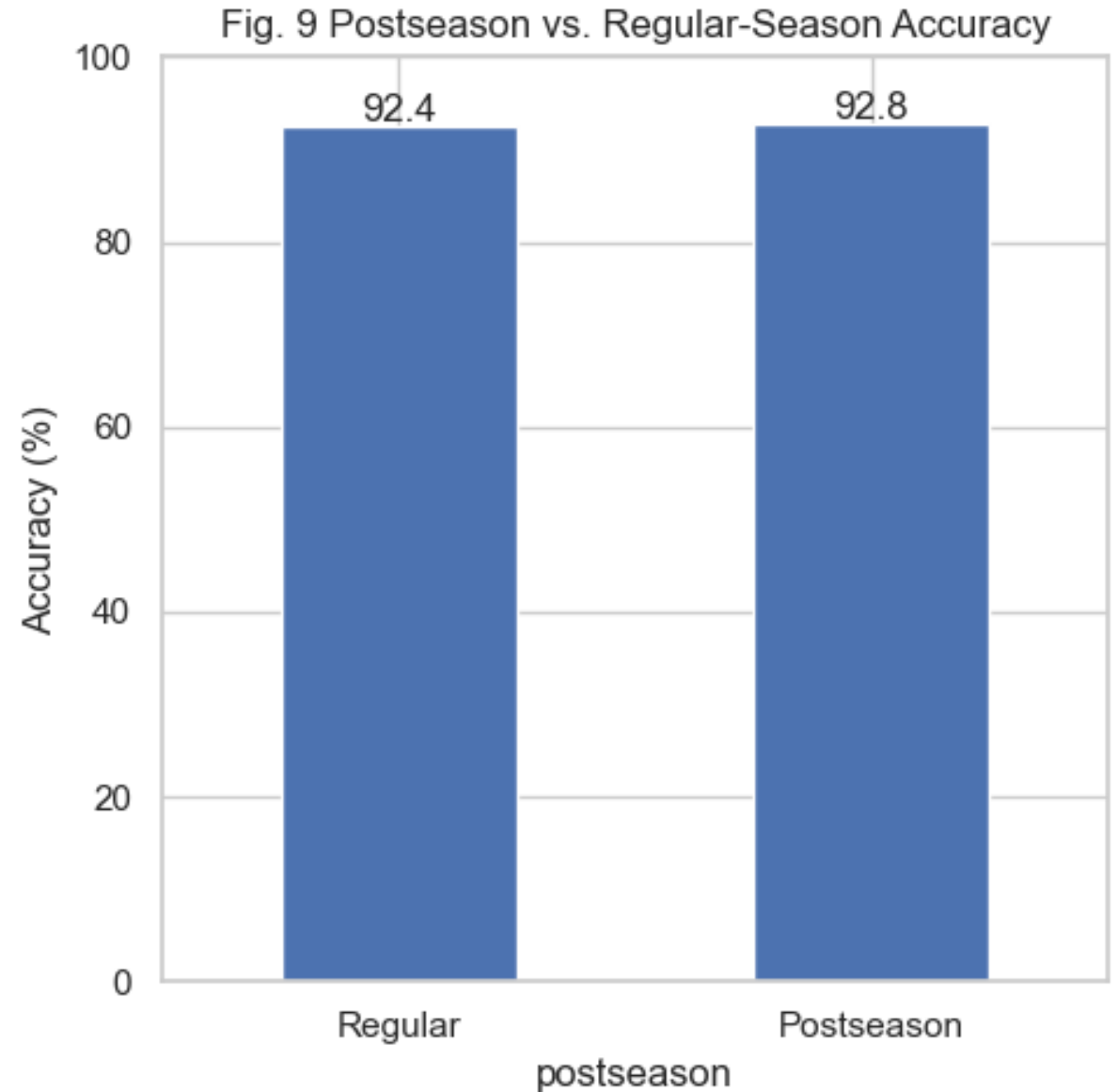 - By Experience Level

Accuracy By Game Type

- Accuracy nearly identical across game types

- Final score margin not a factor

- Suggests pressure not impacting calls here

Fig. 8 Accuracy by Game Type

	92.4	92.4	92.5
	Close	Moderate	Blowout
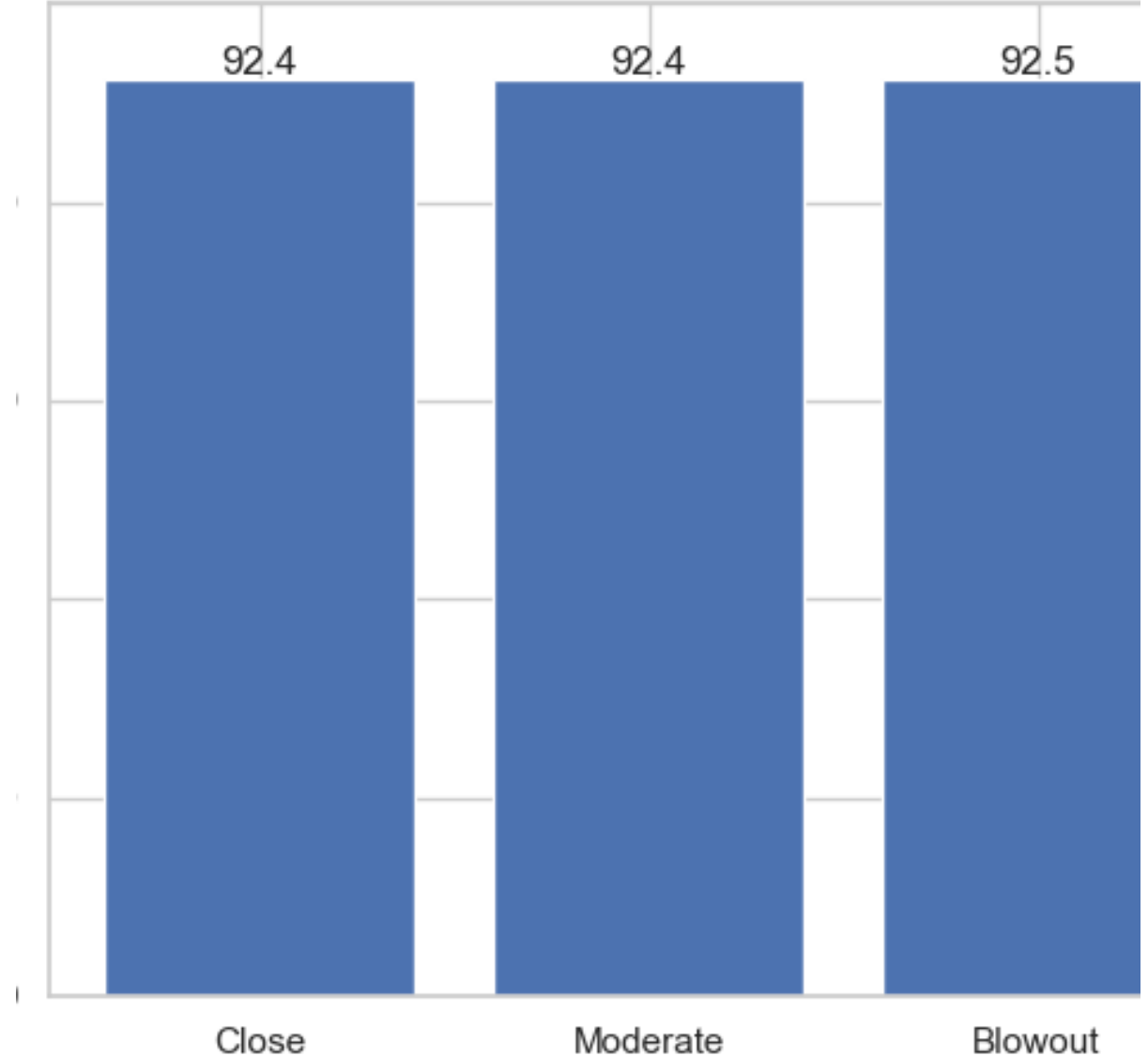
Post-Season vs. Regular Season Accuracy

- Accuracy slightly higher in postseason

- Difference is minimal (~0.4%)

Fig. 9 Postseason vs. Regular-Season Accuracy

By Experience Level

- Accuracy steady across situations

- Veteran umpires slightly higher accuracy
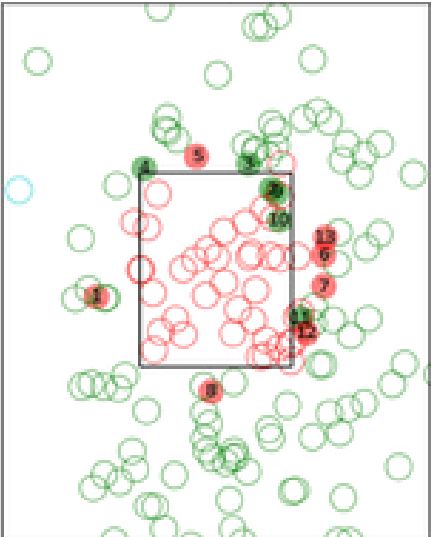
Jen Pawol's Debut
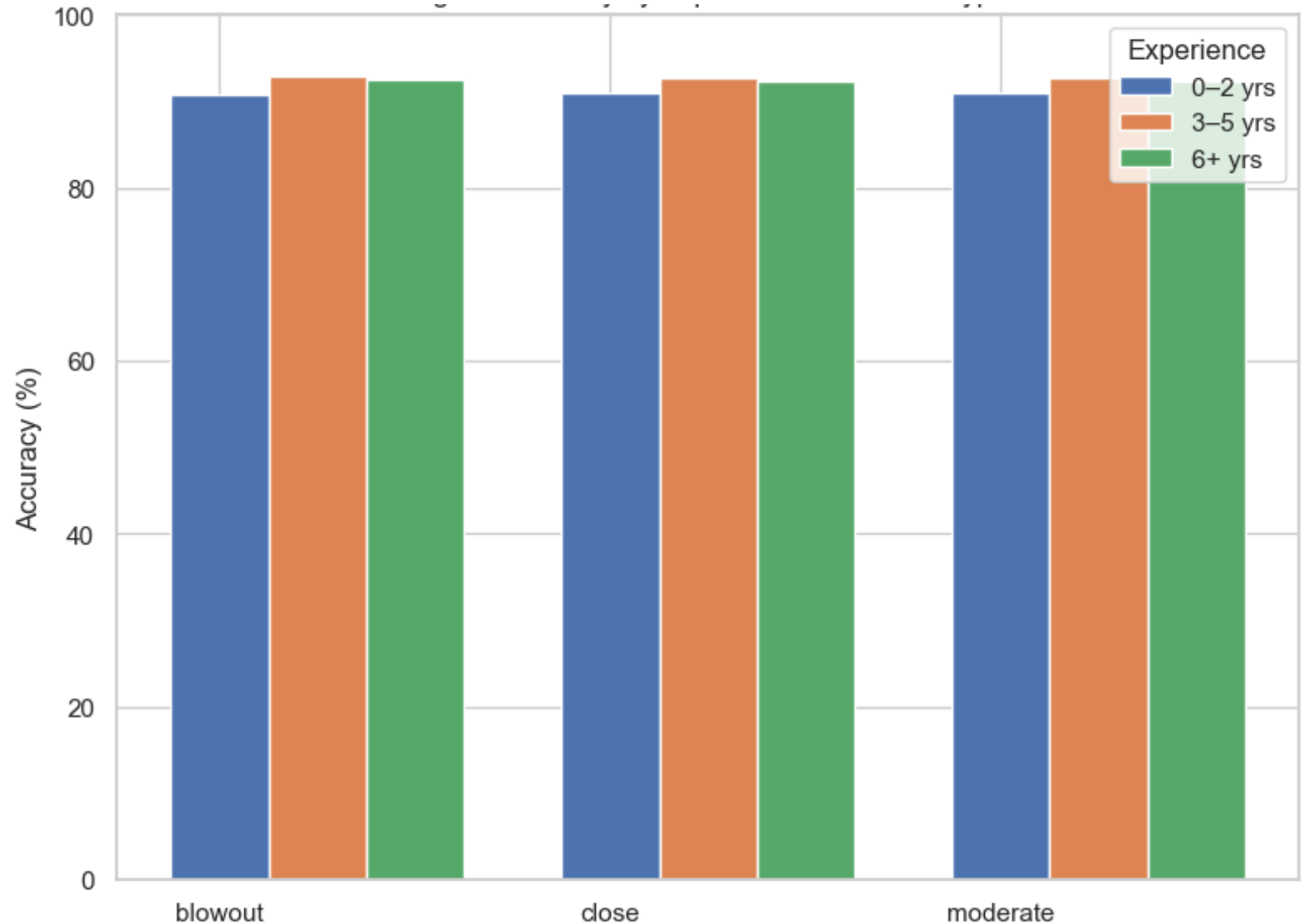
- https://www.mlb.com/video/jen-pawol-debuts-behind-the-plate (1:25-2:00)

- 140 of 151 pitches called correctly (91.45% accuracy)

- Performance within league norms for experienced umpires

- First woman to serve as MLB plate umpire in regular season

2025-08-10: Marlins 1, Braves 7
HP Umpire: Jen Pawol

Other Debut Stats

Umpire	Rookie Year	First Game Accuracy	Rookie Season Avg. Accuracy	2025 Avg. Accuracy
Alex Tosi	2019	96.69%	91.8 / 92.5 / 91.01 (next 3 games)	94.7%
Edwin Moscoso	2020	91.67%	N/A	95.1%
Malachi Moore	2020	89.38%	90.8% (over 5 games)	93.4%
Brennan Miller	2019	94.74%	N/A	93.8%
Nick Mahrley	2018	91.16%	~92% or below (over 10 games)	94.2%
Junior Valentine	2021	95.10%	N/A	95.7%
Jen Pawol	2025	92.72%	N/A	92.72%

Discussion + Takeaways

- Most MLB umpires call games within 1–2% of expected accuracy.

- Context (game type, postseason) impacts accuracy slightly, but individual judgment still matters.

- Feature importance points to run impact and consistency as key accuracy drivers.

- Rookie debut accuracy varies widely: first game ≠ long-term performance.

- Jen Pawol's debut was right in line with veteran norms.

References

- Fox News. (2025). *Historic female MLB umpire Jen Pawol's debut performance finally revealed.* https://www.foxnews.com/sports/historic-female-mlb-umpire-jen-pawols-debut-performance-results-behind-home-plate-finally

- FanGraphs. (2025). *Leverage Index explanation.* https://www.fangraphs.com/library/strategy/leverage-index/

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