



**SAINT LOUIS
UNIVERSITY**

— EST. 1818 —

data science



AUGUST 20, 2024 | SEATTLE, WA



DUNGEONS & DONORS

JOURNEY INTO THE NULL



An Epic Fantasy of Giving by
SAINT LOUIS UNIVERSITY

ACKNOWLEDGEMENTS

- ***Jenna Majzoub*** | Director of Prospect Management and Research
- ***Olive Buchholz*** | Prospect Management Analyst
- ***Peter Reiker*** | Prospect Management Analyst
- ***Bill Tran*** | Prospect Management Analyst

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Exploratory Data Analysis

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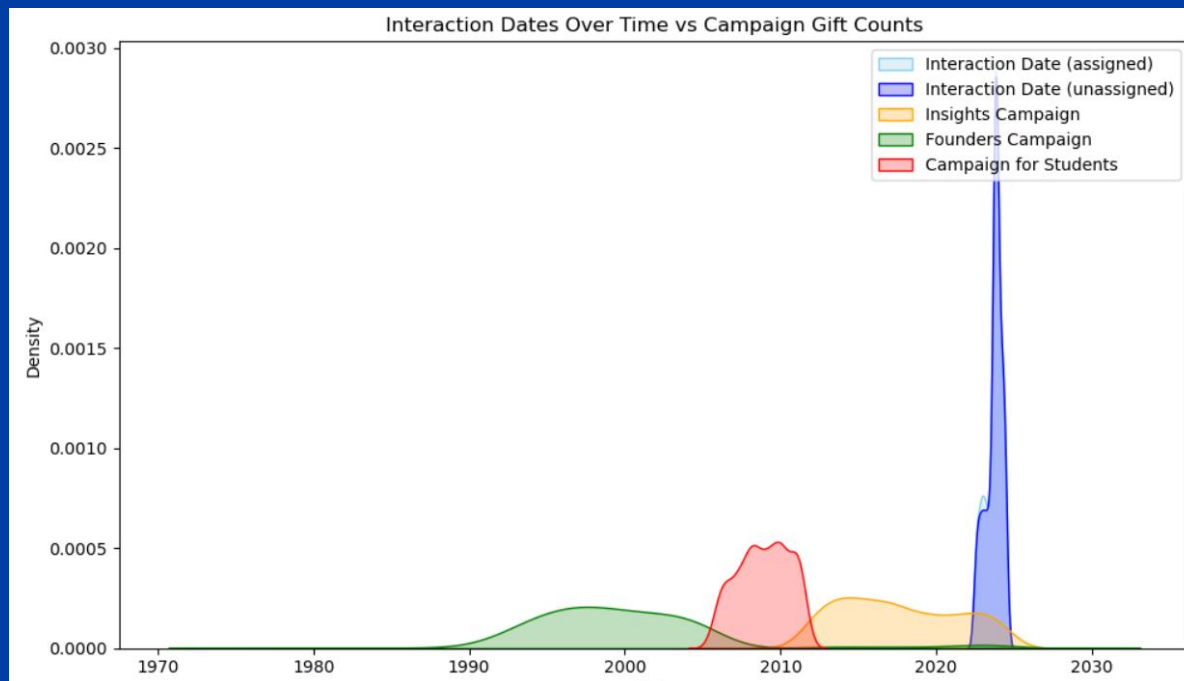
- Of the four campaigns already executed, only three show substantial contributions
 - Clarity Campaign only shows 1 total gift of \$150
 - The other three campaigns show wide fluctuations in duration, average gift amount, gift count
 - Most common primary unit in each campaign is Attain Campus, most common assignment unit in each campaign is DXO

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Exploratory Data Analysis

- Interactions seemingly do not correspond to any previous campaigns



Exploratory Data Analysis

- The largest gifts are coming from unassigned donors
- Assignment does not seem to correlate with higher giving amounts

Campaign	Household Name	Assigned..	
Insights Campaign	Kevina Smouten and Gaven Smouten	False	\$5,000,000
Campaign for Stud..	Kevina Smouten and Gaven Smouten	False	\$5,000,000
Insights Campaign	Joelle Darlasson	False	\$5,000,000
Campaign for Stud..	Joelle Darlasson	False	\$5,000,000
Insights Campaign	Moise Wightman and Reiko Wightman	False	\$5,000,000
Campaign for Stud..	Moise Wightman and Reiko Wightman	False	\$5,000,000
Campaign for Stud..	Kevina Smouten and Gaven Smouten	False	\$5,000,000
Campaign for Stud..	Joelle Darlasson	False	\$3,000,000
Campaign for Stud..	Moise Wightman and Reiko Wightman	False	\$3,000,000
Insights Campaign	Kevina Smouten and Gaven Smouten	False	\$2,500,000
Insights Campaign	Rad Warratt and Phyllis Warratt	False	\$2,000,000
Insights Campaign	Rad Warratt and Phyllis Warratt	False	\$1,750,000
Insights Campaign	Rad Warratt and Phyllis Warratt	False	\$1,750,000
Insights Campaign	Bradán Beever and Brantley Beever	False	\$1,112,400
Insights Campaign	Kevina Smouten and Gaven Smouten	False	\$1,000,000
Campaign for Stud..	Letitia Hurkett and Joya Hurkett	False	\$1,000,000
Insights Campaign	Reggi Gillicuddy and Noland Gillicuddy	False	\$1,000,000
Insights Campaign	Kevina Smouten and Gaven Smouten	False	\$1,000,000
Insights Campaign	Kevina Smouten and Gaven Smouten	False	\$1,000,000

Exploratory Data Analysis

- Assumption #1: DOs utilize self-assignment when building their portfolios
- Assumption #2: DOs are not siloed by primary unit nor by assignment unit

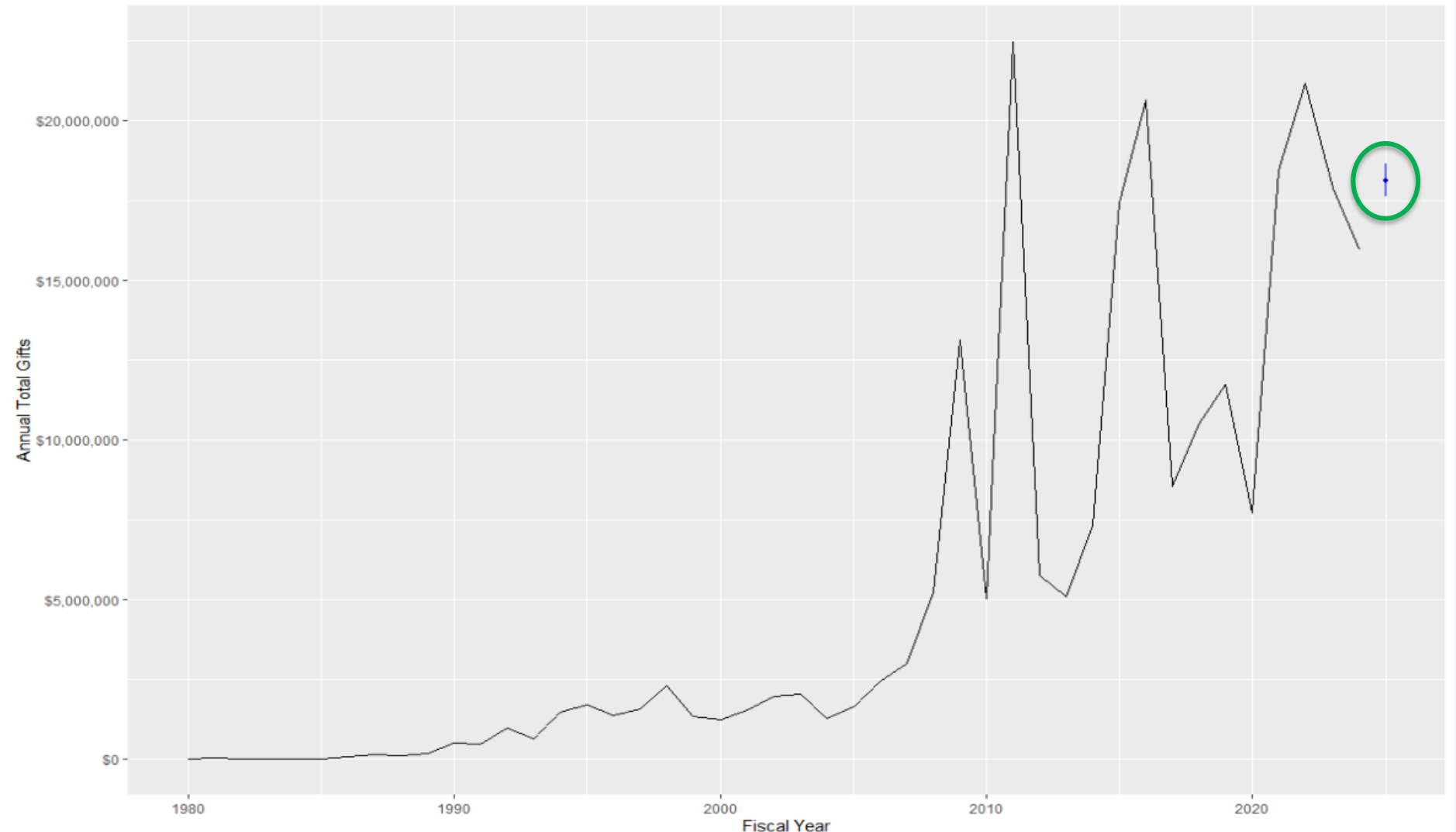
Financial Forecasting



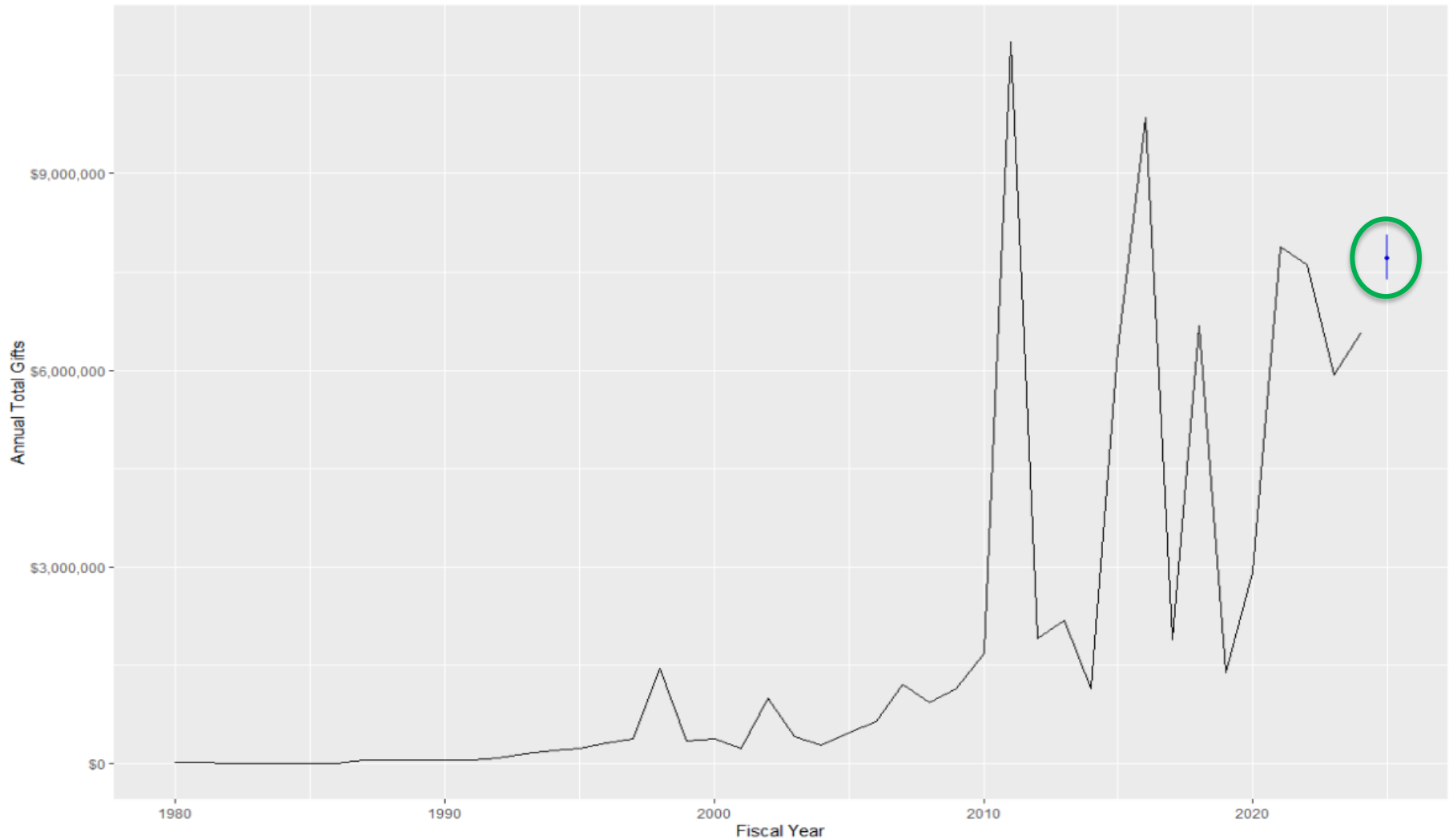
Financial Forecasting

- Using a bespoke ARIMA time-series predictive model concocted by analyst/wizard Peter Reiker
- Forecasts total annual gifts for next fiscal year, as well as subsets by assignment unit and primary unit

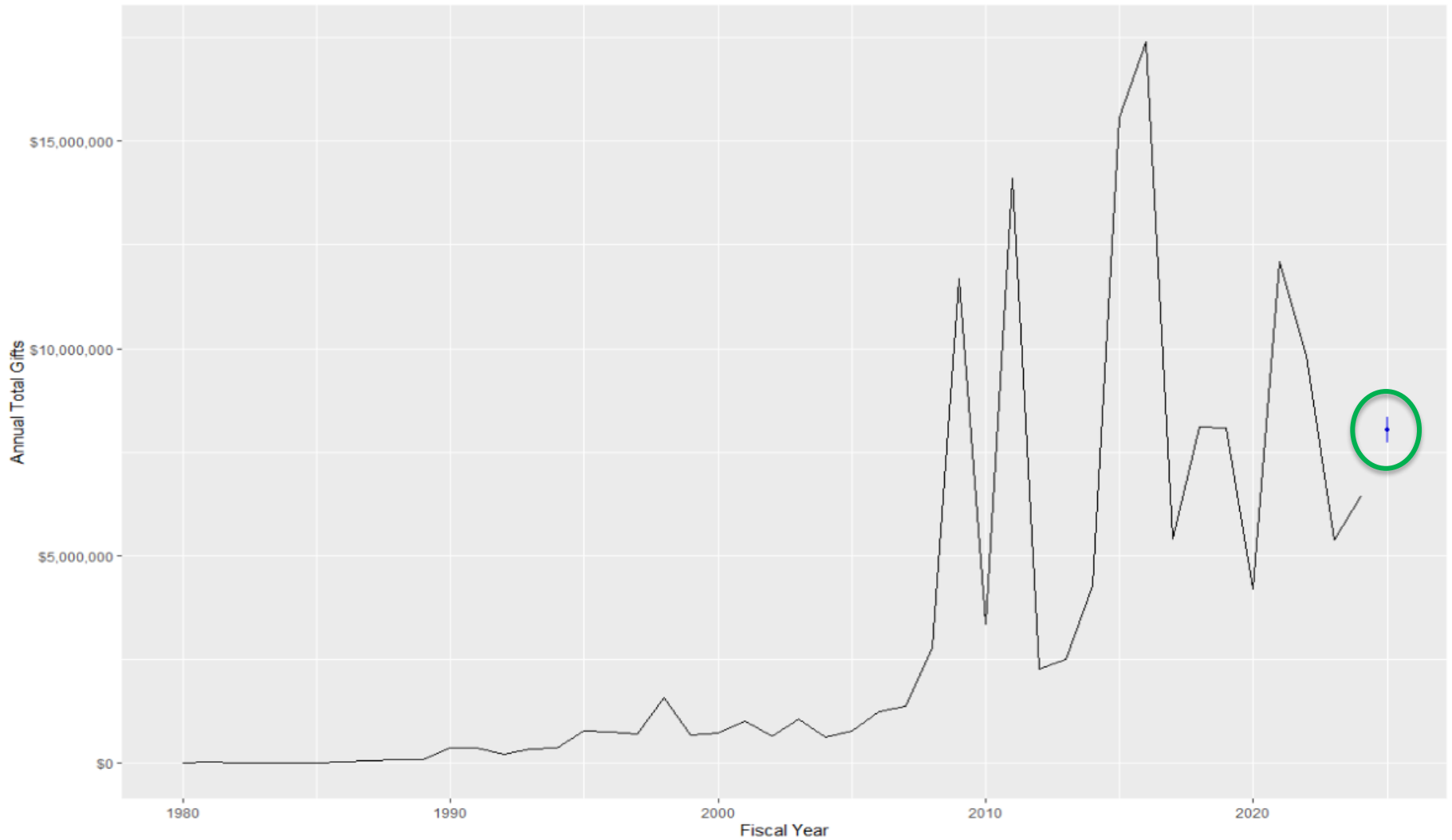
Annual Total Gifts with Forecast for Next Fiscal Year



Annual Total Gifts for DXO Unit with Forecast for Next Fiscal Year



Annual Total Gifts for Attain Campus with Forecast for Next Fiscal Year

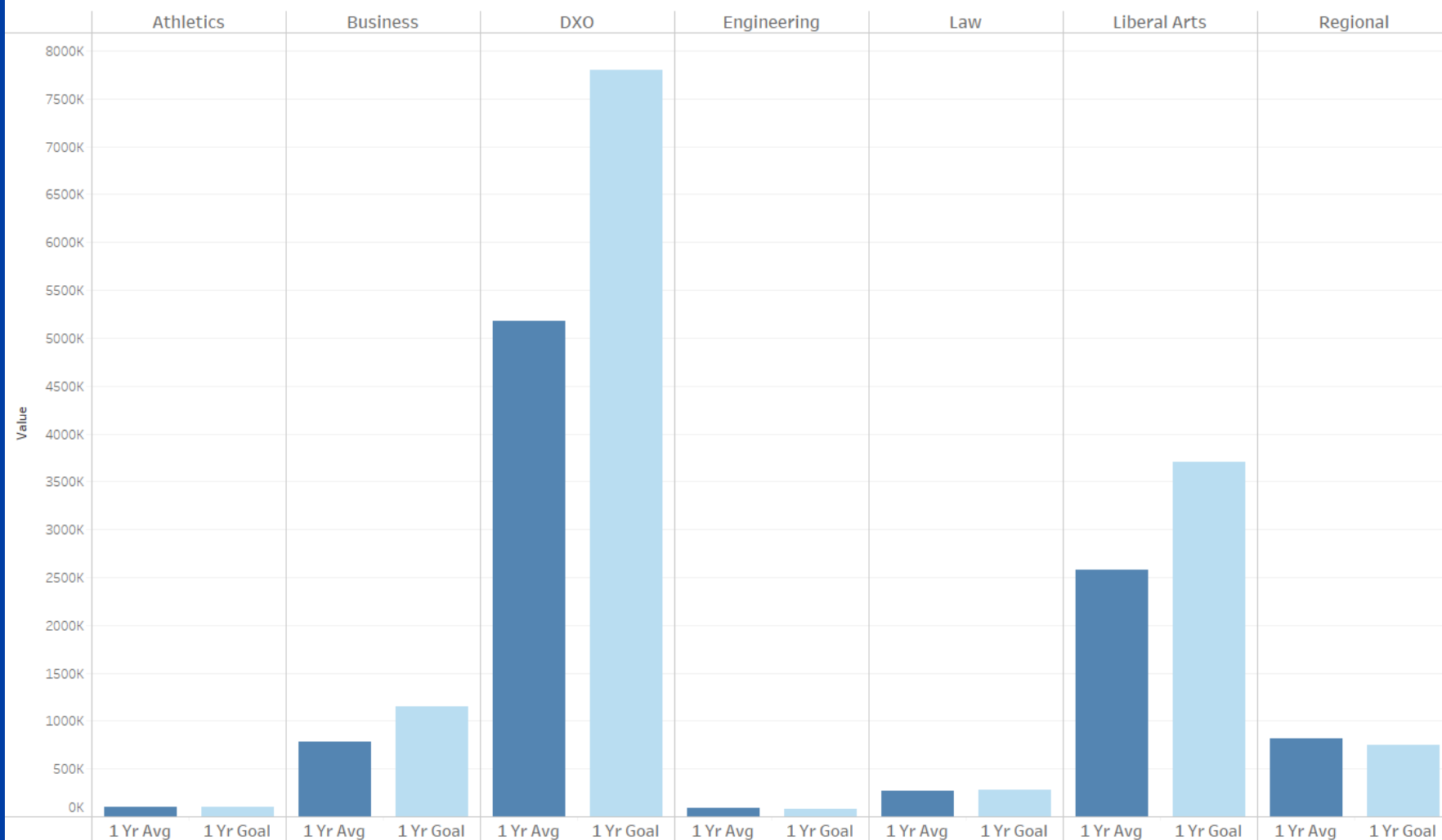


Campaign Goals

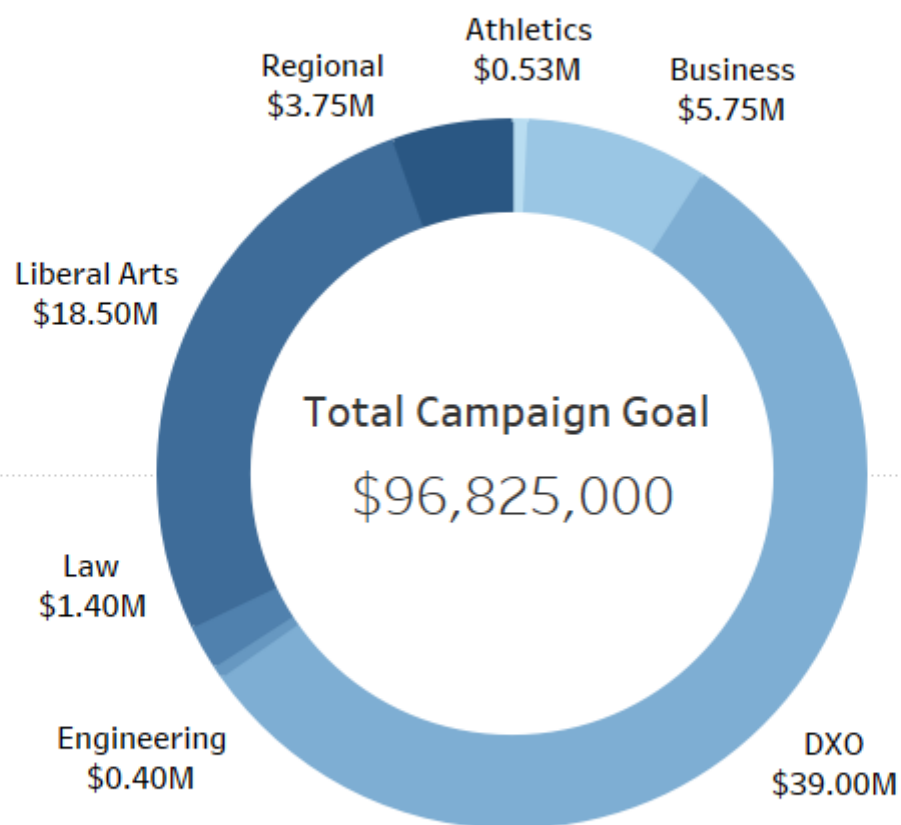
- Total annual gifts are forecasted at \$19.3m
- Across five years (x5) = **\$96.8m**

Assignment Unit	1 Yr Gift Total Proj	5 Yr Goal
Athletics	\$105,000.00	\$525,000.00
Business	\$1,150,000.00	\$5,750,000.00
DXO	\$7,800,000.00	\$39,000,000.00
Engineering	\$80,000.00	\$400,000.00
Law	\$280,000.00	\$1,400,000.00
Liberal Arts	\$3,700,000.00	\$18,500,000.00
Regional	\$750,000.00	\$3,750,000.00
Null	\$5,500,000.00	\$27,500,000.00
<u>Total</u>	<u>\$19,365,000.00</u>	<u>\$96,825,000.00</u>

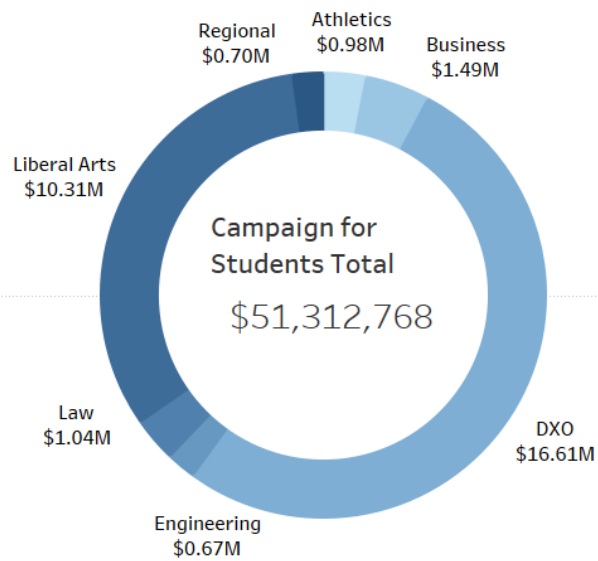
1 Yr Avg Gifts vs 1 Yr Campaign Goals



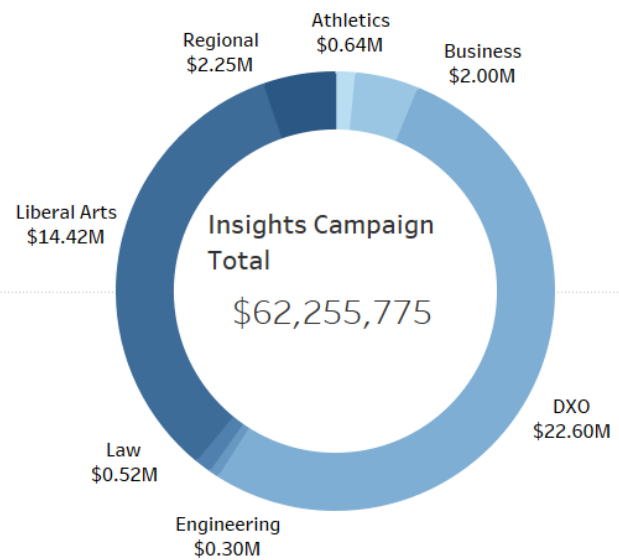
"Apra's Gate" Campaign Goals by Unit



Campaign for Students



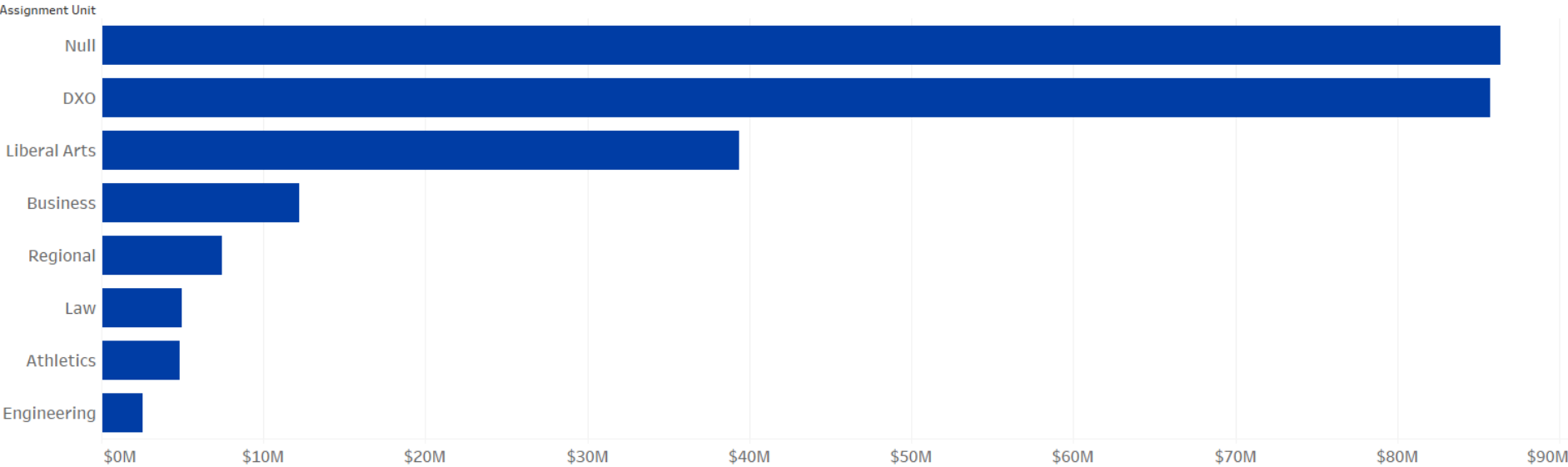
Insights Campaign



Comparing to prior campaigns

- **“Apra’s Gate”** campaign is forecasting \$19.3m per year
 - **“Campaign for Students”** (2005-2011) shows \$8.5m a year
 - **“Insights Campaign”** (2011-2023) shows \$5.1m a year
- **“Apra’s Gate”** campaign should focus efforts to engage currently unassigned donors, roping in null gifts into the campaign

Total Giving by Assignment Unit



The Gift Pyramid

Based on a one-year target of \$19.3m

GIFT RANGE	# GIFTS REQ.	# PROSPECTS REQ.	SUBTOTAL	CUMULATIVE TOTAL	CUMULATIVE %
4825000	1	5	4825000	4825000	25%
2895000	1	5	2895000	7720000	40%
1930000	2	10	3860000	11580000	60%
1447500	2	10	2895000	14475000	75%
965000	3	15	2895000	17370000	90%
482500	4	20	1930000	19300000	100%
386000	6	30	2316000	21616000	112%
193000	8	40	1544000	23160000	120%
96500	10	50	965000	24125000	125%
48250	12	60	579000	24704000	128%
Total:	49	245		24704000	

The Gift Pyramid

- Verifying feasibility of gift brackets using donor activity from the last 10 years
- Shows slight discrepancy towards higher brackets, but supported by a larger base in lower brackets

```
def count_unique_gifts_in_brackets(df, brackets):
    # Initialize a dictionary to hold the counts for each bracket
    bracket_counts = {}

    for bracket in brackets:
        # Define the bracket label
        if len(bracket) == 2:
            bracket_label = f"{bracket[0]}-{bracket[1]}"
            # Count the number of unique gift IDs in the bracket
            count = df[(df['GIFT_AMOUNT'] >= bracket[0]) & (df['GIFT_AMOUNT'] < bracket[1])]['CONTACT_ID'].nunique()
        elif len(bracket) == 1:
            bracket_label = f"{bracket[0]}+"
            # Count the number of unique gift IDs in the bracket
            count = df[df['GIFT_AMOUNT'] >= bracket[0]]['CONTACT_ID'].nunique()

        # Add the count to the dictionary
        bracket_counts[bracket_label] = count

    # Print the counts for each bracket on a new line
    for bracket_label, count in bracket_counts.items():
        print(f"{bracket_label}: {count}")

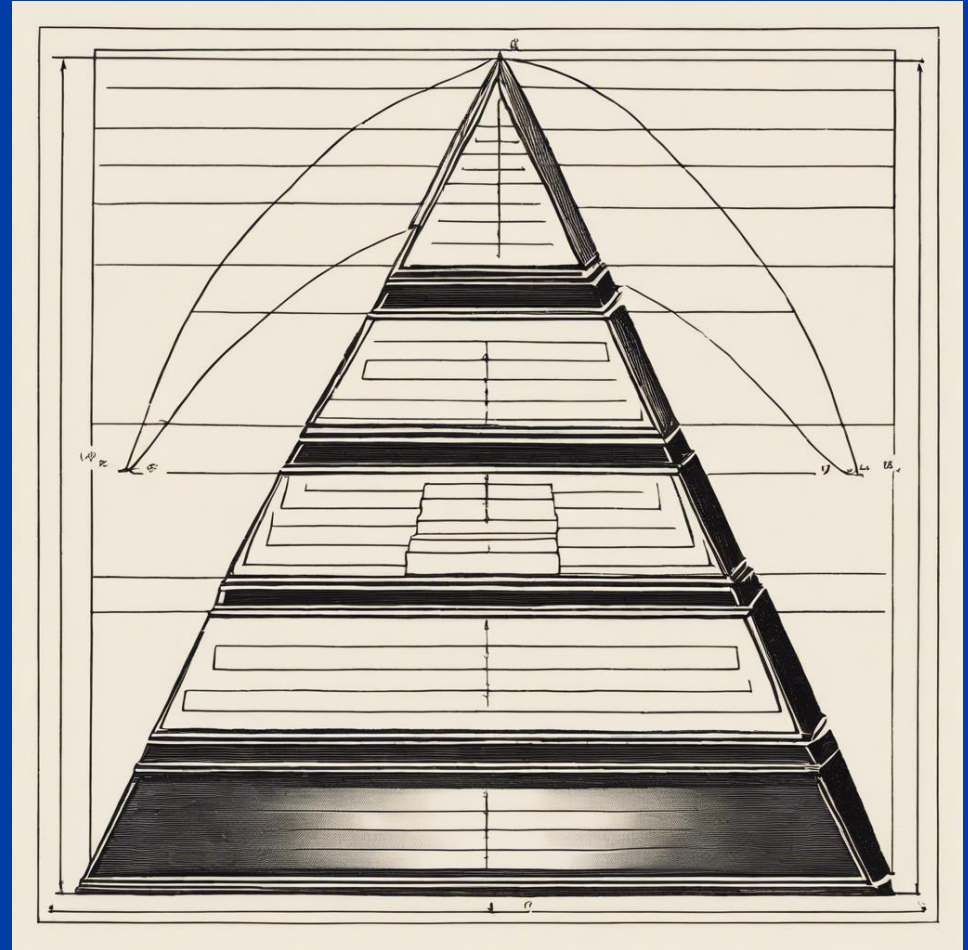
# Define brackets
brackets = [(48250, 96500), (96500, 193000), (193000, 386000), (386000, 482500),
            (482500, 965000), (965000, 1447500), (1447500, 1930000), (1930000, 2895000),
            (2895000, 4825000), (4825000,)]

# Get the counts of gifts in each bracket
count_unique_gifts_in_brackets(gift[gift['GIFT_DATE'].dt.year > 2014], brackets[::-1])

4825000+: 3
2895000-4825000: 1
1930000-2895000: 6
1447500-1930000: 2
965000-1447500: 8
482500-965000: 12
386000-482500: 10
193000-386000: 21
96500-193000: 44
48250-96500: 55
```

The Gift Pyramid

- Lead Gifts
 - 3 donors at \$2.5m+
- Major Gifts
 - 21 donors at \$500k
- Mid-level Gifts
 - 110 donors at \$50k
- Low-level Gifts
 - 812 donors at \$5000
- Prospective/Annual
 - 2323 donors at \$500
- Total max potential:
\$28,721,500 per year



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“With **Apra's Gate** now open, the quest has begun in earnest. Fundraising knights in gleaming armor rally support across the realm, guided by the wise Analysts of the Round Table. Inspired citizens contribute generously, their hearts alight with hope. As gold fills the coffers, the Kingdom of Apra marches towards a future of prosperity and promise.”

Play *Apra's Gate: the Video Game* at the link below!