

# Housing and Rotation Data

June 29, 2017

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# 1 Introduction

On March 12th 2017, a survey was sent to the undergraduate population to collect data relevant to the discussion on Bechtel Residence. 548 responses were recorded (a response rate of 55%). The **goal of the survey** was to collect data on:

1. How important is interacting with upperclassmen?
2. How effective is rotation?
3. Do students talk to people outside of their house?

Students were asked the **following questions**:

1. Demographic info (house affiliation, year).
2. Do you feel you had enough information after Rotation to rank your house preferences?
3. Do you think that you got an accurate representation (personality and character) of the houses during Rotation?
4. Rank how much you interact with students outside of your year through each of the following:
  - (a) Campus wide events
  - (b) Classes
  - (c) Campus wide clubs
  - (d) Houses/house events
  - (e) Athletics
5. Consider your choice of major. How useful of a source of information were upperclassmen?
6. Select the houses for which you consistently interact with several members of that house.
7. How did the House System influence your decision to come to Caltech?

This document summarizes the results of the survey.

# 2 Demographics

Primary house affiliation: (548 responses)

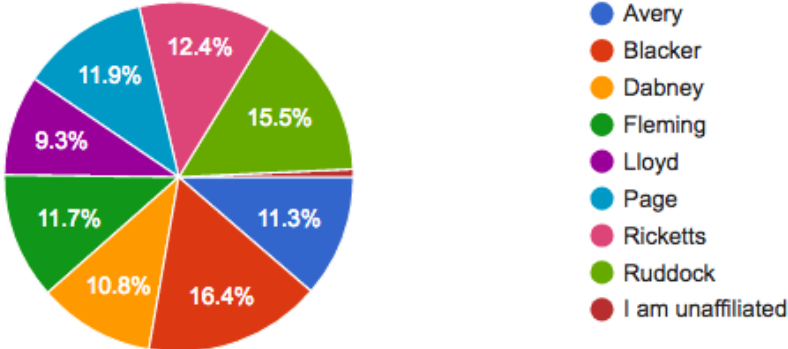


Figure 1: Respondents by house. The distribution by house is approximately representative of the population. A disproportionately high number of Blacker and Ruddock members responded.

Matriculation Year: (548 responses)

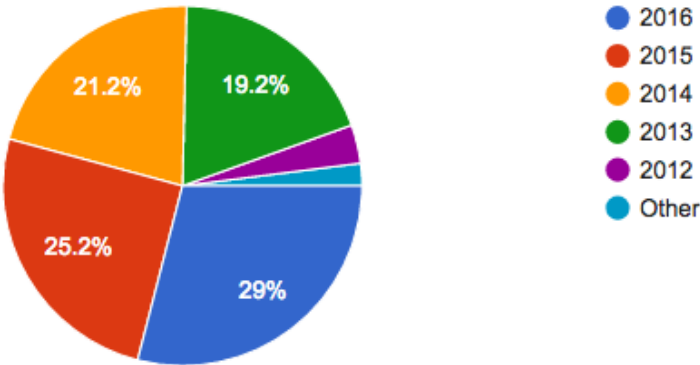


Figure 2: Respondents by matriculation year. The distribution by year is approximately representative of the population with a disproportionately high response from freshmen.

### 3 Rotation

Do you think that you got an accurate representation (personality and character) of the houses during Rotation?

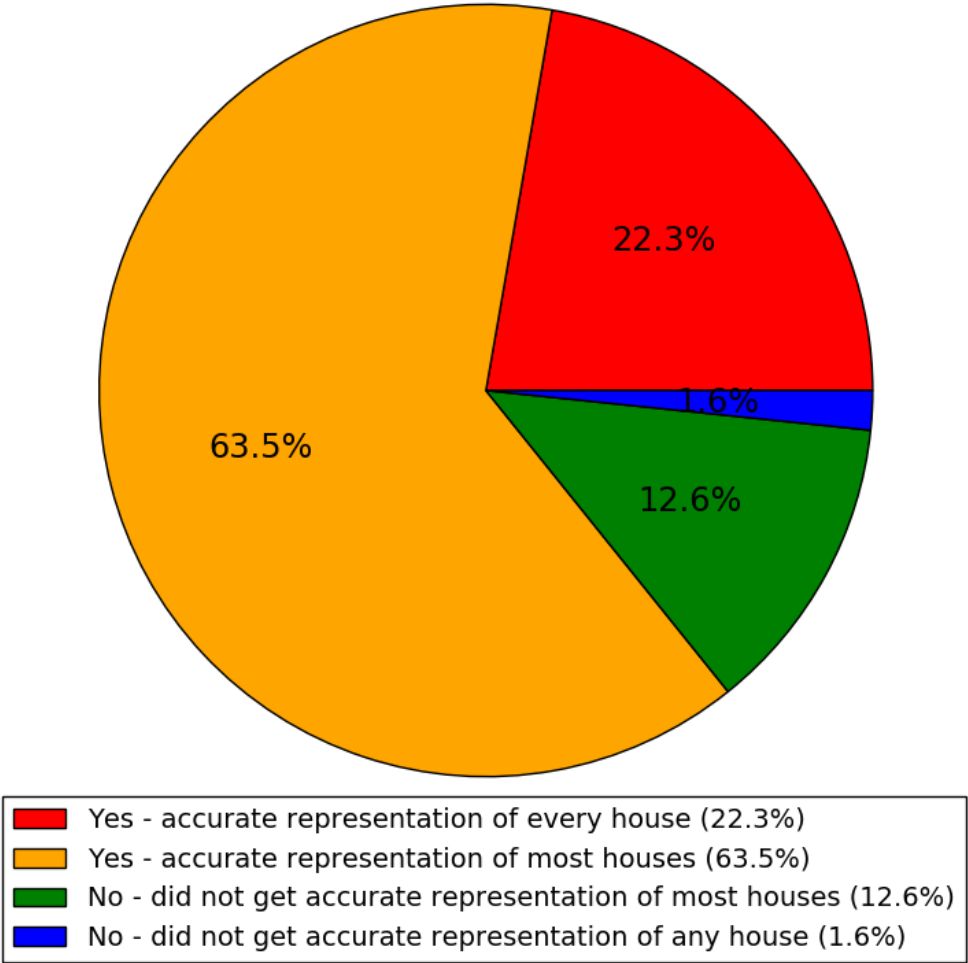


Figure 3: The majority of students report that they got an “accurate representation” of **most houses** during Rotation.

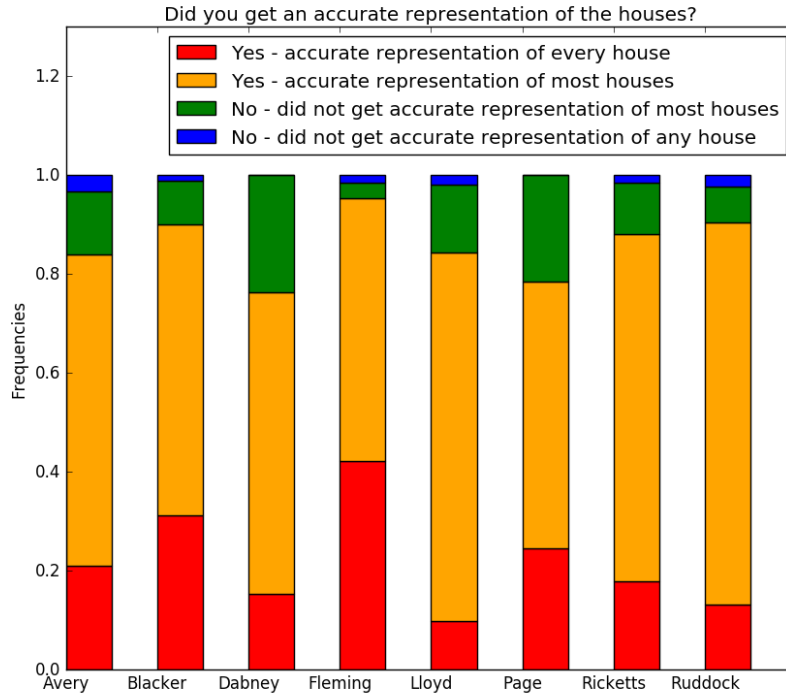


Figure 4: Responses sorted by house.

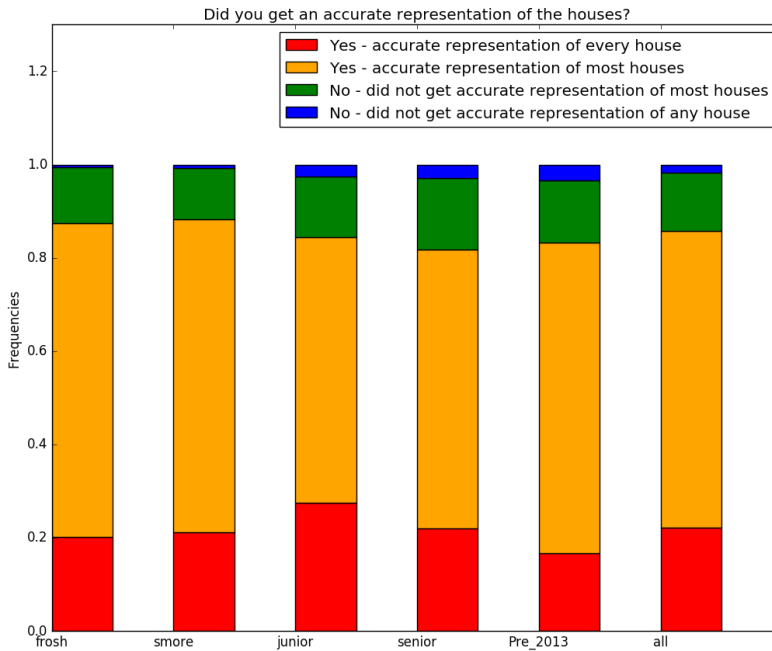


Figure 5: Responses sorted by matriculation year.

Do you feel you had enough information after Rotation to rank your house preferences?

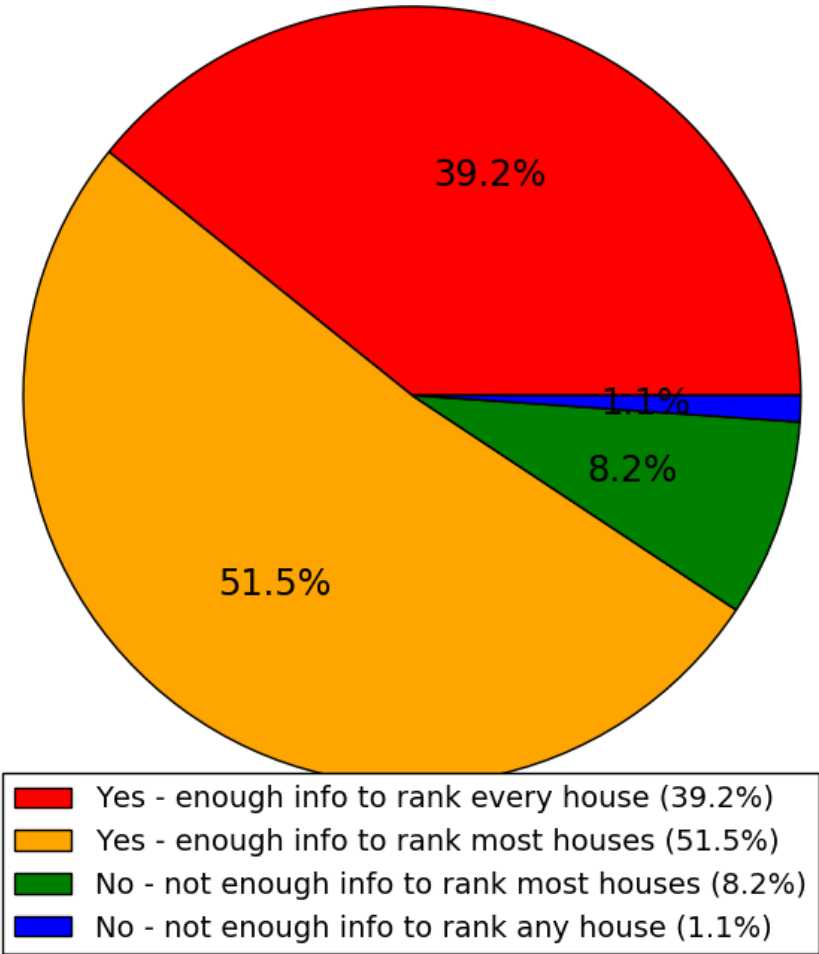


Figure 6: 90.7% of students felt they had enough information to rank every or most houses after Rotation. Less than 10% of students reported having insufficient information to rank most or all houses.

During several Town Hall meetings, it has been casually suggested that rotation be lengthened so that students have sufficient time to choose a house. From the data, **we see no strong evidence that Rotation is too short** or that students have insufficient information to rank most houses.

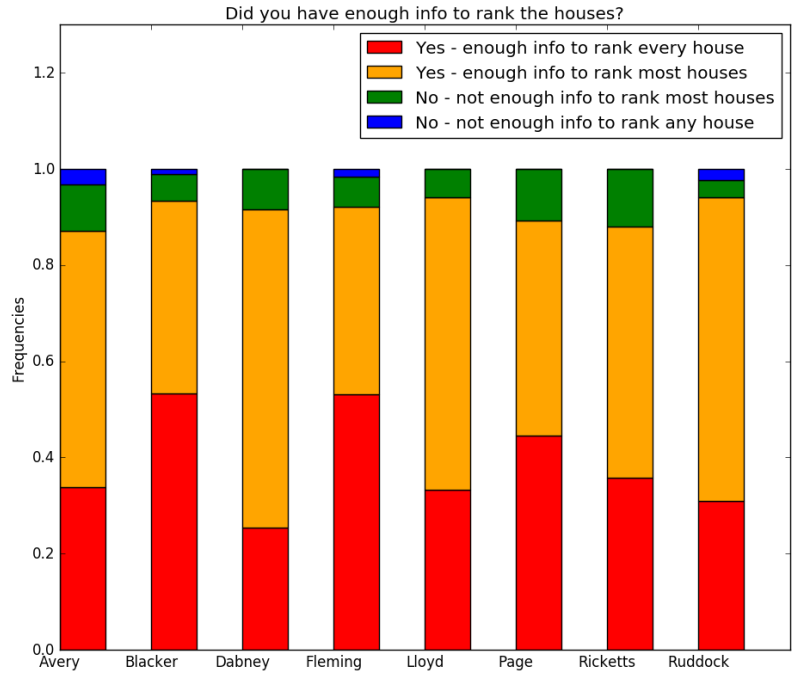


Figure 7: Responses sorted by house.

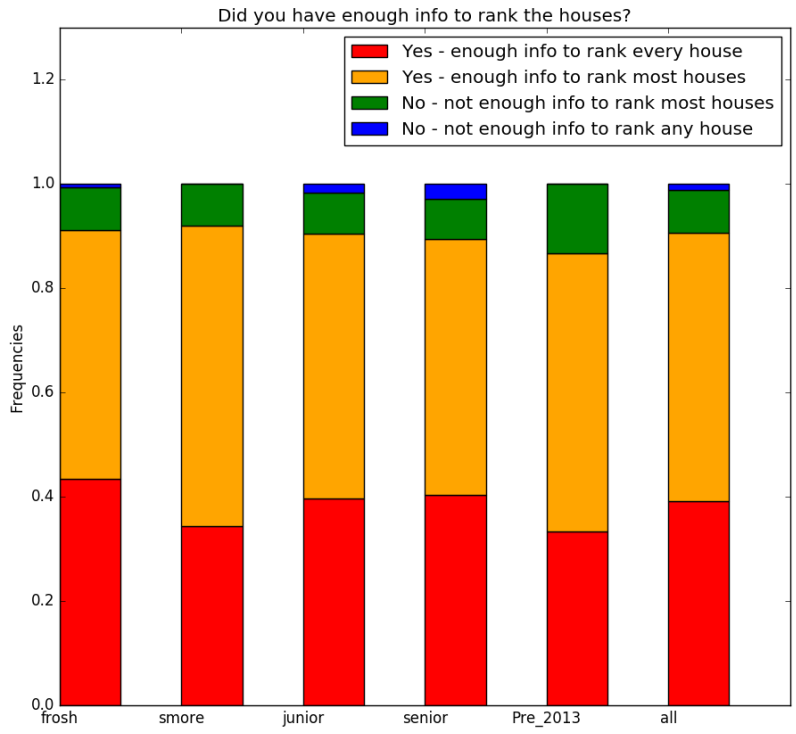


Figure 8: Responses sorted by matriculation year.

## 4 Upperclassmen

### 4.1 Choice of Major

Consider your choice of major. Upperclassmen were:

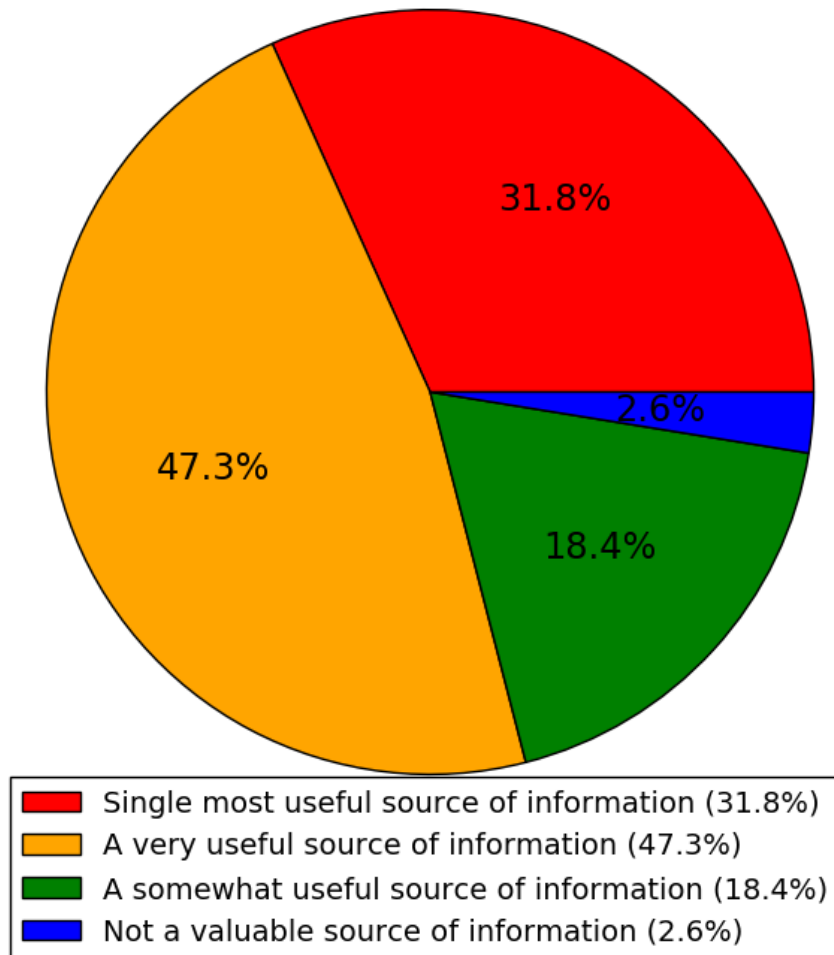


Figure 9: 79.1% of students believed upperclassmen were either “a very useful source of information” or the “single most useful source of information” concerning choice of major.



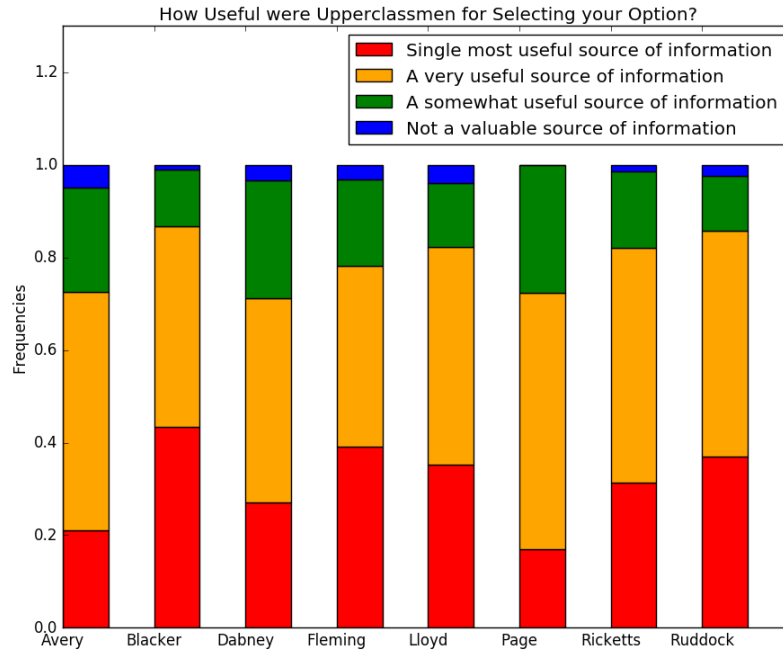


Figure 10: Responses sorted by house.

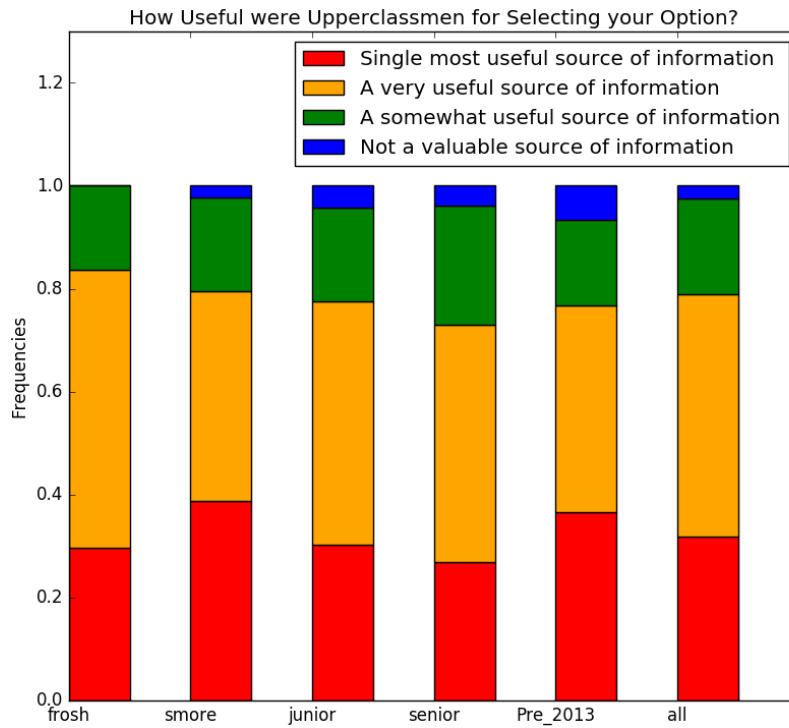


Figure 11: Responses sorted by matriculation year.

## 4.2 Sources of Interclass Interaction

Rank how much you interact with students outside of your year through each of the following:

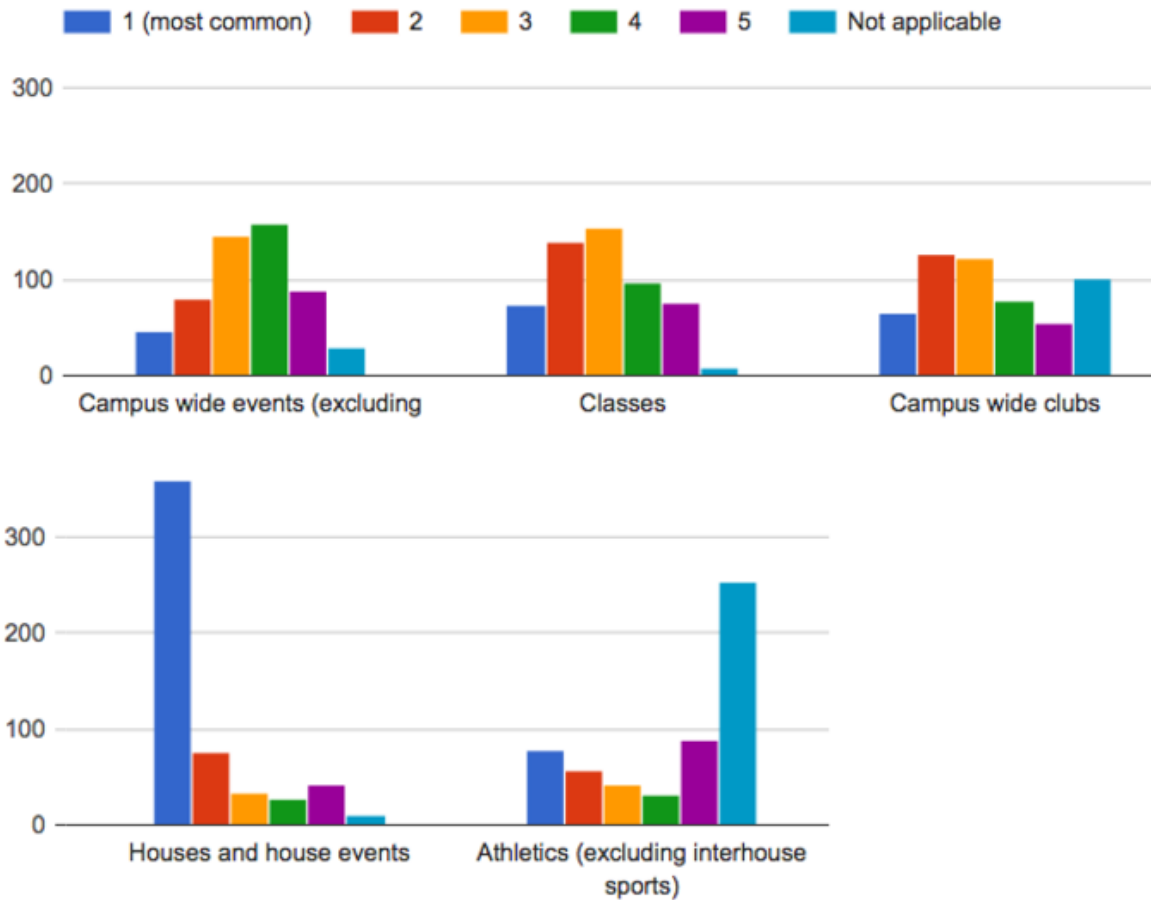


Figure 12: Respondents were asked to rank how much they interact with students outside of their year through 5 different choices. A large minority (20%) of students did not rank the choices and interpreted the question as a Lichert scale asking “On a scale of 1 to 5 how much do you interact with students outside of your year” through each of the following (1 being most common). There is **strong evidence that the houses are the most important sources of interclass interaction**, and that all other sources are secondary.

## 5 Cross House Interaction

### 5.1 Cross House Pairings

		Consistently Interacts with _____ House							
		Avery	Blacker	Dabney	Fleming	Lloyd	Page	Ricketts	Ruddock
Respondent House	Avery	0.951	0.306	0.209	0.129	0.403	0.274	0.177	0.516
	Blacker	0.366	0.977	0.644	0.1	0.188	0.155	0.611	0.488
	Dabney	0.355	0.627	0.932	0.05	0.101	0.05	0.576	0.355
	Fleming	0.156	0.093	0.078	0.937	0.39	0.75	0.265	0.406
	Lloyd	0.431	0.156	0	0.274	0.98	0.372	0.235	0.45
	Page	0.338	0.046	0.046	0.6	0.63	0.83	0.215	0.276
	Ricketts	0.223	0.477	0.567	0.208	0.343	0.223	0.97	0.388
	Ruddock	0.452	0.214	0.154	0.19	0.44	0.273	0.404	0.916

Figure 13: Table of cross house interaction. The house of the respondent is given on the X-axis. Each table entry is the fraction of respondents from a house that reported “consistently interacting” with a member of another house. For example, 30.6% of Avery members reported consistently interacting with a member of Blacker, and 36.6% of Blacker members reported consistently interacting with a member of Avery.

## 5.2 House Connectedness Index

	Avery	Blacker	Dabney	Fleming	Lloyd	Page	Ricketts	Ruddock	Prime House *
Avery	0.951612903	0.306451612	0.209677419	0.129032258	0.403225806	0.274193548	0.177419354	0.516129032	180
Blacker	0.366666666	0.977777777	0.644444444	0.1	0.188888888	0.155555555	0.611111111	0.488888888	119
Dabney	0.355932203	0.627118644	0.932203389	0.050847457	0.101694915	0.050847457	0.576271186	0.355932203	110
Fleming	0.15625	0.09375	0.078125	0.9375	0.390625	0.75	0.265625	0.40625	129
Lloyd	0.431372549	0.156862745	0	0.274509803	0.980392156	0.372549019	0.235294117	0.450980392	131
Page	0.338461538	0.046153846	0.046153846	0.6	0.630769230	0.830769230	0.215384615	0.276923076	131
Ricketts	0.223880597	0.477611940	0.567164179	0.208955223	0.343283582	0.223880597	0.970149253	0.388059701	122
Ruddock	0.452380952	0.214285714	0.154761904	0.190476190	0.440476190	0.273809523	0.404761904	0.916666666	146
Connectedness	0.278231688	0.236318010	0.208187613	0.195301378	0.323461028	0.268073703	0.300044301	0.360803777	1068
PerCapita	0.001545731	0.001985865	0.001892614	0.001513964	0.002469168	0.002046364	0.002459379	0.002471258	
PerCapNorm	0.625483512	0.803584667	0.765850467	0.612628756	0.999154038	0.828065514	0.995193045	1	
	180	119	110	129	131	131	122	146	

Figure 14: “Connectedness” of each house. The row “Connectedness” is the fraction of members outside of house X that report consistently interacting with a member of X. For example, 27.8% of non-Averites consistently interact with a member of Avery. Per Capita divides the Connectedness number by the number of full members in the house, and PerCapitaNorm is the Per Capita number normalized so that the highest Per Capita value is 1. The connectedness index was calculated by summing cross house interactions weighted sum by the size of each house.

\*Prime House is the number of full members of each house, drawn from membership data on donut. The total number (1068) is larger than the undergraduate population due to dual memberships. The number for Avery is an estimate due to a change in membership policy in 2016 that would otherwise overestimate the number of full Avery members.

### 5.3 Number of Cross House Interactions

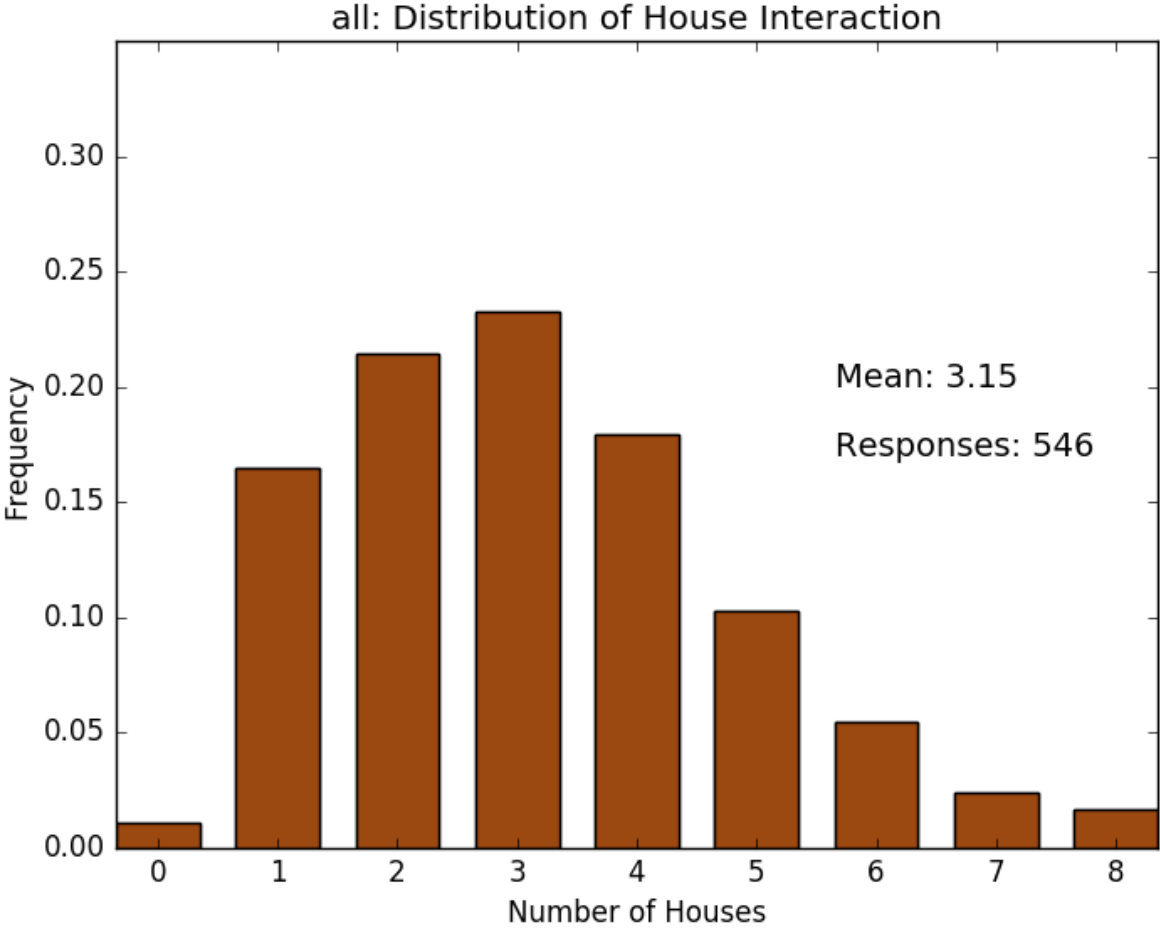


Figure 15: Distribution of the number of houses that respondents reported “consistently interacting” with. The mode is for students to interact with students from 3 houses. 16.5% of respondents report only interacting with members of a single house.

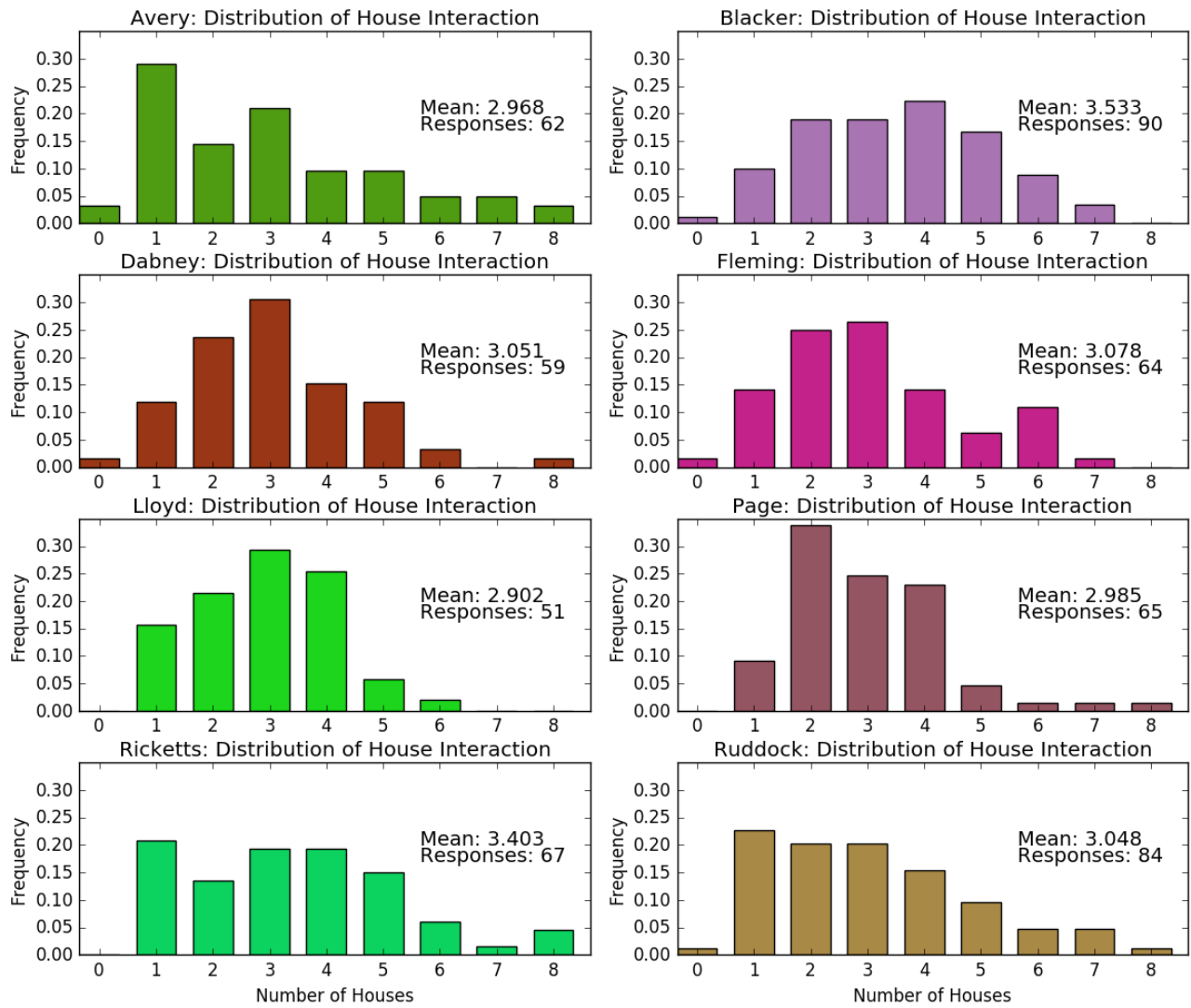


Figure 16: Number of cross house interactions by house.

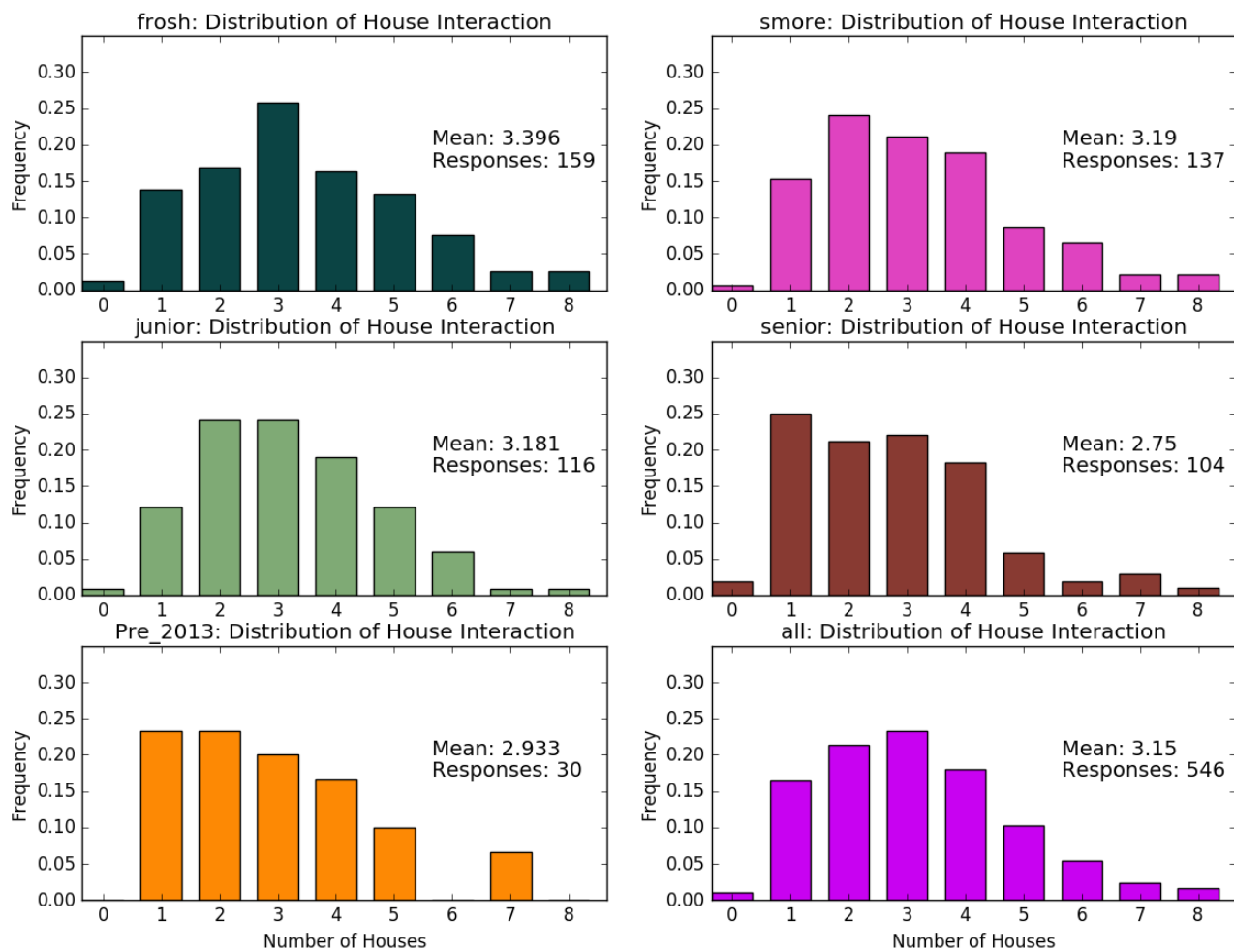


Figure 17: Number of cross house interactions by year.

# 6 Cross Block Interaction

		Consistently Interacts with _____ Block			
Respondent Block		Avery	North	South	Fraction Insulars*
	Avery	0.952	0.629	0.484	0.29
	North	0.41	0.96	0.575	0.235
	South	0.282	0.604	0.979	0.312
		*Respondents who only interact within their block (Avery, North House, South House)			

Figure 18: Table of cross block interaction. The data is the same as the data from Figure 7, grouped by “Block” (North house, South house, Avery). 28.4% of respondent report only interacting with students within their block.



# 7 Matriculating to Caltech

How did the House System influence your decision to come to Caltech?

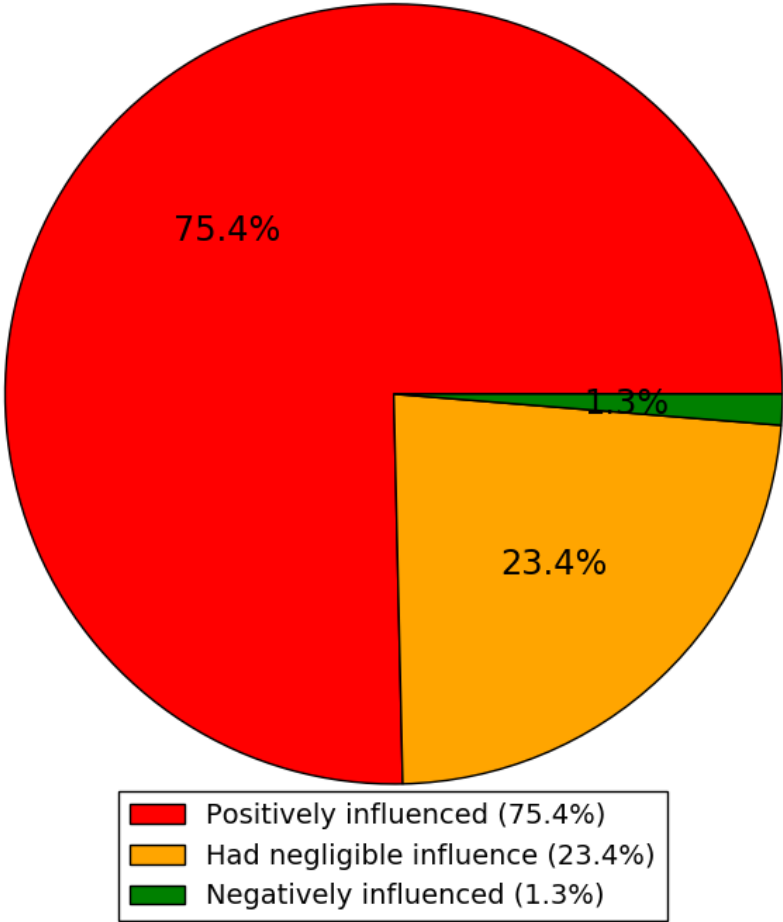


Figure 19: Influence of the House System on respondent’s decision to matriculate to Caltech. Given that the sample population only consists of students who chose to matriculate to Caltech, the data is unsurprising.

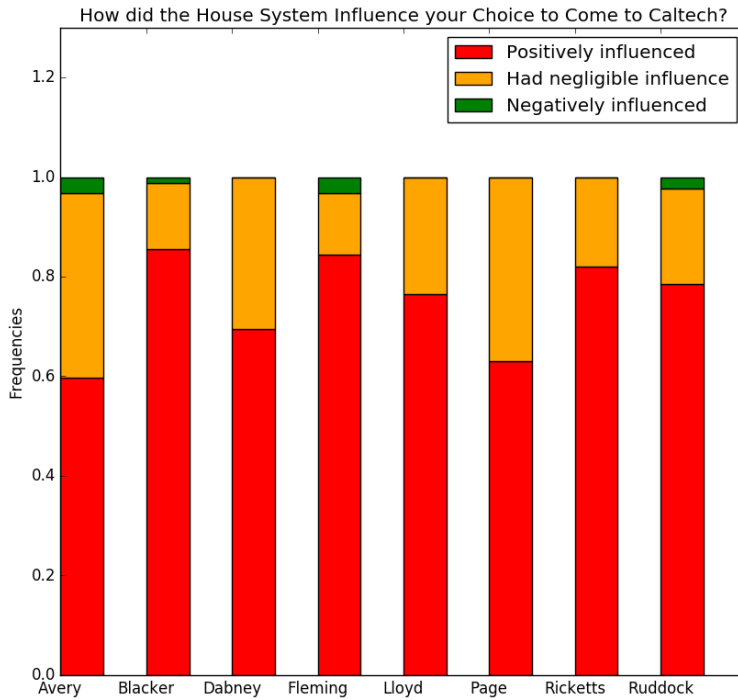


Figure 20: Responses sorted by house

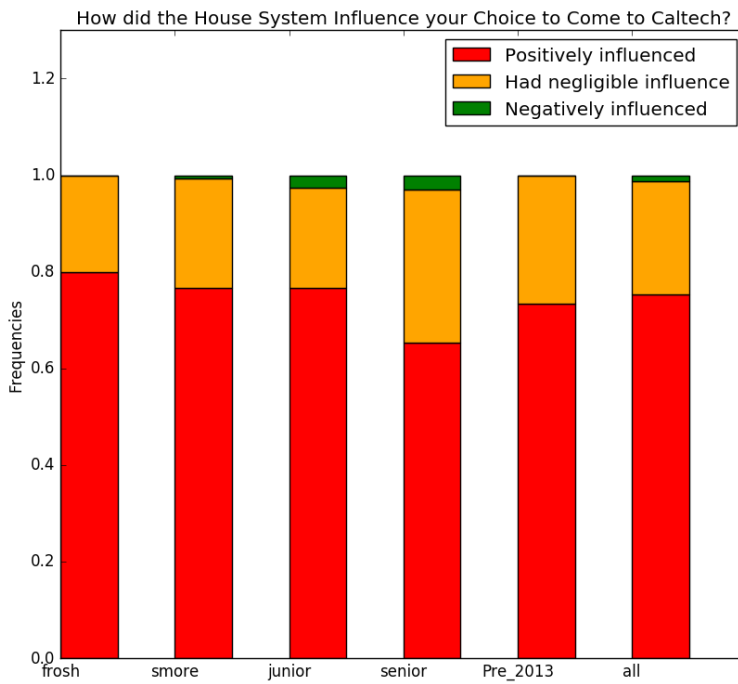


Figure 21: Responses sorted by year.

## 8 Conclusion

Several observations from the data:

- Houses are overwhelmingly the primary source of interclass interaction. All other sources are secondary.
- Upperclassmen are considered an important source of information concerning majors.
- There is no strong evidence that Rotation is too short for students to rank the houses.
- The House System probably has a positive impact on yield, but the effect is weak and the magnitude is difficult to estimate.
- A minority of students (16.8%) only interact with students from one house and 28.4% of students only interact with students from their own block (North house, South house, Avery).
- There are certain combinations of houses and blocks where there is very little interaction.
- The typical student consistently interacts with students from 3 different houses.

There are potential biases from the timing of the survey. The survey was sent towards the end of winter term. Students may have an imperfect memory of how much information they had about the houses directly after Rotation. Student experiences since Rotation may also bias how accurate of a representation of the houses students felt they received during Rotation.

There are also potential biases from an unrepresentative sample. The distribution of responses was fairly representative of the overall population in terms of year and house affiliation. However, students who are disassociated from the House System are less likely to respond to surveys concerning the House System.