

Combine Performance vs NFL Success



Hypothesis

- Do NFL Combine statistics accurately forecast success in the league?
 - If so, can teams accurately predict which players will be successful in this prominent league?
 - Which players from this year's draft will be successful in the NFL?
- Forty time is meaningful
- Bench press for defenders will correlate
- Quarterback combine stats will not!



Methods

Positions analyzed

- Quarterbacks
- Wide Receivers
- Edge Rushers
- 2018-2019 statistics

Correlation Steps

- X Value = Combine Statistic
 - Forty, Vertical, Bench Reps, Broad Jump, 3 Cone, Shuttle
- Y Value = NFL Statistic
 - PFF Grade is formed after a group of analysts come together and grade each player's game performance
- Scatter plots created to display relationship between current NFL ratings and combine statistics

Procedure for Quarterbacks

- Starting QB's from the last two seasons
- Combine results (excluding bench press)
- QBR, Passer Rating
- Pro Football Focus Grade



Wide Receivers

- Top 2 receivers on each team
- Combine Results
- YPG, DVOA, DYAR, YPR
- Pro Football Focus Grade

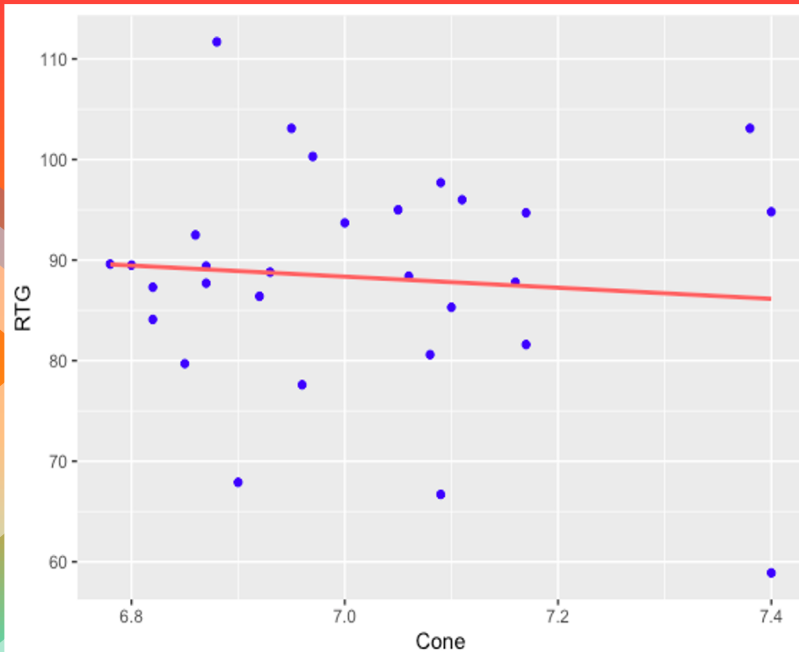


Edge Rushers

- Top 2 Edge Rushers on each team
- Combine results
- Pro Football Focus Grade
- Pass Rush and Run Defense Grade
- 2018 Sacks and Tackles

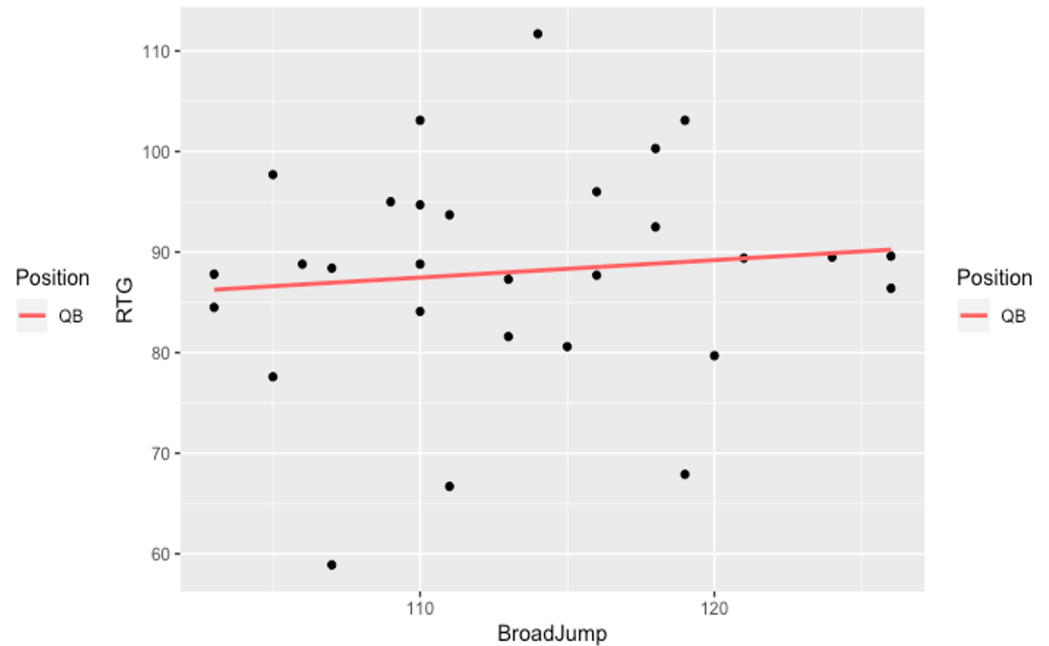


Cone vs. Passer Rating



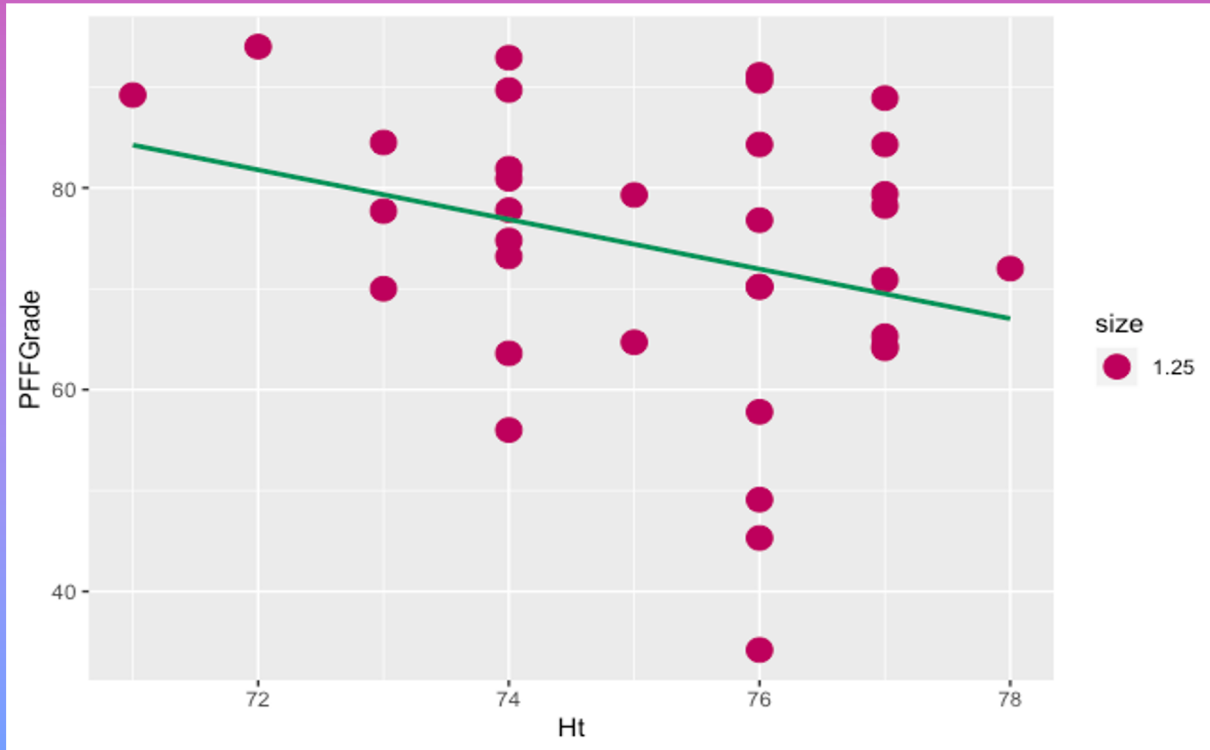
$r = .48$

Broad Jump vs. Passer Rating



$r = .47$

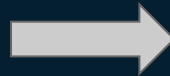
Does Height Matter in a Quarterback?



$r = .29$

What can we learn about QB's here?

- Sample size is small
- Cone Drill and Broad Jump > Fourty
- Height + Weight little correlations

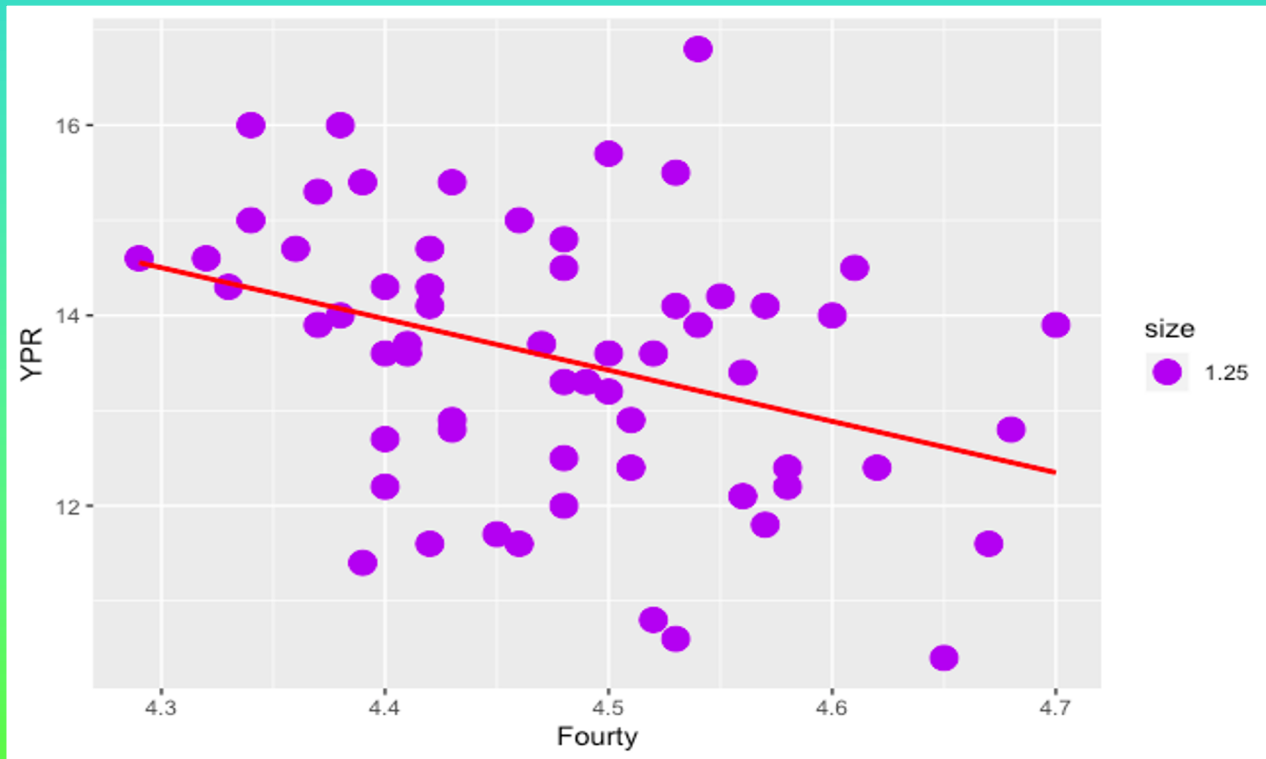


The Forty vs. PFF Grades WR



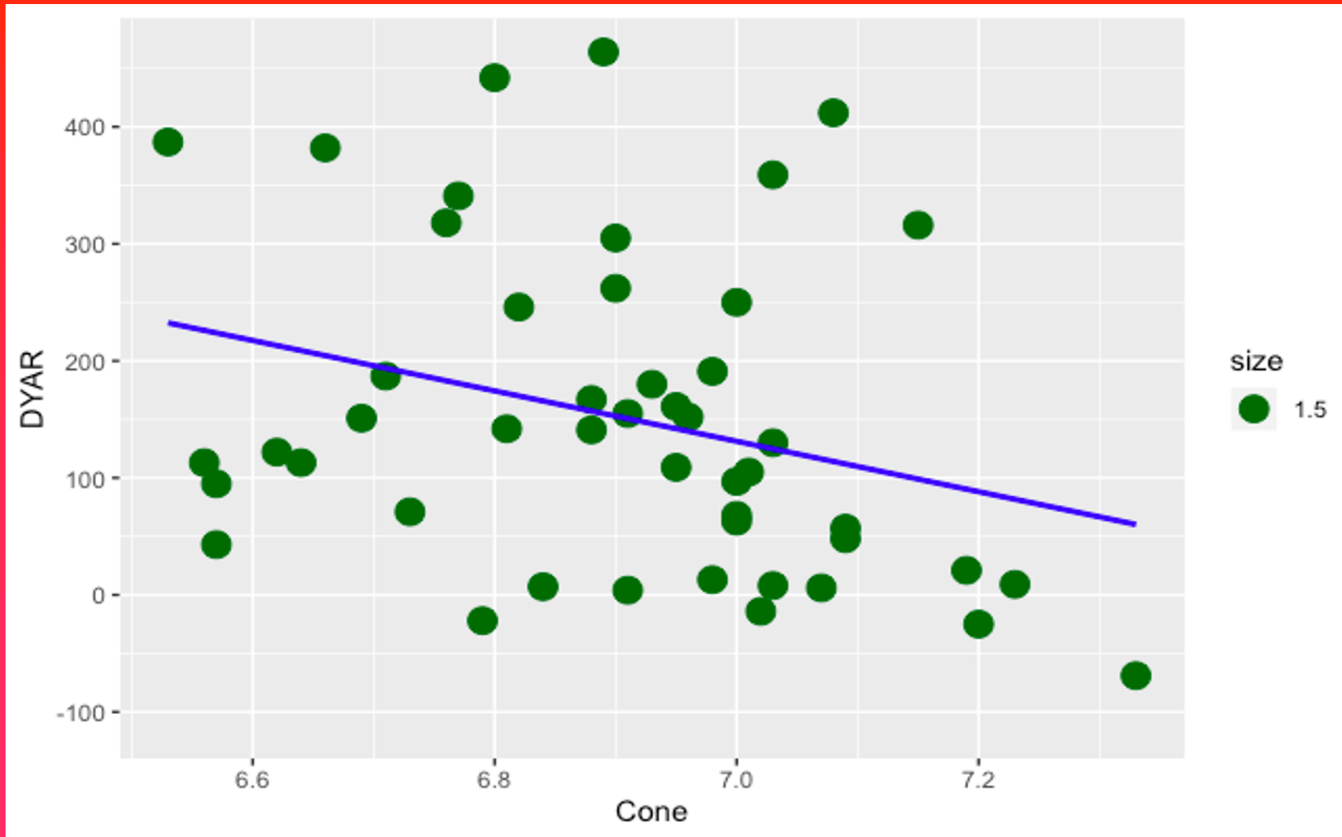
$r = .18$

The Forty vs. YPR



$r = .34$

Cone Time vs. DYAR



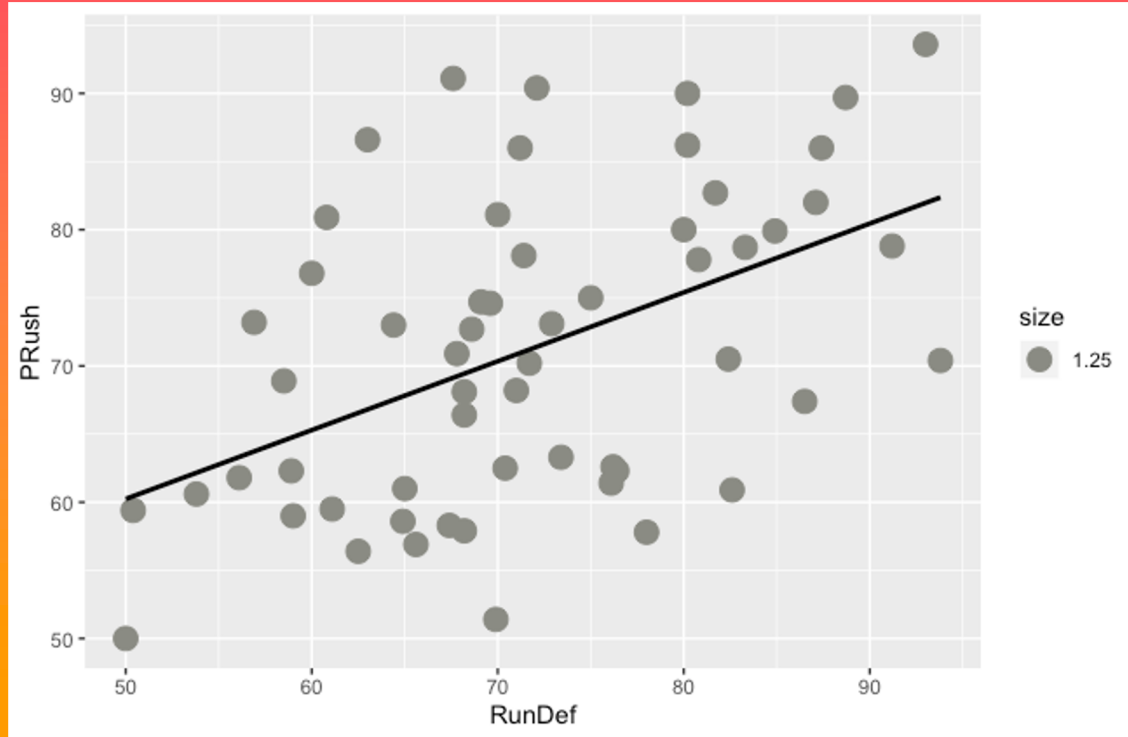
$r = .43$

Takeaways for Receivers

- Combine Stat most associated with NFL Stat= Cone
- Height + Weight = Unpredictable!
- Forty Time = Unpredictable!
 - John Ross

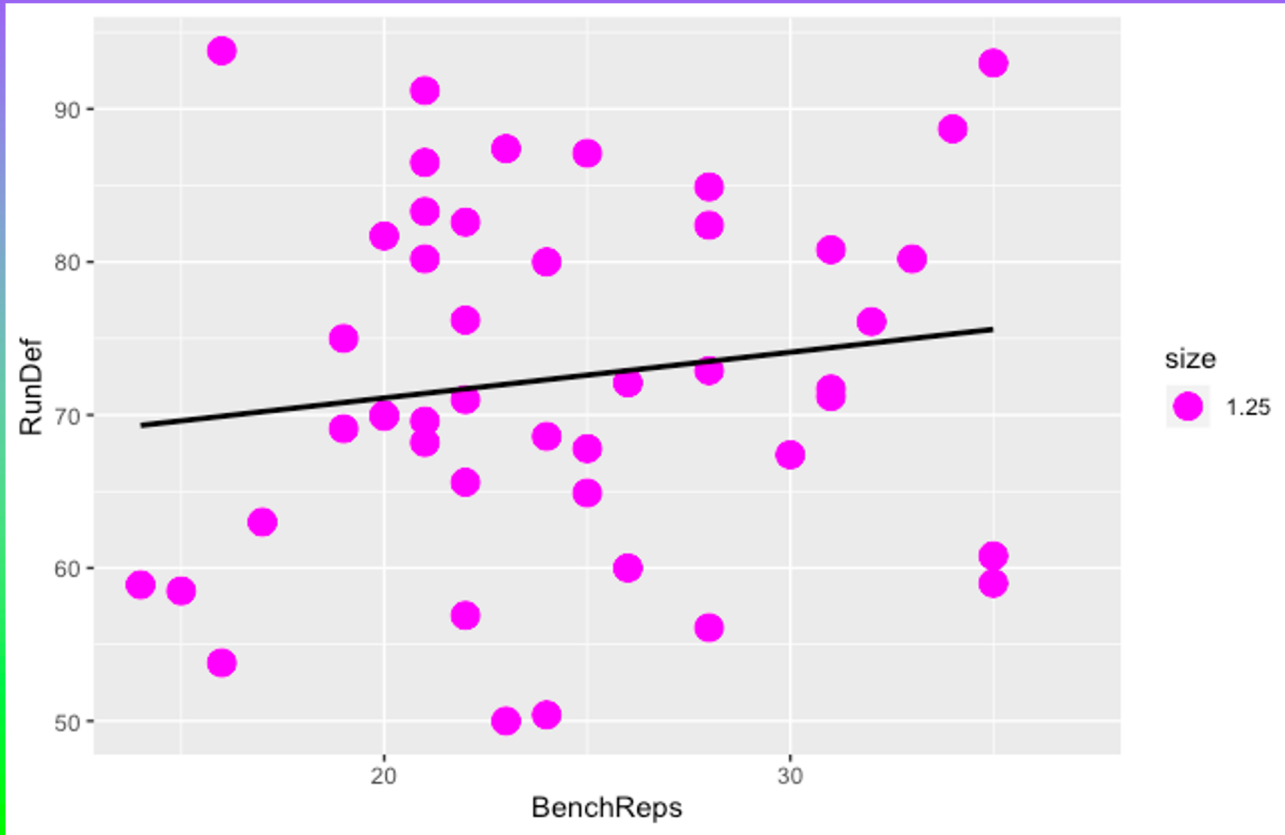


First: Run Stopping vs. Pressure



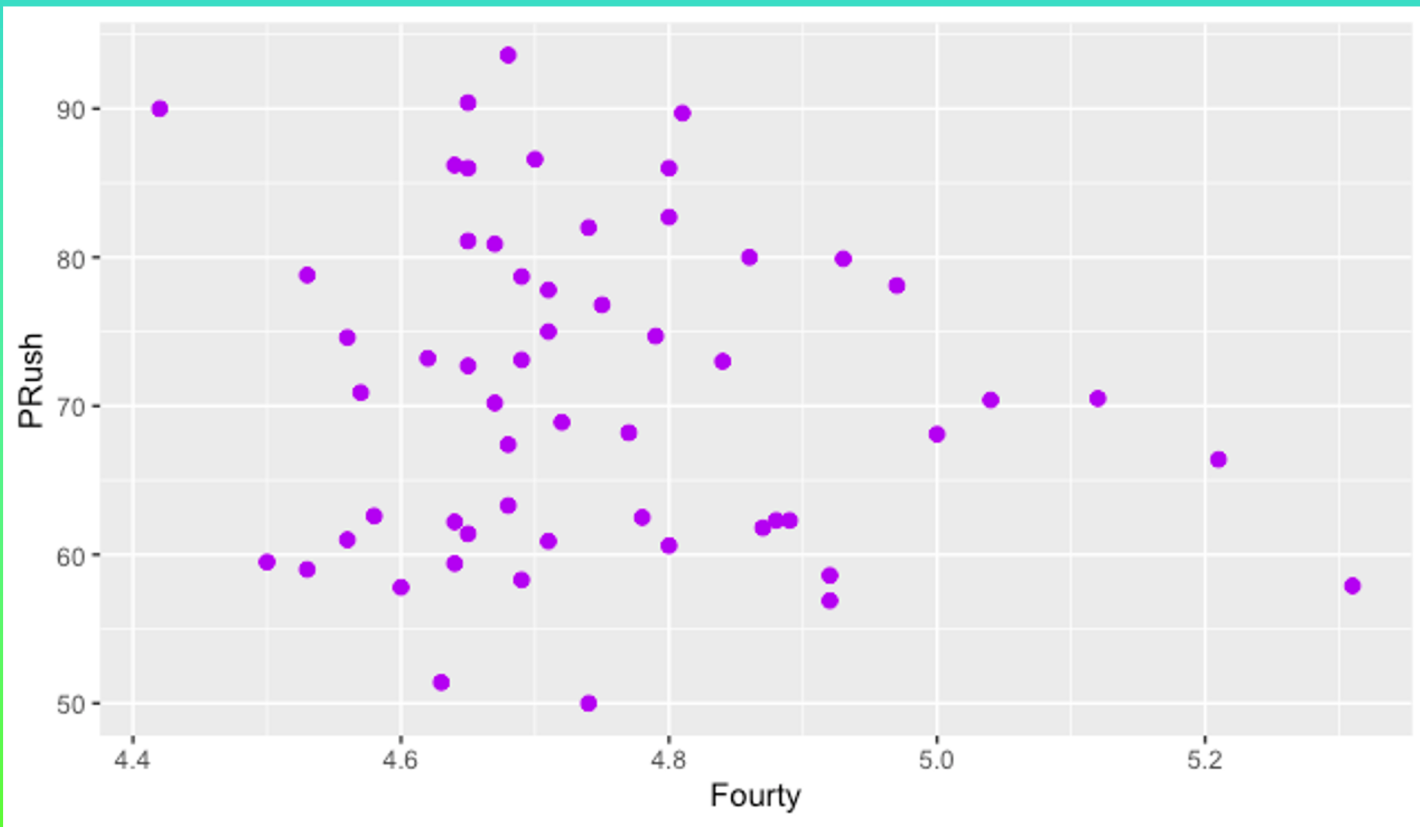
$r = .48$

Edge Rushers: Bench Reps



R = .4

Forty Times and Pass Rush



$r = .26$

Edge Rusher Summary

- Extremely unpredictable!
- Bench Press is best correlation



2019 Prospect Projections

- Graphs with highest r used
- Regression Line Formula

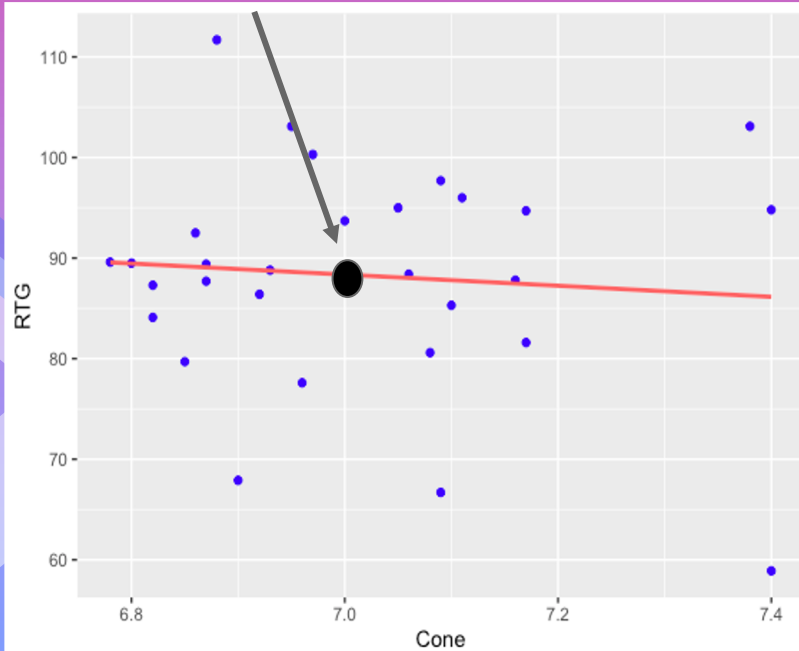


Daniel Jones, QB

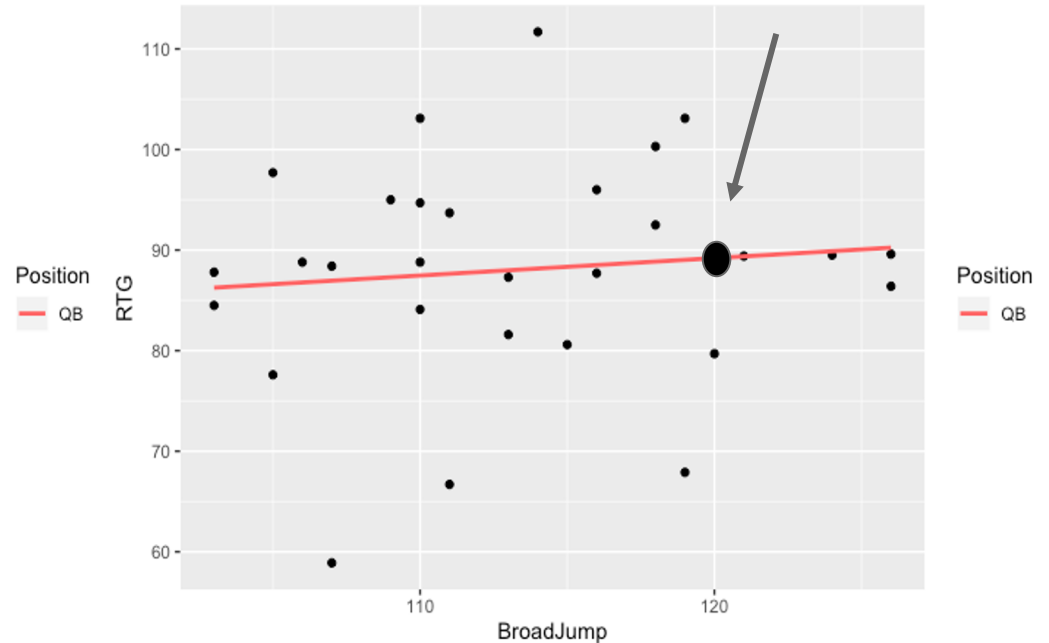
- Height: 76 in
- Weight: 215 lb
- 40 time: 4.81 seconds
- Broad Jump: 120 inches
- Cone: 7 seconds
- Vertical: 33.5 inches



Where might he be?



$$\hat{Y} = -5.52x + 127$$



$$\hat{Y} = .17x + 68.45$$

Daniel Jones Projection

- From Cone time = Predicted Passer Rating of 88
- From Broad Jump = 89
- NFL QB's with that?
 - Matthew Stafford, DET
 - Derek Carr, OAK

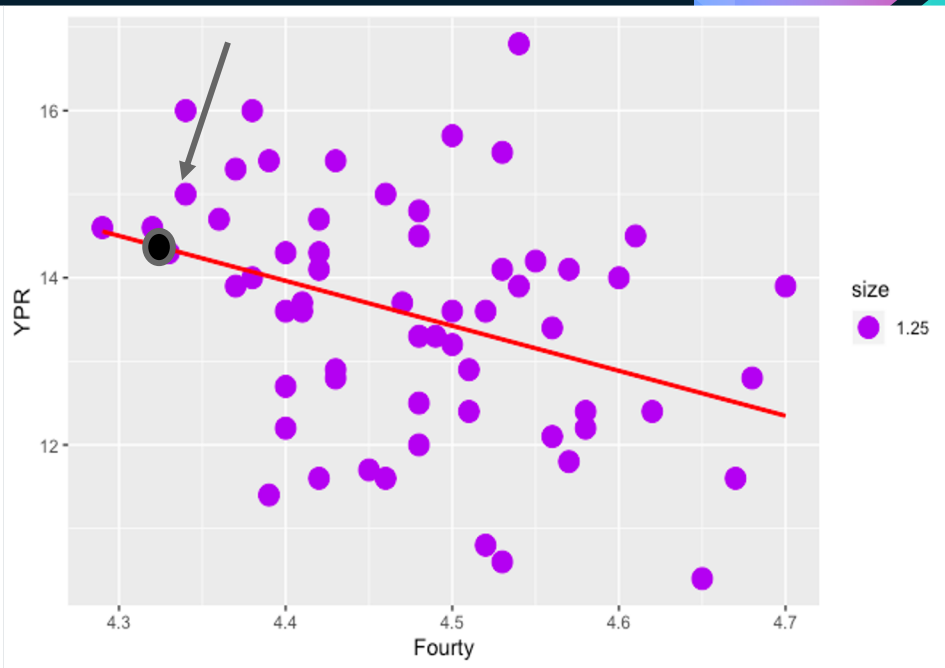
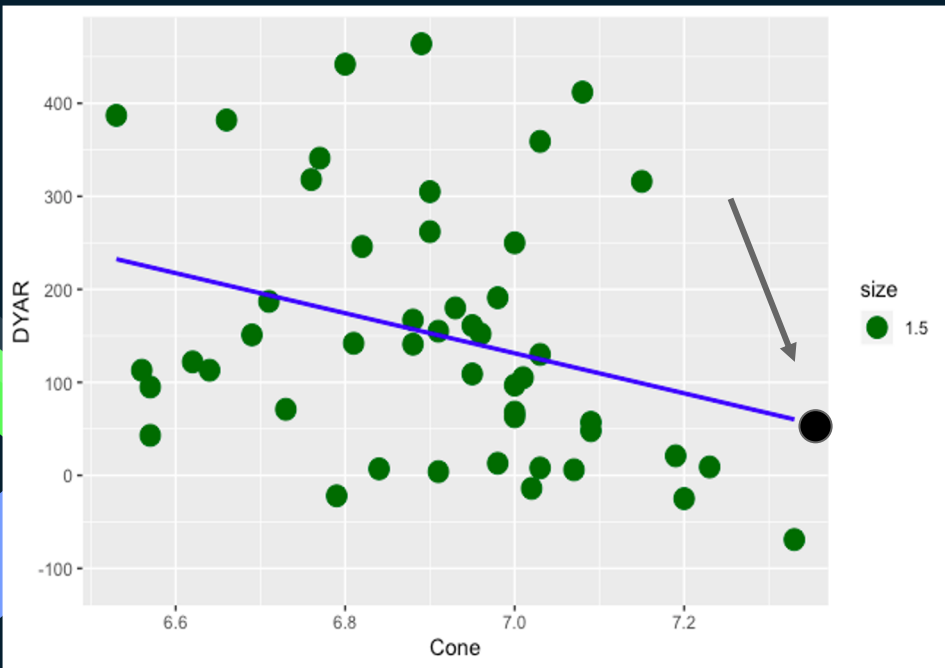


D.K. Metcalf, WR

- Height: 75 in
- Weight: 228 lb
- 40 time: 4.33 s
- Broad Jump: 134 in
- Cone: 7.38 s
- Vertical: 40.5 in
- Shuttle: 4.5 s
- Bench: 27 reps



What can he be?



$$\hat{Y} = -215.4x + 1638.9$$

$$\hat{Y} = -5.38x + 37.7$$

D.K. Metcalf Projection

From Cone time = DYAR ~ 49

- › Paul Richardson

From Forty time = YPR ~ 14.4

- › Alshon Jeffery
- › Kelvin Benjamin



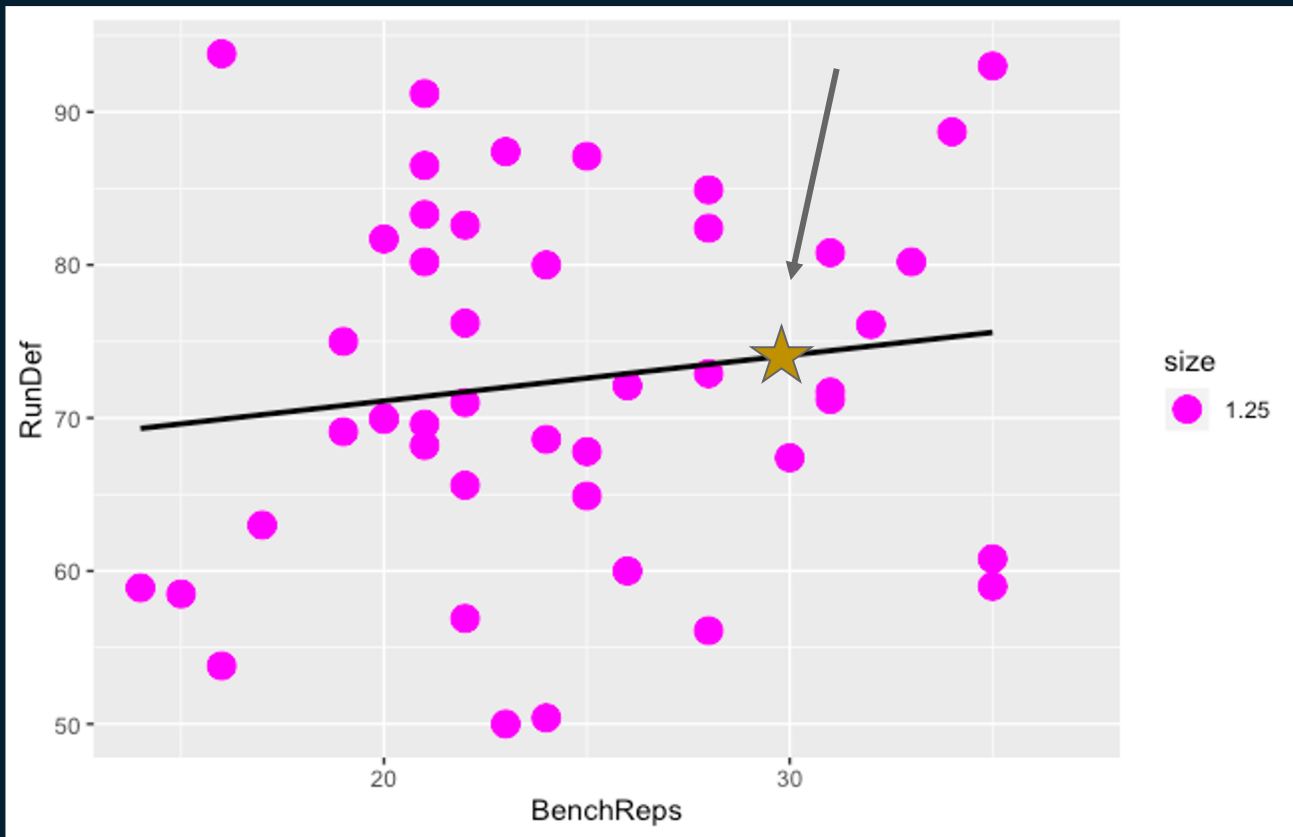
Nick Bosa, DE

- Height: 76 in
- Weight: 266 lb
- 40 time: 4.79 s
- Broad Jump: 116 in
- Vertical: 33.5 in
- Cone: 7.1 s
- Shuttle: 4.14 s
- Bench: 29 reps



Where is he?

$$\hat{Y} = .3x + 65.1$$



Nick Bosa Run Defense Projection

Pro Football Focus Grade Projection: 73.8

- › Jabaal Sheard
- › Melvin Ingram



Conclusion

- › Difficult to predict performance
- › Cone times showed largest correlation
- › Sample size was small
- › Teams should take combine lightly!

