# INTRODUCTION

- This document provides a summary of the housing survey collected by the ACRL and the Housing Office on February 2018
- This document is a python jupyter notebook which includes the code used to generate the data analyses, as well as the associated results
- See the comments in the code for details on the figure labels and codes
- Unfortunately, due to privacy reasons, the data cannot be shared.

```
# take out warnings about changes in future python versions
import warnings
warnings.filterwarnings('ignore')

import numpy as np
import pandas as pd

import matplotlib as mpl
import matplotlib.pyplot as plt
%matplotlib inline

import seaborn as sns
sns.set(style="whitegrid", color_codes=True)
```

```
In [3]: df = pd.read_excel('data_ANONYMOUS_survey_2018.xls')
```

```
In [4]: # recode some variables
   df[df=="Strongly NOT interested"] = 1
   df[df=="Moderately NOT interested"] = 2
   df[df=="Not sure"] = 3
   df[df=="Moderately interested"] = 4
   df[df=="Strongly interested"] = 5
   df[df=="Freshman"] = 1
   df[df=="Sophomore"] = 2
   df[df=="Junior"] = 3
   df[df=="Senior"] = 4
   df[df=="Super Senior"] = 4
   df[df=="Private non-Caltech housing"] = "off-private"
   df[df=="Off-campus Caltech housing"] = "off-cit"
```

**Basic response statistics**
In [6]:

```
# responses by current year of study
#
# NOTE:
#  >> freshman are encoded as 1
#  >> super-seniors and seniors encoded as 4
#
sns.countplot(x="yearStudy", data=df, palette="Greens_d")
```

Out[6]: <matplotlib.axes._subplots.AxesSubplot at 0x1101ff9b0>
In [5]:  
# responses by house affiliation 
In [7]:  

Out[5]: <matplotlib.axes._subplots.AxesSubplot at 0x10dd53f60>

Out[7]: (array([ 0,  1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12]),
        <a list of 13 Text xticklabel objects>)
Interest in Bechtel

- In the plots below, the interest scale goes from 1=strongly-NOT-interested to 5=strongly-interested

In [9]: # overall interest
sns.countplot(x="interestBechtel", data=df, palette="Greens_d")

Out[9]: <matplotlib.axes._subplots.AxesSubplot at 0x1105b7710>
# interest by year of study

```python
sns.countplot(x='yearStudy', hue="interestBechtel", data = df)
```

Out[10]:

![Bar chart showing interest by year of study.](image1)

# interest by house affiliation of study

```python
sns.countplot(x='houseAffiliation', hue="interestBechtel", data = df)
```

Out[11]:

![Bar chart showing interest by house affiliation.](image2)
In [12]: # interest by current living location
sns.countplot(x='livingNow', hue="interestBechtel", data = df)
plt.xticks(rotation = 45)

Out[12]: (array([ 0,  1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12]),
<a list of 13 Text xticklabel objects>)

Interest in Houses
In [13]:
# overall interest
sns.countplot(x="interestHouses", data=df, palette="Greens_d")

Out[13]: <matplotlib.axes._subplots.AxesSubplot at 0x110d7ccf8>

In [14]:
# interest by year of study
sns.countplot(x='yearStudy', hue="interestHouses", data = df)

Out[14]: <matplotlib.axes._subplots.AxesSubplot at 0x110e7ca90>
In [15]: # interest by house affiliation of study
sns.countplot(x='houseAffiliation', hue='interestHouses', data = df)

Out[15]: <matplotlib.axes._subplots.AxesSubplot at 0x111109c18>

In [16]: # interest by current living location
sns.countplot(x='livingNow', hue='interestHouses', data = df)
plt.xticks(rotation = 45)

Out[16]: (array([ 0,  1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12]),
          <a list of 13 Text xticklabel objects>)
### Interest in Marks/Braun

In [17]:

```python
# overall interest
sns.countplot(x="interestMarksBraun", data=df, palette="Greens_d")
```

Out[17]:<matplotlib.axes._subplots.AxesSubplot at 0x1114e3b70>

In [18]:

```python
# interest by year of study
sns.countplot(x='yearStudy', hue="interestMarksBraun", data = df)
```

Out[18]:<matplotlib.axes._subplots.AxesSubplot at 0x1115bfef0>
# interest by house affiliation of study
```
sns.countplot(x='houseAffiliation', hue="interestMarksBraun", data = df)
```

```
In [19]: sns.countplot(x='houseAffiliation', hue="interestMarksBraun", data = df)
```

Out[19]: `<matplotlib.axes._subplots.AxesSubplot at 0x111727198>`

# interest by current living location
```
sns.countplot(x='livingNow', hue="interestMarksBraun", data = df)
plt.xticks(rotation = 45)
```

```
In [20]: sns.countplot(x='livingNow', hue="interestMarksBraun", data = df)
plt.xticks(rotation = 45)
```

Out[20]: `(array([ 0,  1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12]),
          <a list of 13 Text xticklabel objects>)`
Interest non-CIT Housing

In [21]:
# overall interest
sns.countplot(x="interestNonCIT", data=df, palette="Greens_d")

Out[21]: <matplotlib.axes._subplots.AxesSubplot at 0x111d83a90>

In [22]:
# interest by year of study
sns.countplot(x='yearStudy', hue="interestNonCIT", data = df)

Out[22]: <matplotlib.axes._subplots.AxesSubplot at 0x111dc85c0>
In [23]: # interest by house affiliation of study
sns.countplot(x='houseAffiliation', hue='interestNonCIT', data = df)

Out[23]: <matplotlib.axes._subplots.AxesSubplot at 0x111f085c0>

In [24]: # interest by current living location
sns.countplot(x='livingNow', hue='interestNonCIT', data = df)
plt.xticks(rotation = 45)

Out[24]: (array([ 0,  1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12]),
<a list of 13 Text xticklabel objects>
Interest in different Bechtel room types

In [45]:
# Group application to a 4 bed suite
sns.countplot(x="interestGroup4BedSuite", data=df, palette="Greens_d", order=[1,2,3,4,5])

Out[45]: <matplotlib.axes._subplots.AxesSubplot at 0x113a7e6d8>

In [47]:
# Group application to a 6 bed suite
sns.countplot(x="interestGroup6BedSuite", data=df, palette="Greens_d", order=[1,2,3,4,5])

Out[47]: <matplotlib.axes._subplots.AxesSubplot at 0x113c66128>
In [48]:  
# Group application to a 8 bed suite
sns.countplot(x="interestGroup8BedSuite", data=df, 
               palette="Greens_d", order=[1,2,3,4,5])

Out[48]: <matplotlib.axes._subplots.AxesSubplot at 0x113ef8550>

In [49]:  
# Group application to a 12 bed suite
sns.countplot(x="interestGroup12BedSuite", data=df, 
               palette="Greens_d", order=[1,2,3,4,5])

Out[49]: <matplotlib.axes._subplots.AxesSubplot at 0x113cf4080>
In [50]:

```python
# Room in a Suite (but not applying as part of the group)
sns.countplot(x="interestRoomInSuiteNonGroup", data=df,
             palette="Greens_d",order=[1,2,3,4,5])
```

Out[50]: <matplotlib.axes._subplots.AxesSubplot at 0x11417b4e0>

![Bar chart showing count of interestRoomInSuiteNonGroup]

In [51]:

```python
# Non-suite single
sns.countplot(x="interestSingleNonSuite", data=df,
              palette="Greens_d",order=[1,2,3,4,5])
```

Out[51]: <matplotlib.axes._subplots.AxesSubplot at 0x1141875f8>

![Bar chart showing count of interestSingleNonSuite]
In [52]: # Interest Theme = quiet
    sns.countplot(x="InterestThemeQuiet", data=df,
                  palette="Greens_d", order=[1,2,3,4,5])

Out[52]: <matplotlib.axes._subplots.AxesSubplot at 0x114216c18>

In [53]: # Interest Theme = Substance Free
    sns.countplot(x="interestThemeSubstanceFree", data=df,
                  palette="Greens_d", order=[1,2,3,4,5])

Out[53]: <matplotlib.axes._subplots.AxesSubplot at 0x1144b0f60>
In [54]: # Interest Theme = Other
sns.countplot(x="interestThemeOther", data=df, palette="Greens_d", order=[1,
Out[54]: <matplotlib.axes._subplots.AxesSubplot at 0x114577c18>