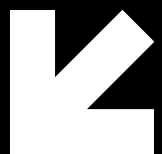


OHIO STATE HACKATHON



OPTIMIZING THE CFP AND SELECTION CRITERIA

RESEED THE 6 TEAMS AND GIVE BYES
TO THE TOP 4



PRESENTED BY BOSTON UNIVERSITY
TEJAS RAMA, SAM COWAN

CRITICISMS OF THE RECENT PLAYOFF



DAN WOLKEN | Opinion ⓘ

College Football Playoff

Add Topic +

Yes, there are College Football Playoff blowouts in first round. But fans should calm down.



Dan Wolken
USA TODAY

BLOW-OUTS

College Football Analyst Rips CFP Committee for 'Making Up' Criteria

College football's first playoff rankings sparked widespread criticism

MAX DIBLE • NOV 8, 2024 4:44 PM EST

SUBJECTIVE CRITERIA

College Football Playoff byes are already being blamed for wonky quarterfinal results

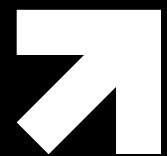
Maybe first-round byes in the College Football Playoff isn't the best way to honor league champs?

By John Buhler | Jan 1, 2025

UNFAIR BYES



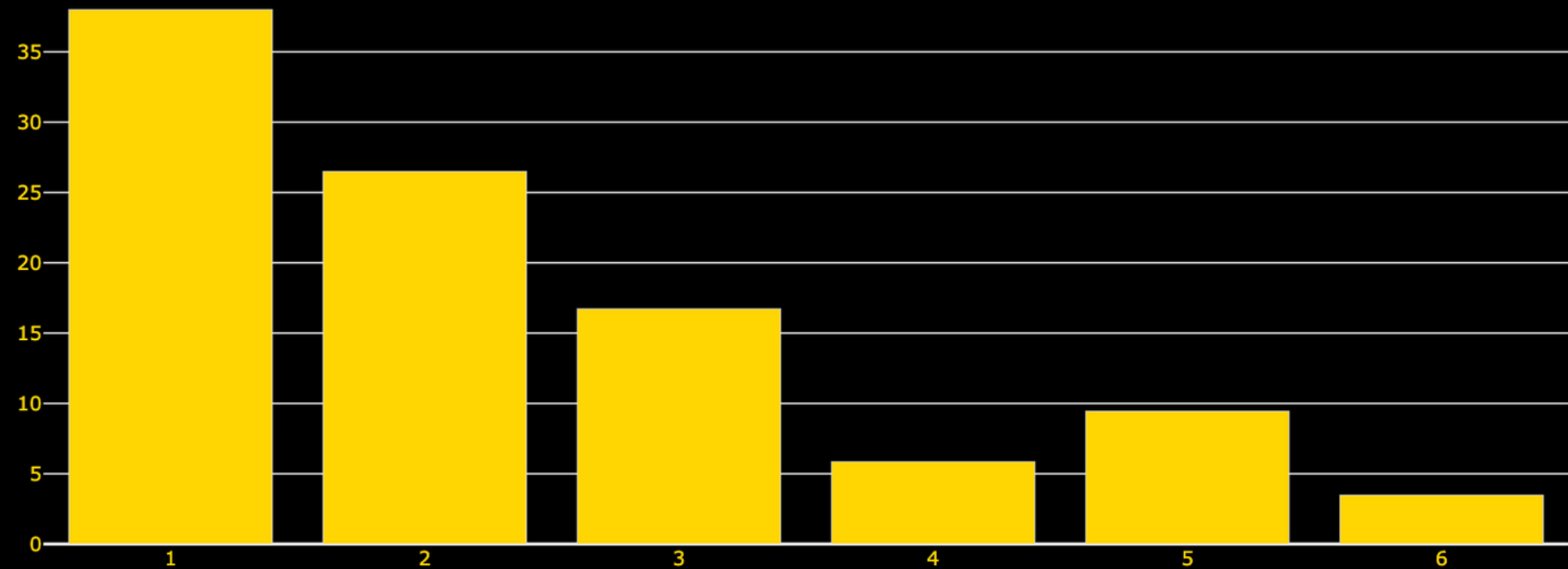
OUR 6-TEAM REESEEDED PLAYOFF FORMAT



BYES GO TO THE RESEEDED TOP 2 TEAMS

Cumulative Average Simulated Win% by Seed Over the Last 6 Seasons

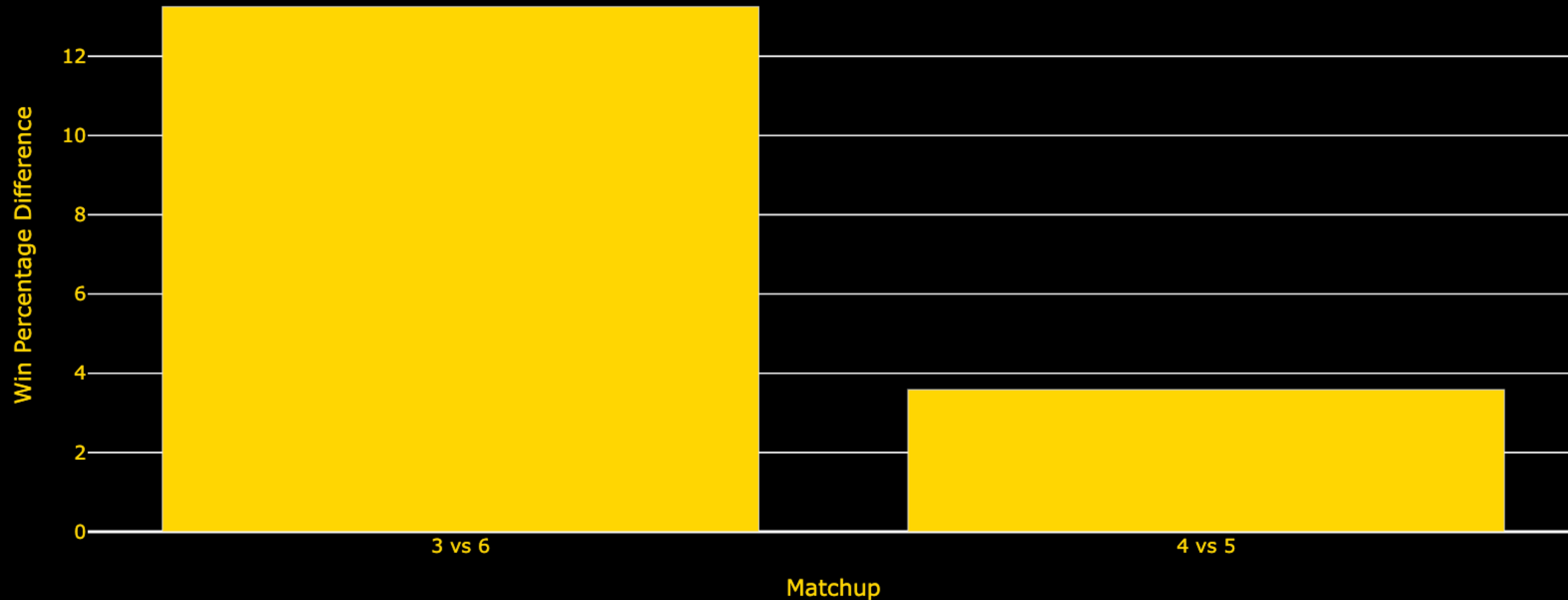
AVERAGE WIN%



OUR PROPOSED SOLUTION -
REESED THE 6 TEAMS AND
GIVE BYES TO THE TOP 2

DID THE PLAYOFF COMMITTEE
CHOOSE THE WRONG 4TH
SEED HISTORICALLY?

Win Percentage Differences (Reseeding, Top 2 Byes, 3-6 Matchups)



COMPETITIVE EQUITY

Our results show that 4 and 5 seeds are very evenly matched, with a simulated win probability near 50/50

3 vs 6 matchups are slightly more skewed (56-44) but still should produce entertaining matchups

All matchups are “fair” when taking seedings into context



4.8 MILLION PLAYOFF SIMULATIONS

Brackets Considered

Teams	Format
4	Old System
6	1 & 2 get byes
8	3 Rounds
10	7-10 play-in
12	Current System
16	4 Rounds
32	5 Rounds
64	6 Rounds

Seeding/Team Selection:

- Number of Automatic Bids for Conference winners: 0, 2, 4, 5, or 6
- Number of top seeds given to auto bids: 0, 2, 4, or 6
- Current Playoff Format - 12 team, 5 auto bids, 4 top seeds

Simulations:

- We ran 10,000 simulations of every possible format using teams from 2018-present (excl. 2020)
- CFP Committee rankings + Conference Winners used to determine seeds
- CFBD ELO for win probabilities (based on historical and in-season data)

2025 PLAYOFFS REVISITED:

CURRENT FORMAT (12/5/4) VS PROPOSED 6 TEAM FORMAT

Configuration: 5 automatic bids, 4 top seed bids

Team	Seed	Wins	Win Percentage
Notre Dame	7	3377	33.8%
Texas	5	2115	21.1%
Ohio State	8	2013	20.1%
Oregon	1	1154	11.5%
Georgia	2	716	7.2%
Penn State	6	350	3.5%
Tennessee	9	164	1.6%
Indiana	10	61	0.6%
Clemson	12	24	0.2%
SMU	11	22	0.2%
Boise State	3	4	0.0%
Arizona State	4	0	0.0%

Average Margin of Victory: 4.89

Configuration: 2 automatic bids, 0 top seed bids

Team	Seed	Wins	Win Percentage
Notre Dame	5	2861	28.6%
Oregon	1	1952	19.5%
Texas	3	1713	17.1%
Ohio State	6	1632	16.3%
Georgia	2	1394	13.9%
Penn State	4	448	4.5%

Average Margin of Victory: 2.88

MINIMIZING SUBJECTIVITY



$$Goodness = \sum_{\text{playoff teams}} \text{projected win\%} * \frac{z_{SP+} + z_{SRS} + z_{FPI}}{3} + 0.35 * (O_{Boom} - O_{Bust}) + 0.1 * SOS\% - 0.25 * AvgMarginVictory$$

The Intuition: Better and funner teams should be more likely to win in the playoffs

Reward: formats where the best teams win more

Reward: formats with more big plays

Penalize: formats with more blowouts

Key

- Average Margin of Victory (estimated with linear regression)
- OBoom = Offensive Boom Rate
- OBust = Offensive Bust Rate
- SOS% = Strength of Schedule percentile (higher is harder schedule)



TOTAL GOODNESS RESULTS



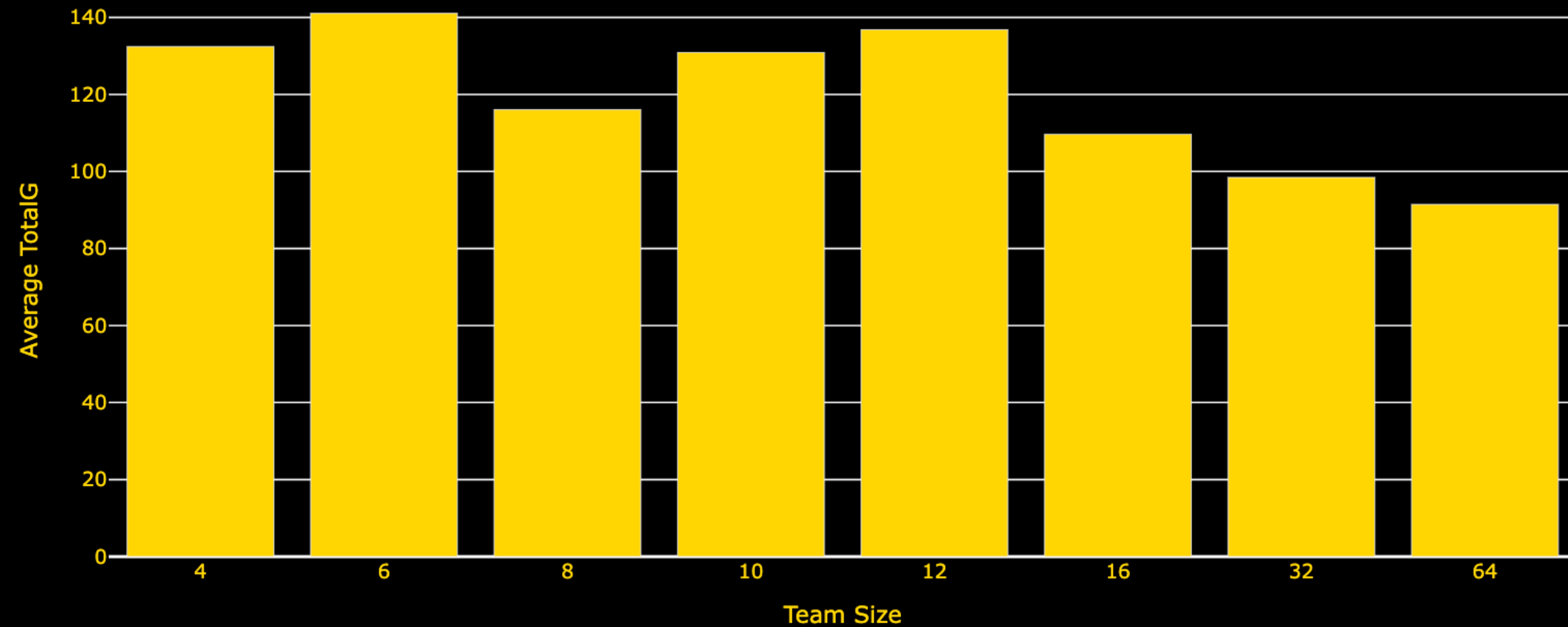
Team Size	Automatic Bids	Top Seed Bids	TotalG	Z Score
6	2	0	175.13	3.73
4	2	2	169.34	3.42
6	0	0	169.1	3.41
6	4	2	154.42	2.63
6	4	4	150.6	2.43
12	4	0	143.45	2.05
12	5	2	141.73	1.96
6	5	0	141.71	1.95
6	5	4	139.06	1.81
12	6	0	129.42	1.3
12	6	2	126.72	1.16
12	6	4	119.47	0.77



TOTAL GOODNESS RESULTS



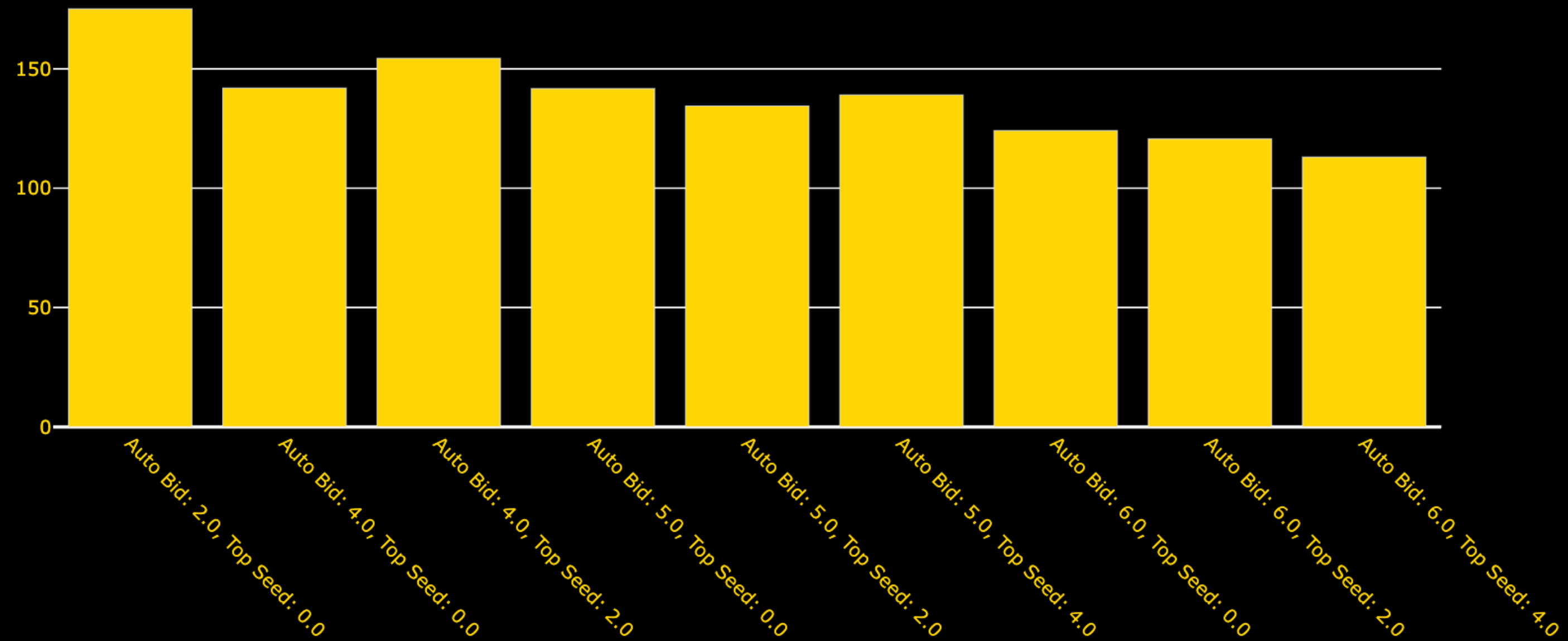
Average TotalG Comparison for Different Team Sizes



TOTAL GOODNESS RESULTS



Comparison of TotalG for Different Bids (6 Teams)



CONCLUSION

CRITICISMS

Blowouts, subjective criteria, and the process of allocating byes has left people with an unsatisfactory college football playoff format

OUR 6-TEAM RESEEDDED PLAYOFF FORMAT

Makes sure that byes are awarded to the best two teams instead of arbitrarily to conference winners

DISMISSING SUBJECTIVITY

Our total goodness formula considers objective indicators of team performance to rank playoff systems on how good the included teams are

THANK YOU!

