Minneapolis College Library Springshare Data Analysis

LibGuides Views

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In [1]:
```
# Import dependencies

from datetime import datetime as dt

import matplotlib.pyplot as plt
import pandas as pd
```

In [2]:
```
# Load libguide usage stats all-time (2014-present)

guides_df = pd.read_csv("guide_alltime.csv")
guides_df.head(10)
```

Out[2]:

	Guide ID	Guide Name	2014-02	2014-03	2014-04	2014-05	2014-06	2014-07	2014-08	2014-09	...	2022-09	2
0	124892	A Master Guide to Guides	0	0	0	0	0	0	0	0	...	0	
1	98118	A Master Library Content Guide	0	0	0	0	0	0	0	0	...	0	
2	98116	A Master Search Box Guide	0	0	0	0	0	0	0	0	...	0	
3	98123	A Master Subscription Resources Guide	0	0	0	0	0	0	0	0	...	0	
4	98119	A Template - The Works	0	0	0	0	0	0	0	0	...	0	
5	655293	A Template - Two Column Layout	0	0	0	0	0	0	0	0	...	0	
6	98157	AMIS 1350: American Indian Education Past & Pr...	0	3	2	8	1	1	10	2	...	1	
7	98161	ARTS 1125: Ceramics 1	0	39	74	9	4	1	2	6	...	0	
8	98158	ARTS 1142: Painting 1	0	0	1	0	1	0	4	1	...	0	
9	1207610	ARTS 1150 Digital Imaging Foundations	0	0	0	0	0	0	0	0	...	7	

10 rows × 115 columns

In [3]:
```
# Get basic info on this dataset

guides_df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 188 entries, 0 to 187
Columns: 115 entries, Guide ID to Total
dtypes: int64(114), object(1)
memory usage: 169.0+ KB
```

In [4]:
```
# Checking for null values in Total column

guides_df["Total"].isna().sum()
```

Out[4]:
```
0
```

In [5]:
```
# Summary stats for Total column

guides_df["Total"].describe()
```

Out[5]:
```
count      188.000000
mean      1237.622340
std       6918.144398
min          0.000000
25%         33.750000
50%        161.500000
75%        606.000000
max      88318.000000
Name: Total, dtype: float64
```

In [6]:
```
# Looking for dummy guides to weed out of our analysis

guides_df["Guide Name"].value_counts()
```

Out[6]:
```
Guide Name
[Deleted]                                                          50
PHIL 1115: Introduction to Philosophy                               2
ENGL 1111: College English 2 - Research and Composition for Change  2
Mental Health                                                       1
Literature                                                          1
                                                                   ..
Current Events                                                      1
Culturally Responsive/Anti-Racist Pedagogy                          1
Critical Viewing: The Depths of Horror                              1
Creative Commons & Copyright                                        1
Fake News &amp;amp; Misinformation:                                 1
Name: count, Length: 137, dtype: int64
```

In [7]:

```
# Shrink feature dimensions down to 3 most important

guides_df = guides_df[["Guide ID", "Guide Name", "Total"]]

# Remove dummy libguides

guides_df = guides_df.loc[(guides_df["Guide Name"] != "[Deleted]") &
                          ~(guides_df["Guide Name"].str.contains("Master"))
                          ~(guides_df["Guide Name"].str.contains("Template"
                          ~(guides_df["Guide Name"].str.contains("TEST")),

guides_df = guides_df.sort_values(by="Total", ascending=False)
guides_df = guides_df.reset_index(drop=True)

guides_df
```

Out[7]:

	Guide ID	Guide Name	Total
0	1064692	Find Resources	88318
1	471526	Citation Help	31714
2	98122	Nursing	10900
3	163756	NPRO 1000/1010: Introduction to Health Concepts	9575
4	138408	ENGL 1111: College English 2 - Focus on Gender	9125
...	...	...	...
125	407370	Geology	0
126	842076	Prince	0
127	98178	READ 1300: Critical Reading of Academic Texts ...	0
128	133371	PHIL 1115: Introduction to Philosophy	0
129	138414	ENGL 1110: Focus on Higher Education	0

130 rows × 3 columns

In [8]:

```
# Visualize total views > 500

over_500_views_df = guides_df.loc[(guides_df["Total"] > 500), :]
over_500_views_df
```

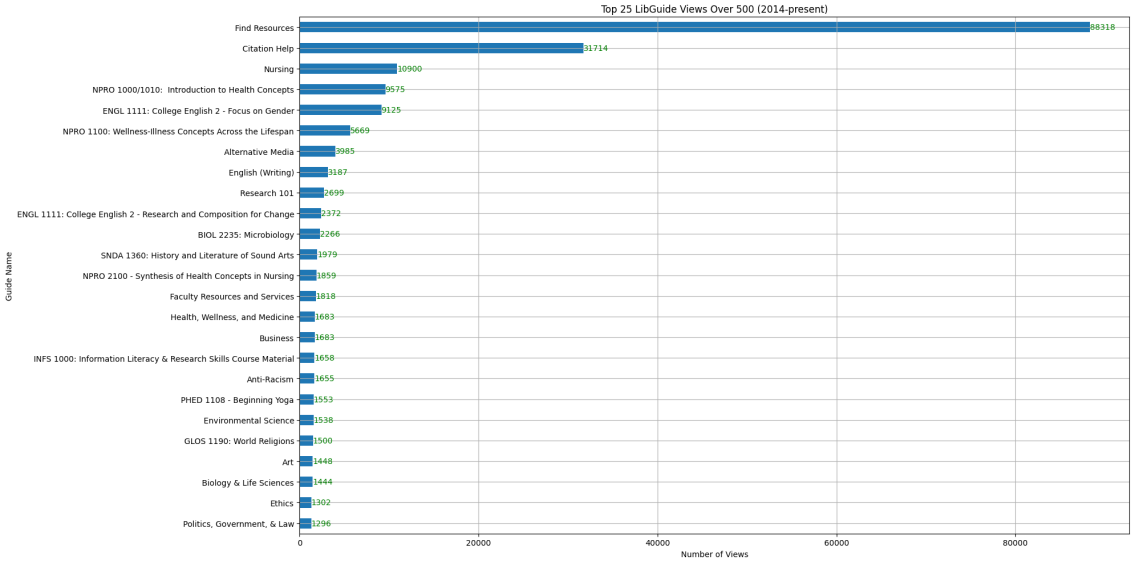
Out[8]:

	Guide ID	Guide Name	Total
0	1064692	Find Resources	88318
1	471526	Citation Help	31714
2	98122	Nursing	10900
3	163756	NPRO 1000/1010: Introduction to Health Concepts	9575
4	138408	ENGL 1111: College English 2 - Focus on Gender	9125
5	214276	NPRO 1100: Wellness-Illness Concepts Across th...	5669
6	98124	Alternative Media	3985
7	98147	English (Writing)	3187
8	1082522	Research 101	2699
9	972293	ENGL 1111: College English 2 - Research and Co...	2372
10	98163	BIOL 2235: Microbiology	2266
11	98155	SNDA 1360: History and Literature of Sound Arts	1979
12	227917	NPRO 2100 - Synthesis of Health Concepts in Nu...	1859
13	98159	Faculty Resources and Services	1818
14	98125	Health, Wellness, and Medicine	1683
15	98153	Business	1683
16	416540	INFS 1000: Information Literacy & Research Ski...	1658
17	1047010	Anti-Racism	1655
18	603210	PHED 1108 - Beginning Yoga	1553
19	98146	Environmental Science	1538
20	137438	GLOS 1190: World Religions	1500
21	98127	Art	1448
22	98128	Biology & Life Sciences	1444
23	98145	Ethics	1302
24	98136	Politics, Government, & Law	1296
25	98149	Education	1210
26	370563	ENGL 1110 College Composition: Focus on Critic...	1137
27	930504	BIOL 2202: Biology 2	1137
28	588162	NPRO 2000 - Complex Health Concepts	1130
29	98130	Anthropology, Cultural and Ethnic Studies	1077
30	98170	ENGL 0900: Fundamentals of Written English - H...	1076
31	541080	Traditional and Alternative Educational Materials	1051
32	98137	Psychology	1046
33	738044	Reading for Interest	1011
34	98134	Philosophy	1004

	Guide ID	Guide Name	Total
35	1120129	Zines	999
36	98131	Food & Nutrition	975
37	611552	PHED 1132 - Relaxation Techniques	926
38	396736	HLTH 1505: Introduction to Meditation and Mind...	862
39	98144	LGBTQI Resources	848
40	98142	Literature	818
41	98150	Current Events	775
42	98140	Women's Studies	736
43	98138	Sociology	649
44	98151	Child Development	630
45	98152	Chemistry	615
46	98141	Music	609
47	969644	Creative Commons & Copyright	605
48	184861	ENGL 1111: Controversy, Cause & Effect and the...	592

In [9]:

```
# Visualize top 25 libguides > 500 views by # of views

num_to_view = 25

ax = over_500_views_df.head(num_to_view).plot(
        x="Guide Name",
        y="Total",
        figsize=(20,10),
        kind="barh",
        legend=False,
        grid=True,
        xlabel="Number of Views",
        title=f"Top {num_to_view} LibGuide Views Over 500 (2014-present)")

ax.bar_label(ax.containers[0], color="green")
ax.invert_yaxis()
plt.tight_layout()

plt.savefig("LibGuides/guides_gt_500.png")

plt.show()
```



In [10]:
```
# Visualize total views <= 500

under_500_views_df = guides_df.loc[(guides_df["Total"] <= 500), :]
under_500_views_df
```

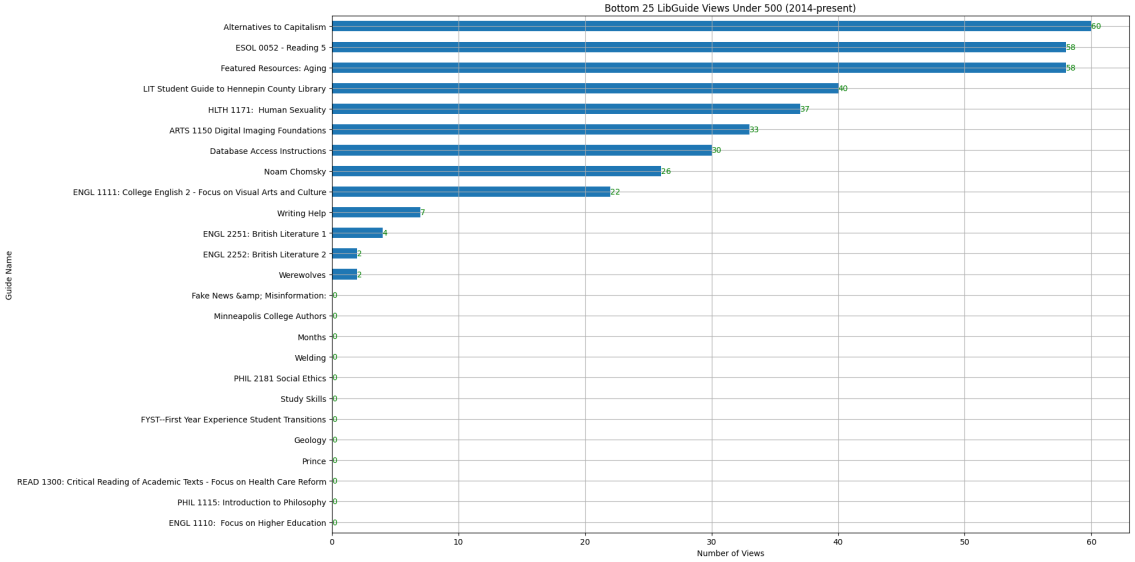
Out[10]:

	Guide ID	Guide Name	Total
49	585491	PHIL 1171: Ethics	492
50	864366	Mental Health	473
51	98157	AMIS 1350: American Indian Education Past & Pr...	434
52	98165	CMST 1000: Introduction to Communication Studies	431
53	98148	Elections	417
...	...	...	...
125	407370	Geology	0
126	842076	Prince	0
127	98178	READ 1300: Critical Reading of Academic Texts ...	0
128	133371	PHIL 1115: Introduction to Philosophy	0
129	138414	ENGL 1110: Focus on Higher Education	0

81 rows × 3 columns

In [11]:

```
# Visualize top 25 libguides < 500 views by # of views

num_to_view = 25

ax = under_500_views_df.tail(num_to_view).plot(
        x="Guide Name",
        y="Total",
        figsize=(20,10),
        kind="barh",
        legend=False,
        grid=True,
        xlabel="Number of Views",
        title=f"Bottom {num_to_view} LibGuide Views Under 500 (2014-present

ax.bar_label(ax.containers[0], color="green")
ax.invert_yaxis()
plt.tight_layout()

plt.savefig("LibGuides/guides_lt_500.png")

plt.show()
```

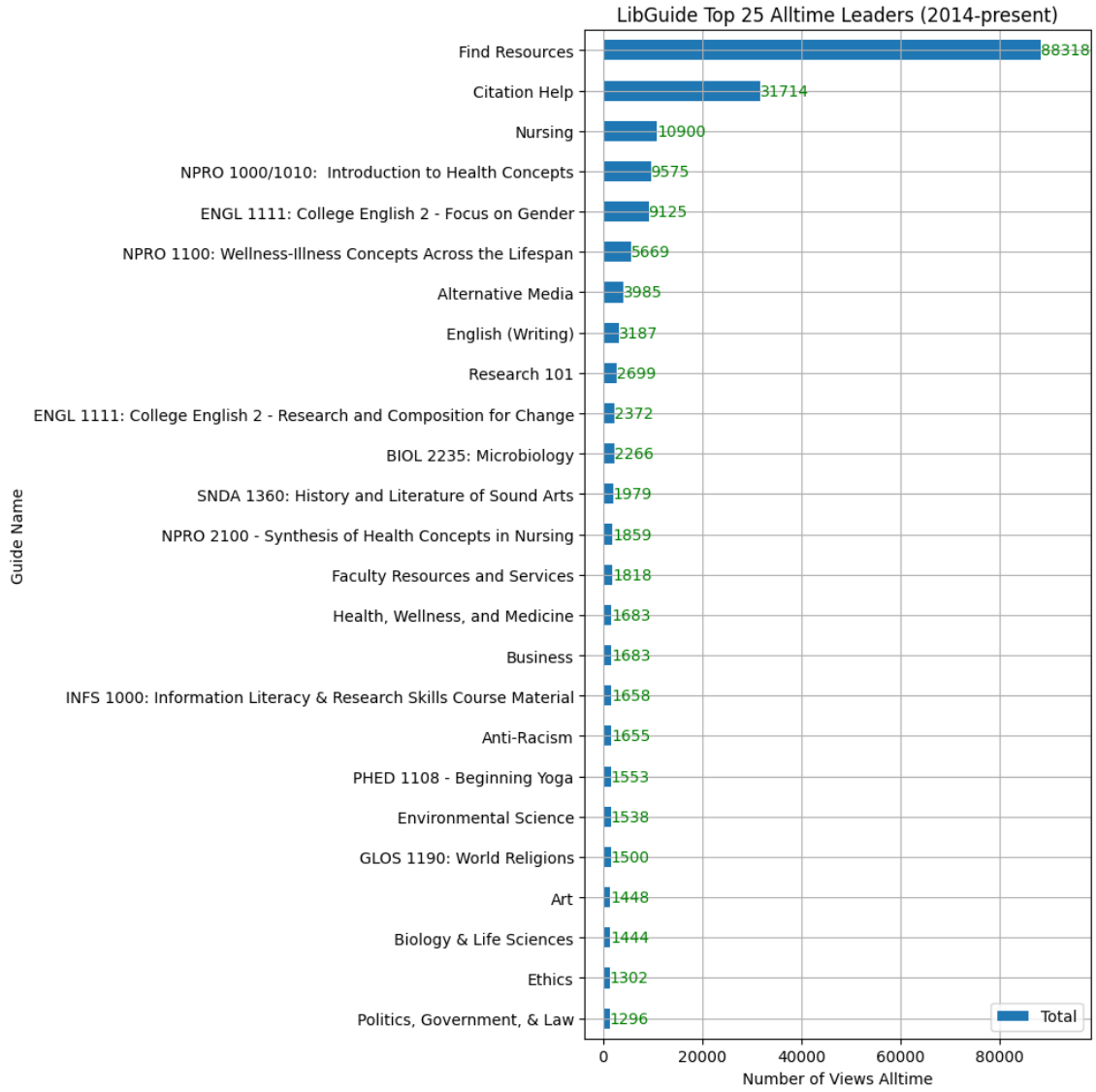


In [12]:
```
# Make dataframe of all time top leaders by # of views

num_of_top_leaders = 25

leaders_guides = guides_df[["Guide Name", "Total"]].sort_values(by="Total",
leaders_guides = leaders_guides.reset_index(drop=True)
leaders_guides = leaders_guides.sort_values(by="Total", ascending=True)
leaders_guides
```

Out[12]:

	Guide Name	Total
24	Politics, Government, & Law	1296
23	Ethics	1302
22	Biology & Life Sciences	1444
21	Art	1448
20	GLOS 1190: World Religions	1500
19	Environmental Science	1538
18	PHED 1108 - Beginning Yoga	1553
17	Anti-Racism	1655
16	INFS 1000: Information Literacy & Research Ski...	1658
15	Business	1683
14	Health, Wellness, and Medicine	1683
13	Faculty Resources and Services	1818
12	NPRO 2100 - Synthesis of Health Concepts in Nu...	1859
11	SNDA 1360: History and Literature of Sound Arts	1979
10	BIOL 2235: Microbiology	2266
9	ENGL 1111: College English 2 - Research and Co...	2372
8	Research 101	2699
7	English (Writing)	3187
6	Alternative Media	3985
5	NPRO 1100: Wellness-Illness Concepts Across th...	5669
4	ENGL 1111: College English 2 - Focus on Gender	9125
3	NPRO 1000/1010: Introduction to Health Concepts	9575
2	Nursing	10900
1	Citation Help	31714
0	Find Resources	88318

In [13]:
```
# Visualize the leaders' total views

ax = leaders_guides.plot(
        x="Guide Name",
        y="Total",
        figsize=(10,10),
        kind="barh",
        grid=True,
        xlim=[leaders_guides["Total"].min()-5000, leaders_guides["Total"].m
        xlabel="Number of Views Alltime",
        title=f"LibGuide Top {num_of_top_leaders} Alltime Leaders (2014-pre

ax.bar_label(ax.containers[0], color="green")
plt.tight_layout()

plt.savefig("LibGuides/guides_leaders.png")

plt.show()
```

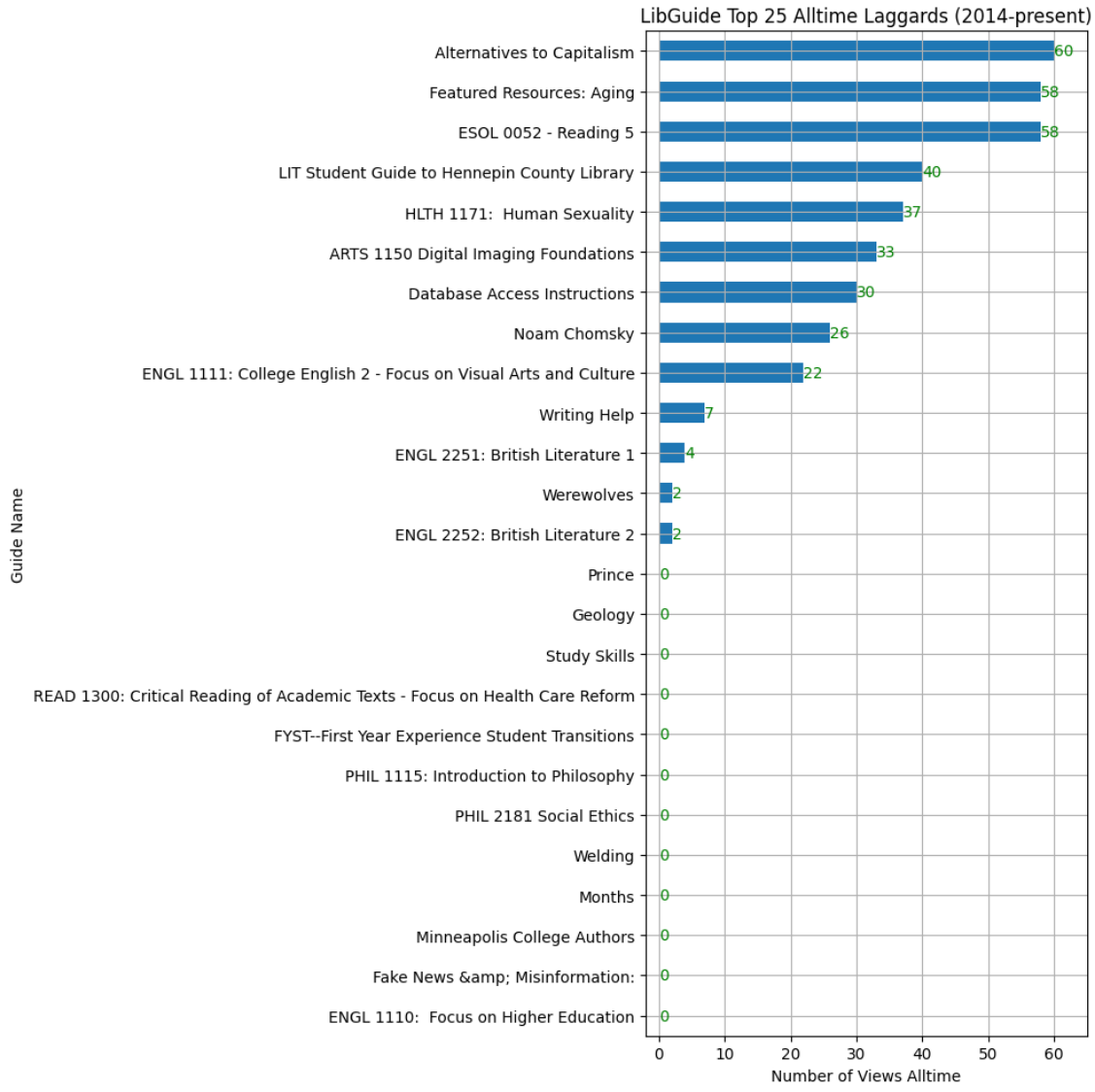


In [14]:
```
# Make dataframe of all time top laggards by # of views

num_of_top_laggards = 25

laggards_guides = guides_df[["Guide Name", "Total"]].sort_values(by="Total'
laggards_guides = laggards_guides.reset_index(drop=True)
laggards_guides = laggards_guides.sort_values(by="Total", ascending=True)
laggards_guides
```

Out[14]:

	Guide Name	Total
0	ENGL 1110: Focus on Higher Education	0
1	Fake News & Misinformation:	0
2	Minneapolis College Authors	0
3	Months	0
4	Welding	0
5	PHIL 2181 Social Ethics	0
6	PHIL 1115: Introduction to Philosophy	0
7	FYST--First Year Experience Student Transitions	0
8	READ 1300: Critical Reading of Academic Texts ...	0
9	Study Skills	0
10	Geology	0
11	Prince	0
13	ENGL 2252: British Literature 2	2
12	Werewolves	2
14	ENGL 2251: British Literature 1	4
15	Writing Help	7
16	ENGL 1111: College English 2 - Focus on Visual...	22
17	Noam Chomsky	26
18	Database Access Instructions	30
19	ARTS 1150 Digital Imaging Foundations	33
20	HLTH 1171: Human Sexuality	37
21	LIT Student Guide to Hennepin County Library	40
22	ESOL 0052 - Reading 5	58
23	Featured Resources: Aging	58
24	Alternatives to Capitalism	60

In [15]:
```
# Visualize the laggards' total views

ax = laggards_guides.plot(
        x="Guide Name",
        y="Total",
        figsize=(10,10),
        kind="barh",
        legend=False,
        grid=True,
        xlim=[laggards_guides["Total"].min()-2, laggards_guides["Total"].ma
        xlabel="Number of Views Alltime",
        title=f"LibGuide Top {num_of_top_laggards} Alltime Laggards (2014-p

ax.bar_label(ax.containers[0], color="green")
plt.tight_layout()

plt.savefig("LibGuides/guides_laggards.png")

plt.show()
```



Inferences

In [16]:
```
# Deeper dive into > 500 views LibGuides

over_500_views_df
```

Out[16]:

	Guide ID	Guide Name	Total
0	1064692	Find Resources	88318
1	471526	Citation Help	31714
2	98122	Nursing	10900
3	163756	NPRO 1000/1010: Introduction to Health Concepts	9575
4	138408	ENGL 1111: College English 2 - Focus on Gender	9125
5	214276	NPRO 1100: Wellness-Illness Concepts Across th...	5669
6	98124	Alternative Media	3985
7	98147	English (Writing)	3187
8	1082522	Research 101	2699
9	972293	ENGL 1111: College English 2 - Research and Co...	2372
10	98163	BIOL 2235: Microbiology	2266
11	98155	SNDA 1360: History and Literature of Sound Arts	1979
12	227917	NPRO 2100 - Synthesis of Health Concepts in Nu...	1859
13	98159	Faculty Resources and Services	1818
14	98125	Health, Wellness, and Medicine	1683
15	98153	Business	1683
16	416540	INFS 1000: Information Literacy & Research Ski...	1658
17	1047010	Anti-Racism	1655
18	603210	PHED 1108 - Beginning Yoga	1553
19	98146	Environmental Science	1538
20	137438	GLOS 1190: World Religions	1500
21	98127	Art	1448
22	98128	Biology & Life Sciences	1444
23	98145	Ethics	1302
24	98136	Politics, Government, & Law	1296
25	98149	Education	1210
26	370563	ENGL 1110 College Composition: Focus on Critic...	1137
27	930504	BIOL 2202: Biology 2	1137
28	588162	NPRO 2000 - Complex Health Concepts	1130
29	98130	Anthropology, Cultural and Ethnic Studies	1077
30	98170	ENGL 0900: Fundamentals of Written English - H...	1076
31	541080	Traditional and Alternative Educational Materials	1051
32	98137	Psychology	1046
33	738044	Reading for Interest	1011
34	98134	Philosophy	1004

	Guide ID	Guide Name	Total
35	1120129	Zines	999
36	98131	Food & Nutrition	975
37	611552	PHED 1132 - Relaxation Techniques	926
38	396736	HLTH 1505: Introduction to Meditation and Mind...	862
39	98144	LGBTQI Resources	848
40	98142	Literature	818
41	98150	Current Events	775
42	98140	Women's Studies	736
43	98138	Sociology	649
44	98151	Child Development	630
45	98152	Chemistry	615
46	98141	Music	609
47	969644	Creative Commons & Copyright	605
48	184861	ENGL 1111: Controversy, Cause & Effect and the...	592

In [17]:

```
# List of mctc course designators

course_designators = [
    "ACCT", "COUN", "ACMT", "AMIS", "AMSL", "AMST", "ANTH", "APRL", "ARAB",
    "BIKE", "BIOL", "BUSN",
    "CSIP", "CHEM", "CINE", "CIST", "CMST", "CSCI",
    "DAKO", "DNTA",
    "ECED", "ECON", "EDUC", "ENGA", "ESOL", "ENCW", "ENLT", "ENGL",
    "FYST",
    "GEOG", "GEOL", "GLOS", "GRPH",
    "HLTH", "HCCC", "HVAC", "HERB", "HIST", "HONR", "HSER",
    "INFS", "ITEC",
    "JAPN",
    "LAWE", "LIBT",
    "MTTC", "MATH", "MEDS", "MUSC",
    "NAHA", "NPRO",
    "OJIB",
    "PHRM", "PHIL", "PHOT", "PHMO", "PHED", "PHYS", "PSCI", "PSOM", "PSYC",
    "READ",
    "SOCI", "SOMI", "SNDA", "SPAN", "STSK", "SSAC",
    "THTR",
    "WEBI", "WELD", "WGSS"
]
```

In [18]:
```
# Examine guide names for course designators

first_words = (over_500_views_df["Guide Name"].str.split(" ").str[0])

first_words.info()
```

```
<class 'pandas.core.series.Series'>
Index: 49 entries, 0 to 48
Series name: Guide Name
Non-Null Count  Dtype
--------------  -----
49 non-null     object
dtypes: object(1)
memory usage: 784.0+ bytes
```

In [19]:
```
# Create boolean mask to find libguides devoted to courses by course desigr

course_guides_mask = first_words.isin(course_designators)

top_ten_course_libguides = over_500_views_df.head(25).loc[(course_guides_ma
top_ten_course_libguides
```

Out[19]:

	Guide ID	Guide Name	Total
3	163756	NPRO 1000/1010: Introduction to Health Concepts	9575
4	138408	ENGL 1111: College English 2 - Focus on Gender	9125
5	214276	NPRO 1100: Wellness-Illness Concepts Across th...	5669
9	972293	ENGL 1111: College English 2 - Research and Co...	2372
10	98163	BIOL 2235: Microbiology	2266
11	98155	SNDA 1360: History and Literature of Sound Arts	1979
12	227917	NPRO 2100 - Synthesis of Health Concepts in Nu...	1859
16	416540	INFS 1000: Information Literacy & Research Ski...	1658
18	603210	PHED 1108 - Beginning Yoga	1553
20	137438	GLOS 1190: World Religions	1500

In [20]:
```
# Calculate percentage of total views for each course designator and add to

total_views = top_ten_course_libguides["Total"].sum()

top_ten_course_libguides["Percent of Total"] = round((top_ten_course_libgui
top_ten_course_libguides
```

Out[20]:

	Guide ID	Guide Name	Total	Percent of Total
3	163756	NPRO 1000/1010: Introduction to Health Concepts	9575	25.50
4	138408	ENGL 1111: College English 2 - Focus on Gender	9125	24.30
5	214276	NPRO 1100: Wellness-Illness Concepts Across th...	5669	15.09
9	972293	ENGL 1111: College English 2 - Research and Co...	2372	6.32
10	98163	BIOL 2235: Microbiology	2266	6.03
11	98155	SNDA 1360: History and Literature of Sound Arts	1979	5.27
12	227917	NPRO 2100 - Synthesis of Health Concepts in Nu...	1859	4.95
16	416540	INFS 1000: Information Literacy & Research Ski...	1658	4.41
18	603210	PHED 1108 - Beginning Yoga	1553	4.14
20	137438	GLOS 1190: World Religions	1500	3.99

In [21]:
```
# Function to aggregate %'s

def calculate_percentage(designator):

    return round(top_ten_course_libguides.loc[ \
        (top_ten_course_libguides["Guide Name"].str.contains(f"{designator}
        ["Percent of Total"].sum(), 2)
```

In [22]:

```
# Sanity checks

counter = 0

for designator in course_designators:
    percentage = calculate_percentage(designator)
    print(f"{designator} = {percentage} %")
    counter += percentage

assert counter <= 100, "expected <= 100 for counter"

print(f"\nTotal = {counter} %")
```

```
ACCT = 0.0 %
COUN = 0.0 %
ACMT = 0.0 %
AMIS = 0.0 %
AMSL = 0.0 %
AMST = 0.0 %
ANTH = 0.0 %
APRL = 0.0 %
ARAB = 0.0 %
ARCH = 0.0 %
ARTS = 0.0 %
ASTR = 0.0 %
BIKE = 0.0 %
BIOL = 6.03 %
BUSN = 0.0 %
CSIP = 0.0 %
CHEM = 0.0 %
CINE = 0.0 %
CIST = 0.0 %
CMST = 0.0 %
CSCI = 0.0 %
DAKO = 0.0 %
DNTA = 0.0 %
ECED = 0.0 %
ECON = 0.0 %
EDUC = 0.0 %
ENGA = 0.0 %
ESOL = 0.0 %
ENCW = 0.0 %
ENLT = 0.0 %
ENGL = 30.62 %
FYST = 0.0 %
GEOG = 0.0 %
GEOL = 0.0 %
GLOS = 3.99 %
GRPH = 0.0 %
HLTH = 0.0 %
HCCC = 0.0 %
HVAC = 0.0 %
HERB = 0.0 %
HIST = 0.0 %
HONR = 0.0 %
HSER = 0.0 %
INFS = 4.41 %
ITEC = 0.0 %
JAPN = 0.0 %
LAWE = 0.0 %
LIBT = 0.0 %
MTTC = 0.0 %
MATH = 0.0 %
MEDS = 0.0 %
MUSC = 0.0 %
NAHA = 0.0 %
NPRO = 45.54 %
OJIB = 0.0 %
PHRM = 0.0 %
PHIL = 0.0 %
```

```
PHOT = 0.0 %
PHMO = 0.0 %
PHED = 4.14 %
PHYS = 0.0 %
PSCI = 0.0 %
PSOM = 0.0 %
PSYC = 0.0 %
READ = 0.0 %
SOCI = 0.0 %
SOMI = 0.0 %
SNDA = 5.27 %
SPAN = 0.0 %
STSK = 0.0 %
SSAC = 0.0 %
THTR = 0.0 %
WEBI = 0.0 %
WELD = 0.0 %
WGSS = 0.0 %

Total = 100.0 %
```

In [23]:

```
# Render pie chart

pie_df = pd.DataFrame(columns=["Percentage"], index=course_designators)

pie_df["Percentage"] = [calculate_percentage(designator) for designator in

pie_plot = pie_df.loc[(pie_df["Percentage"] > 0), :].plot.pie(y="Percentage
                                                    figsize=(8,8), autopct='

plt.tight_layout()

pie_plot.savefig("LibGuides/course_guides_pie.png")
```