Time Trends

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Introduction

- Sally Oberle
  - Director of Advancement Services
- Juniata College Contributions Data
  - Focus on last 5 Fiscal Years
  - Contains data from donors and athletes

Goals

- Is Alumni Engagement Level independent of Sports Played?

- Does the number of contributions vary by Fiscal Year?

- Does the average number of contributions vary by Fund?

- Did the number of contributions differ Pre and Post Covid?

Results and Discussion

What proportion of alumni are in each of the loyal, lybunt, sybunt, non-donor, and never-ever categories? Does it vary by team?
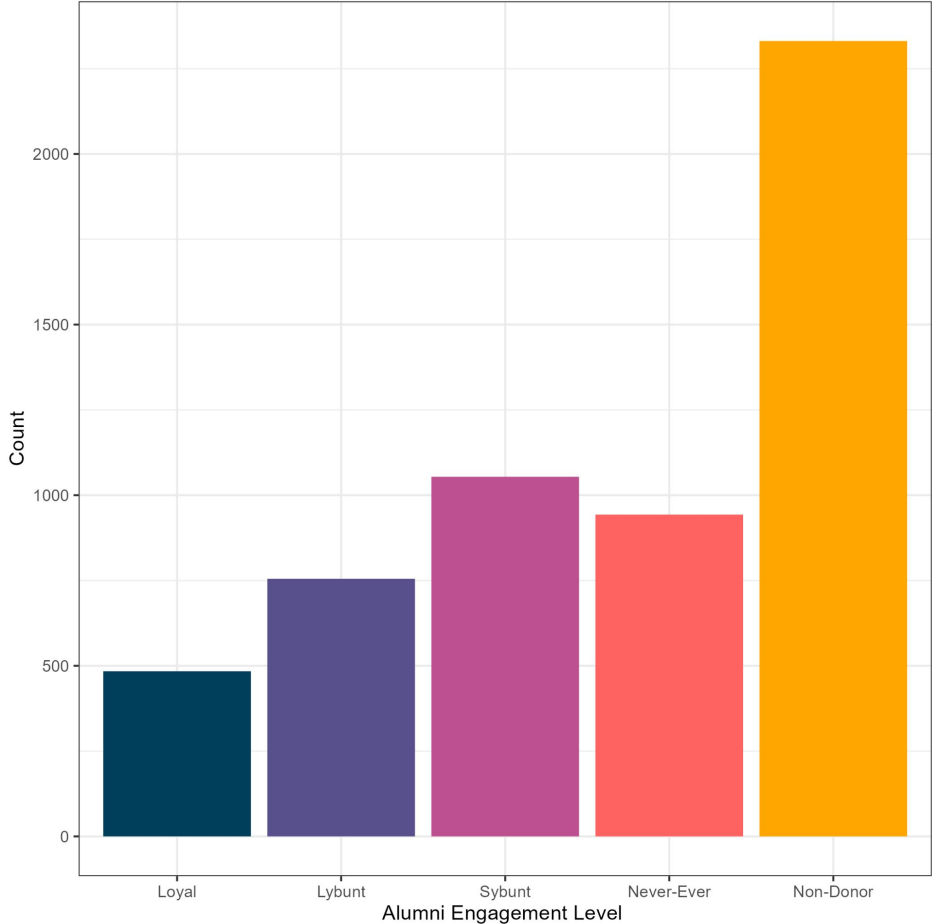
Alumni Engagement Level

- **LOYAL**: Last five years are all > 0
- **LYBUNT**: Not a LOYAL, last year > 0
- **SYBUNT**: Last year = 0, at least one year in YR2-YR5 >0
- **NON-DONOR**: Lifetime giving > 0, last five years = 0
- **NEVER-EVER**: Lifetime giving = 0

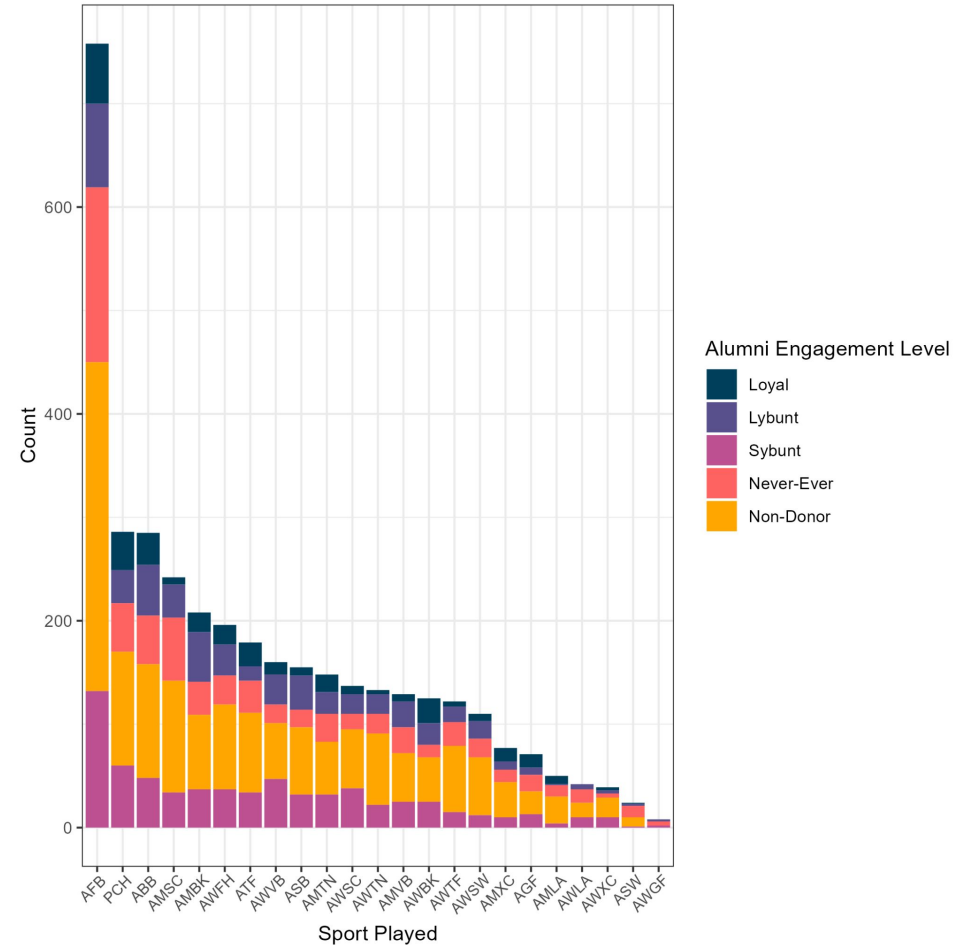|	Lifetime	CYR	YR5	YR4	YR3	YR2	YR1
Loyal			X	X	X	X	X
Lybunt			X				
Sybunt			0	At least one > 0			
Non-Donor	>0		0	0	0	0	0
Never-Ever	0		0	0	0	0	0

Alumni Engagement Level Counts

- Non-Donor is the most common with 2,331 alumni
- Loyal is the least common with 484 alumni

Singular Alumni Engagement Level Breakdown for Each Sport Played

- AFB(Football) has the highest # of Alumni with 758 alumni and non-donor makes up the greatest percentage with 42%
- Non-donor most consistent across all
- Graph suggests Alumni Engagement Level may be independent of Sport Played

Alumni Engagement Level VS Sport Played

Chi-Square

- Hypothesis
  - H_0: Alumni Engagement Level and Sports Played are independent
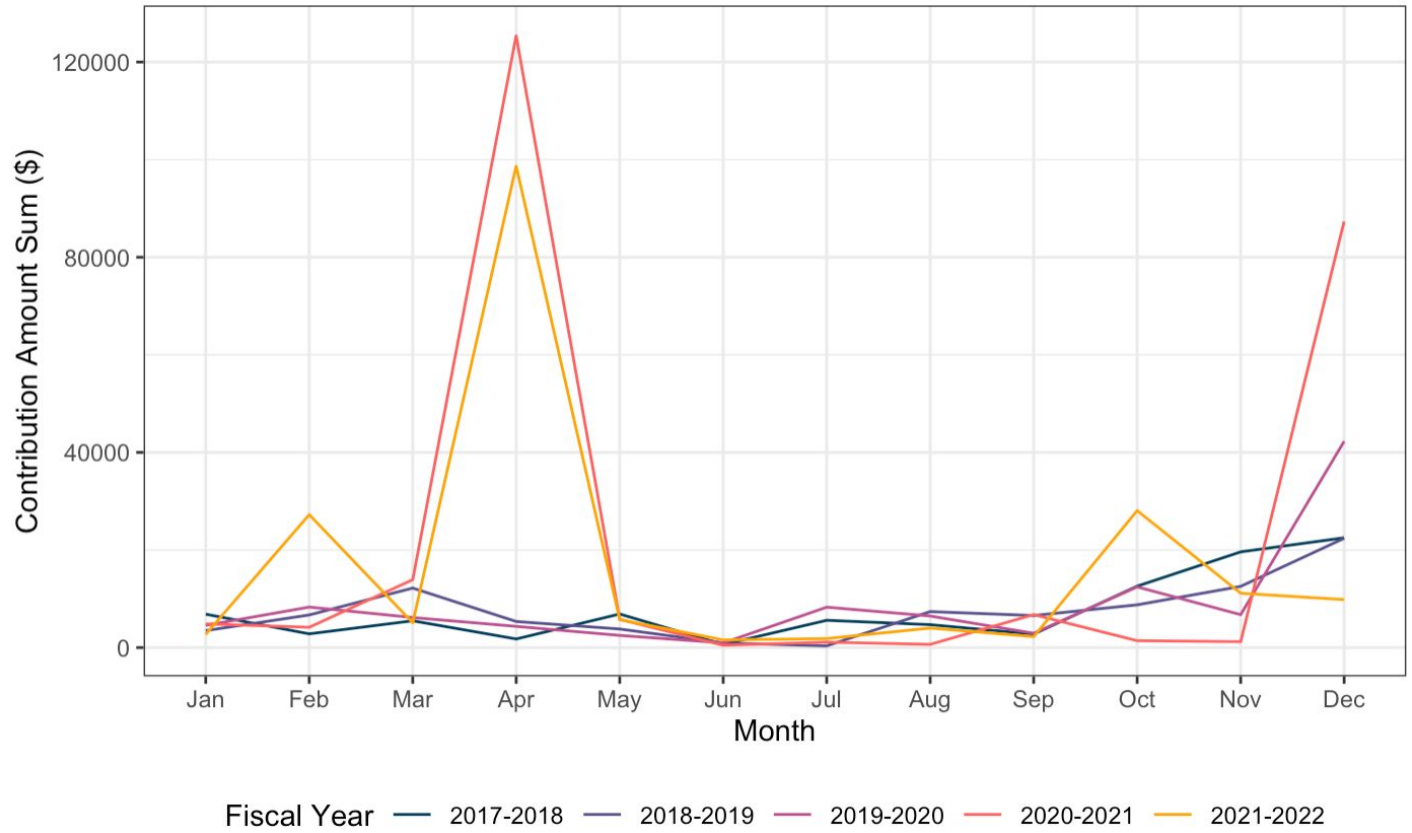 - H_A: Alumni Engagement Level and Sports Played are dependent.

Results

- p-value lower than 0.05 was found
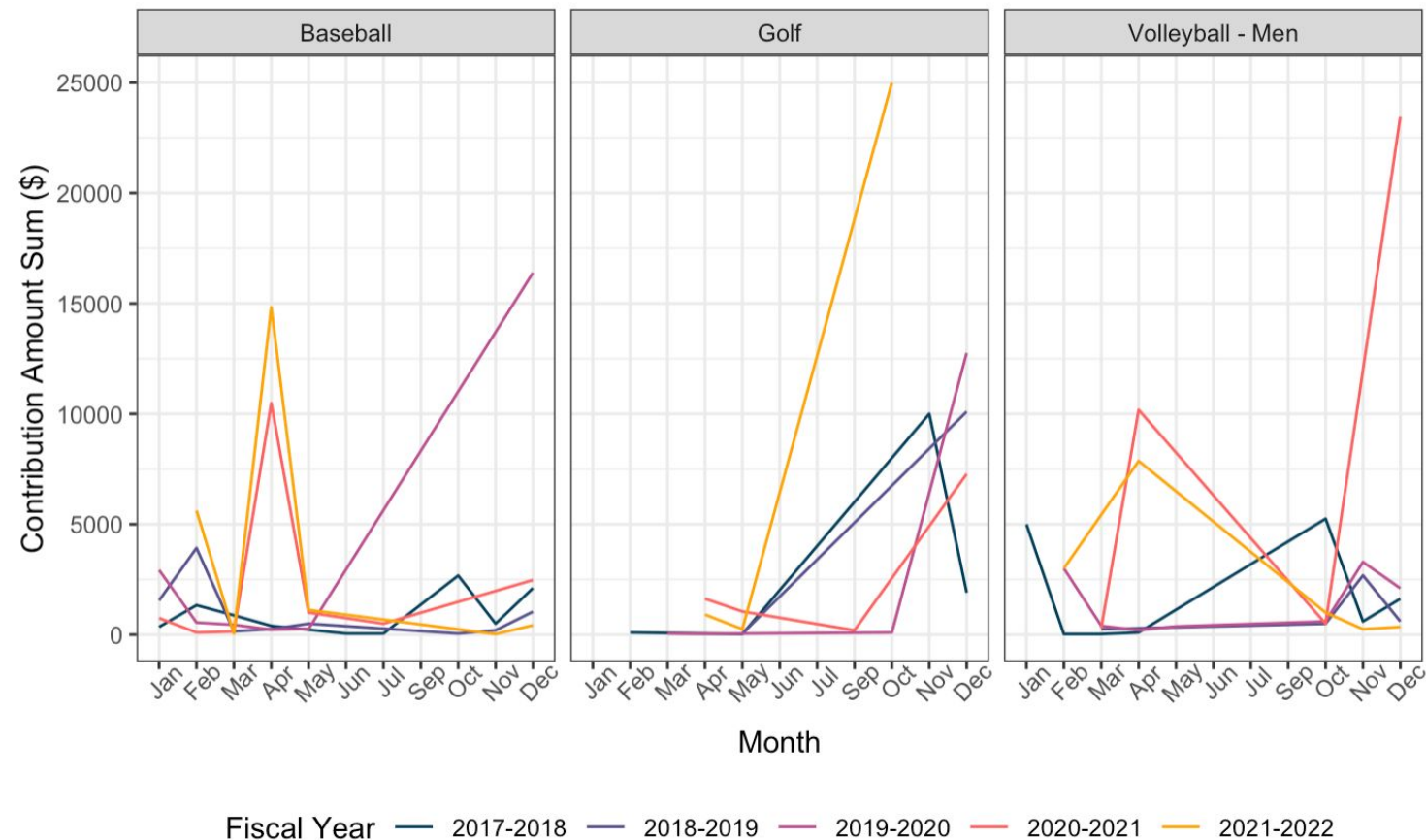- This indicates that we reject H_0

What time of year are most contributions to athletics made? Does it vary by Fiscal Year? Does it vary by Fund? Is it different Pre-Covid and Post-Covid?

Contribution Over Time

- **Top 3 Months Pre-Covid:**
  - 2017-2018: Dec, Nov, Oct
  - 2018-2019: Dec, Nov, Mar
  - 2019-2020: Dec, Oct, Nov
- **Top 3 Months Post-Covid:**
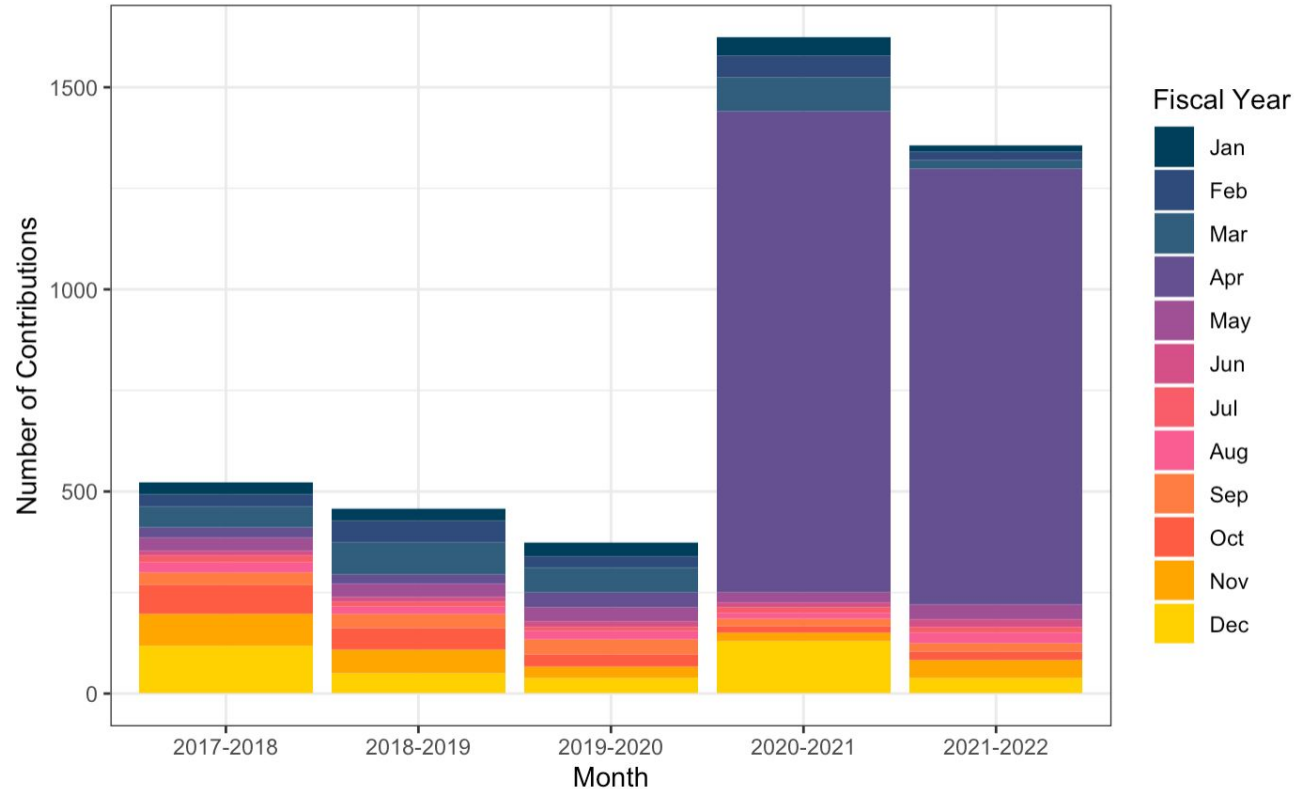 - 2020-2021: Apr, Dec, Mar
  - 2021-2022: Apr, Oct, Feb

Top Three Funds Based on Contribution Amount Sum

Baseball | Golf | Volleyball - Men

Contribution Amount Sum ($)

Month

Fiscal Year — 2017-2018 — 2018-2019 — 2019-2020 — 2020-2021 — 2021-2022

Number of Contributions Over Time

- **Top 3 Months Pre-Covid:**
  - 2017-2018: Dec, Nov, Oct
  - 2018-2019: Mar, Nov, Dec
  - 2019-2020: Mar, Dec, Sep
- **Top 3 Months Post-Covid:**
  - 2020-2021: Apr, Dec, Mar
  - 2021-2022: Apr, Nov, Dec

What are the average sizes of contributions to Funds? Did it change Pre-Covid and Post-Covid?

Average Contribution Amount

- **Highest**: Golf
  - Amount- $1,489.38
- **Lowest**: Women's Soccer
  - Amount- $40.87

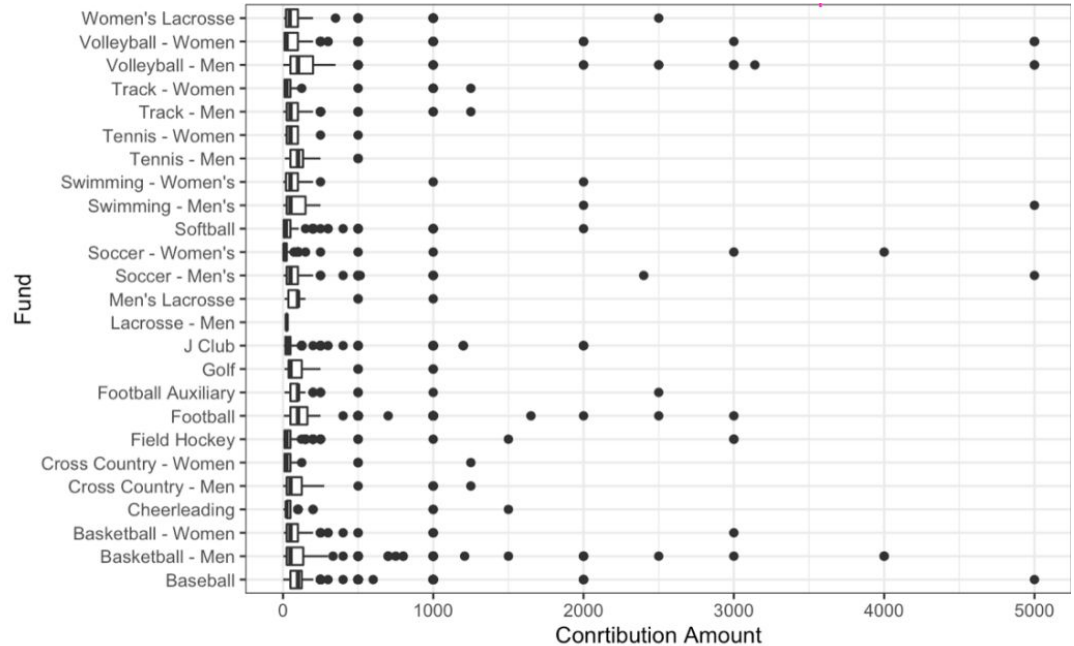| Fund	Average Amount
Golf	1,489.38
Swimming (M)	474.47
Volleyball (M)	440.21
Football Auxiliary	239.62
Basketball (M)	233.66
Baseball	216.10
Football	193.86
Lacrosse (W)	173.15
Cross Country (M)	167.10
Soccer (M)	162.74
Volleyball (W)	153.41
Lacrosse (M)	142.50
Basketball (W)	121.82
Tennis (M)	154.92
Track (M)	108.89
Cross Country (W)	108.84
Track (W)	100.13
Swimming (W)	164.38
Cheerleading	94.21
Tennis (W)	91.62
Softball	87.53
J Club	87.76
Field Hockey	81.89
Soccer (W)	40.87

Median Contribution Amount

- The median is much less compared to the mean
- Some large contributions make a big difference in average gift size
- This means that the data is positively skewed (right-skewed)
- Hence, most values are clustered around the left tail of the distribution while the right tail would be longer

Fund	Average Amount	Median
Golf	1,489.38	100
Swimming (M)	474.47	50
Volleyball (M)	440.21	100
Football Auxiliary	239.62	100
Basketball (M)	233.66	50
Baseball	216.10	100
Football	193.86	100
Lacrosse (W)	173.15	45
Cross Country (M)	167.10	50
Soccer (M)	162.74	50
Volleyball (W)	153.41	25
Lacrosse (M)	142.50	100
Basketball (W)	121.82	50
Tennis (M)	154.92	100
Track (M)	108.89	50
Cross Country (W)	108.84	25
Track (W)	100.13	25
Swimming (W)	164.38	50
Cheerleading	94.21	25
Tennis (W)	91.62	50
Softball	87.53	20
J Club	87.76	30
Field Hockey	81.89	25
Soccer (W)	40.87	10

Box Plot of Contribution Amount vs Fund Name

- The distribution is skewed to the right
- Most values are small but there are a few exceptionally large ones (outliers)
- X-Axis was cut off at 5,000 (Golf had an outlier at 25,000)

Difference Between Average Contribution Amount

2-sample t-test
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- Results
    - H_0: Mean Contribution Amount for the Pre-Covid and Post-Covid years are equal
    - H_A: Mean Contribution Amount for the Pre-Covid and Post-Covid years are NOT equal
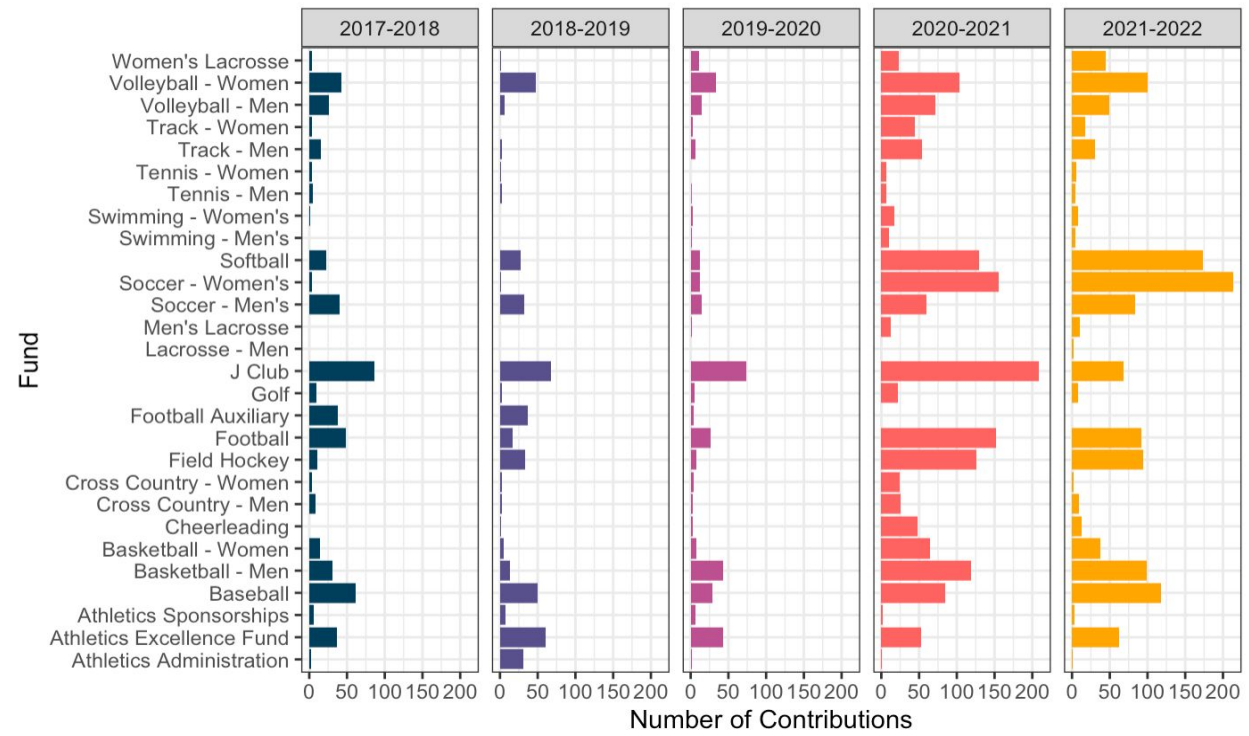
Results
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- p-value lower than 0.05 was found
- This indicates that we reject H_0

Which Funds bring in the most contributions each year? The least? Did it change Pre-Covid and Post-Covid?

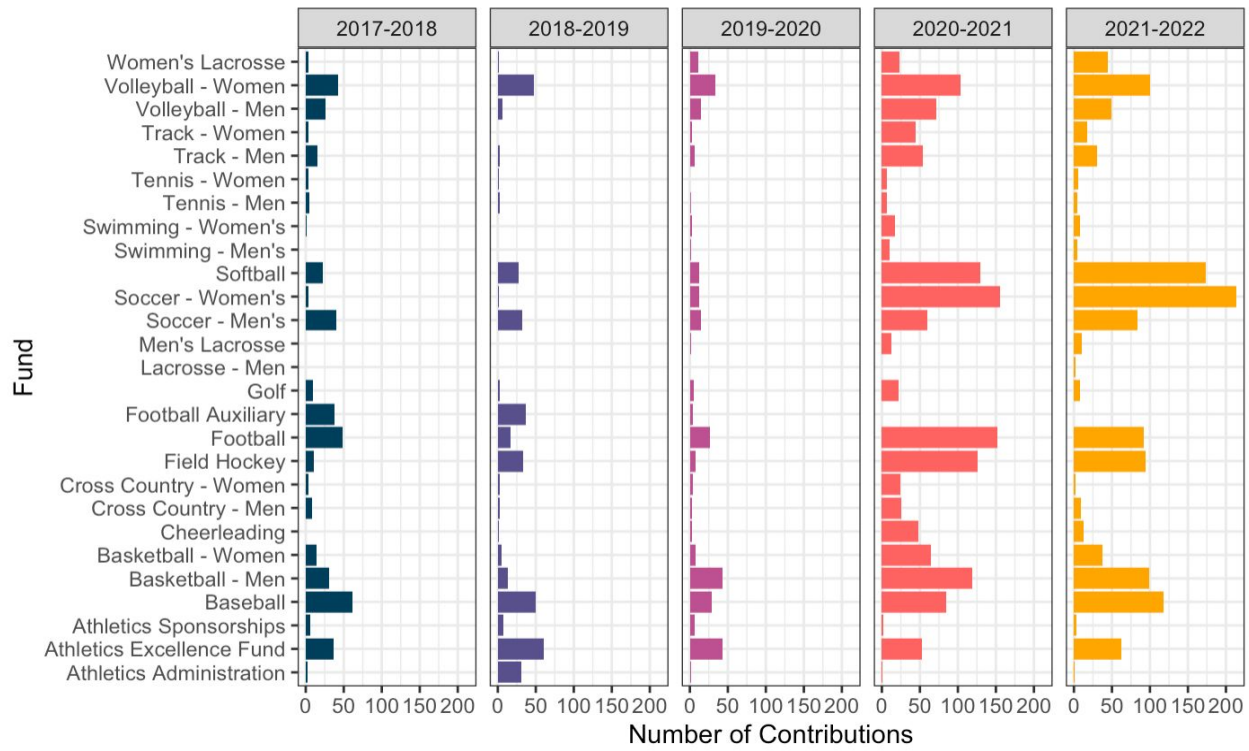# Number of Contributions

Including J Club

- **2017-2018**
  - J Club: 86
  - W Swimming: 1
- **2018-2019**
  - J Club: 68
  - Cheerleading, W Lacrosse, W Soccer, W Tennis: 2
- **2019-2020**
  - J Club: 74
  - M Tennis: 1
- **2020-2021**
  - J Club: 209
  - Athletics Administration: 1
- **2021-2022**
  - W Soccer: 214
  - Athletics Administration: 1

Number of Contributions

Excluding J Club

- **2017-2018**
  - Baseball: 62
  - W Swimming: 1
- **2018-2019**
  - Athletics Excellence Fund: 61
  - Cheerleading, W Lacrosse, W Soccer, W Tennis: 2
- **2019-2020**
  - Athletics Excellence Fund, M Basketball: 43
  - M Tennis: 1
- **2020-2021**
  - W Soccer: 156
  - Athletics Administration: 1
- **2021-2022**
  - W Soccer: 214
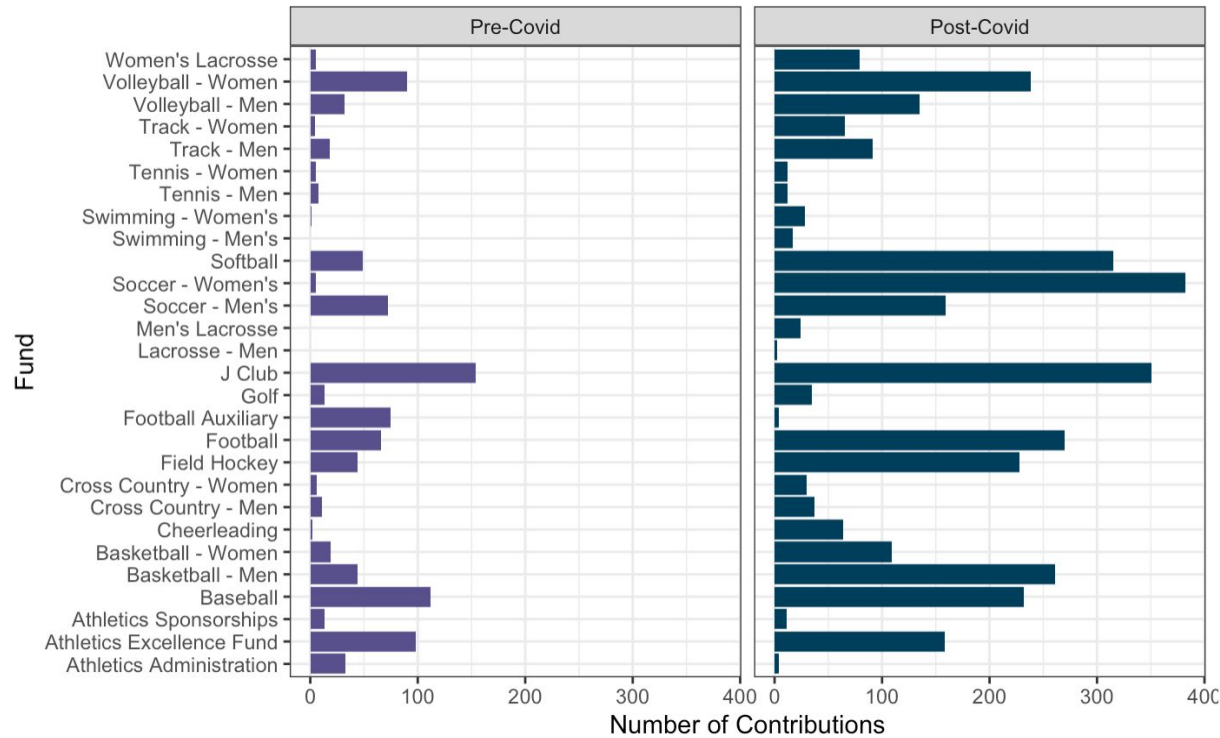 - Athletics Administration: 1

Pre/Post Covid

Including J Club

- **Pre-Covid**
  - J Club: 154
  - W Swimming: 1
- **Post-Covid**
  - W Soccer: 382
  - M Lacrosse: 1

Excluding J Club

- **Pre-Covid**
  - Baseball: 112
  - W Swimming: 1
- **Post-Covid**
  - W Soccer: 382
  - M Lacrosse: 1

Difference in Average Number of Contributions

Question

Is there a difference in the average number of contributions across the 5 fiscal years?

Test

- Kruskal-Wallis test
- Hypotheses
  - H_0: $\mu1 = \mu2 = \mu3 = \mu4 = \mu5$
  - H_A: At least 1 average contribution is different from the assumption

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Results

- p-value lower than 0.05 was found
- Reject H_0 - suggests a difference

Difference in Average Number of Contributions

Question

How does it differ?

Test

- Dunn test

Results

- 2020-2021 Fiscal Year had a significant difference from all 3 fiscal years before it

- No significant difference between 2020-2021 & 2021-2022

Conclusion

- Alumni Engagement Level is dependent on Sport Played
- The Funds received the highest number of contributions in April, during previous 2 Fiscal Years.
- Pre-Covid and Post-Covid:
  - Average Contribution Amount varied
  - Number of contributions varied
- Fiscal Year:
  - Average Contribution Amount varied
  - Number of contributions varied