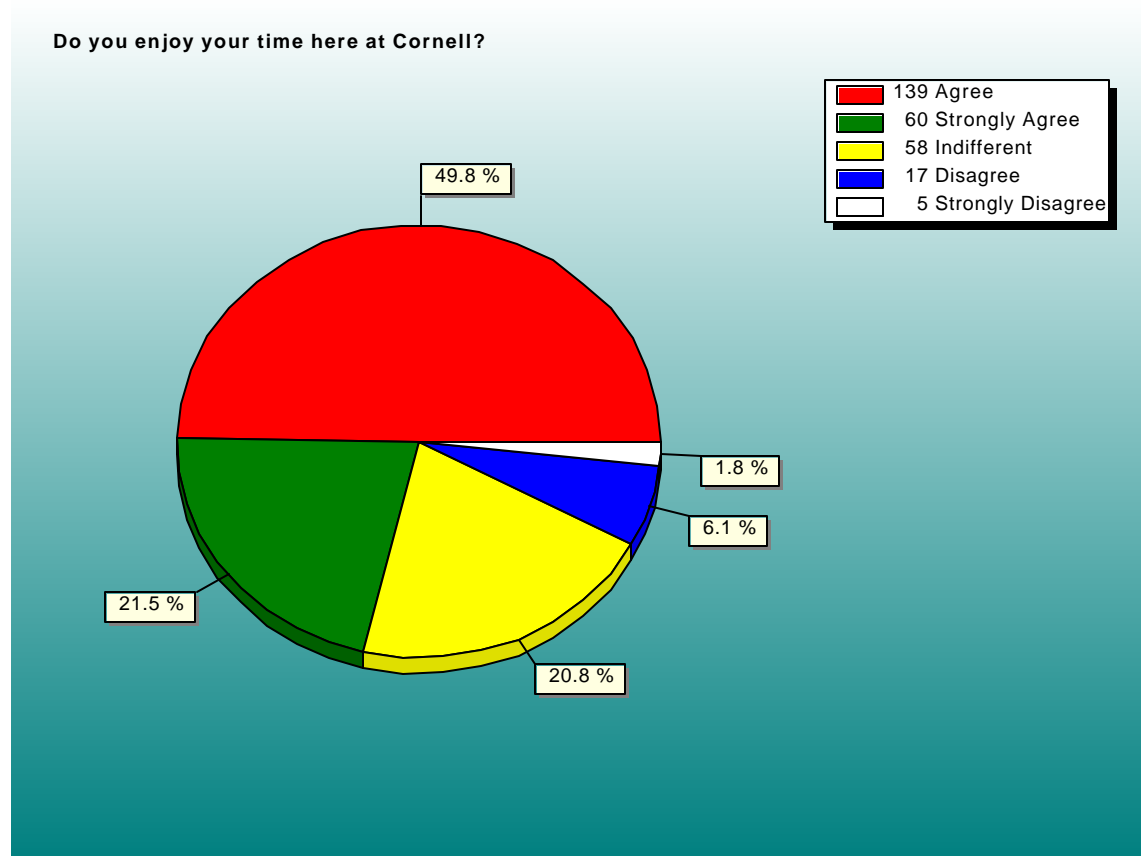From the Voices of Engineers at Cornell

2003 Undergraduate Strategic Planning and Advisory Committee
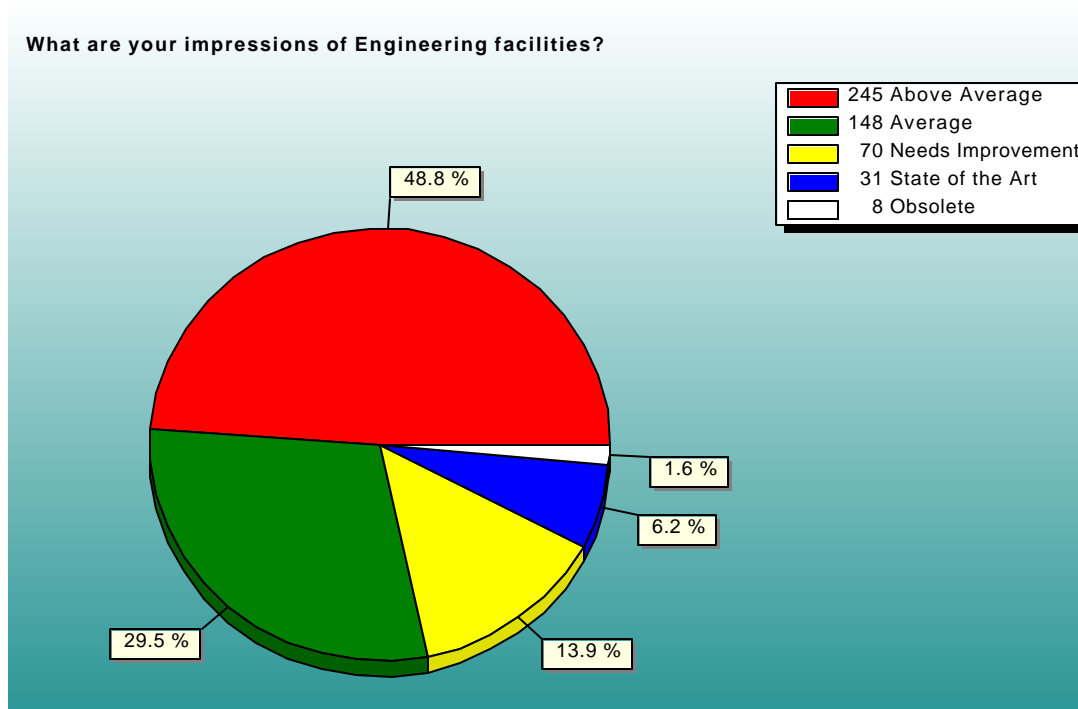
Introduction

Do you enjoy your time here at Cornell?

■ (red)	139 Agree
■ (green)	60 Strongly Agree
■ (yellow)	58 Indifferent
■ (blue)	17 Disagree
□ (white)	5 Strongly Disagree

49.8 %

1.8 %

6.1 %

21.5 %

20.8 %

The above chart, and those listed in the appendix, serve as optimistic justification that Cornell Engineering is doing well as a university, in terms of satisfying the general experience of being at Cornell. Still, as in all institutions of excellence, we are not without opportunities to improve ourselves, to increase not only the red and green sections of the pie graph, but to give worth and purpose.

Issues Facing the College of Engineering

Facilities

What are your impressions of Engineering facilities?

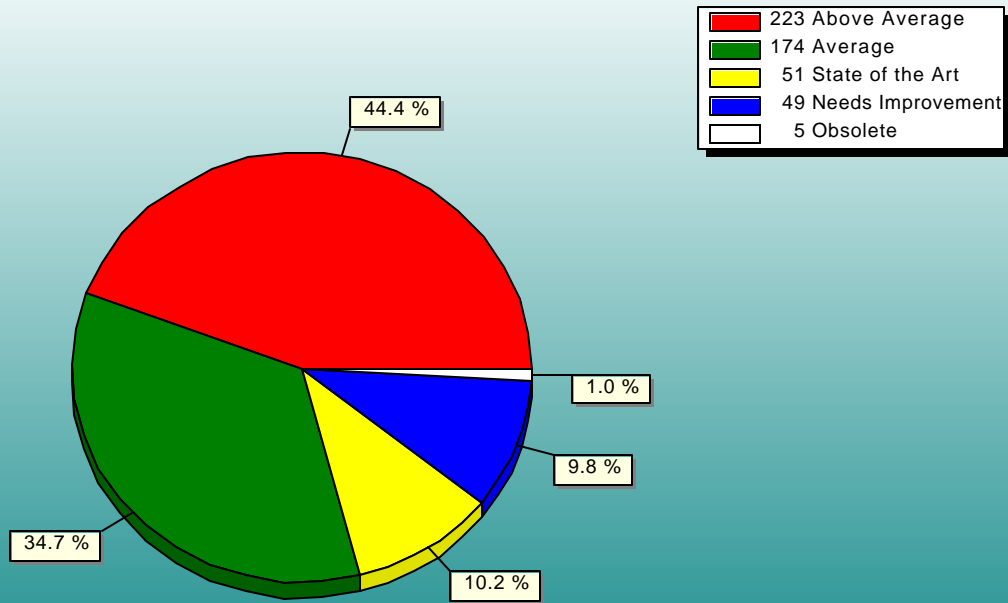|	
🟥	245 Above Average
🟩	148 Average
🟨	70 Needs Improvement
🟦	31 State of the Art
⬜	8 Obsolete

48.8 %

1.6 %

6.2 %

29.5 %

13.9 %

As the above survey shows, general impressions of Engineering facilities are pretty satisfactory. Pertinent comments about facilities tend to focus on:
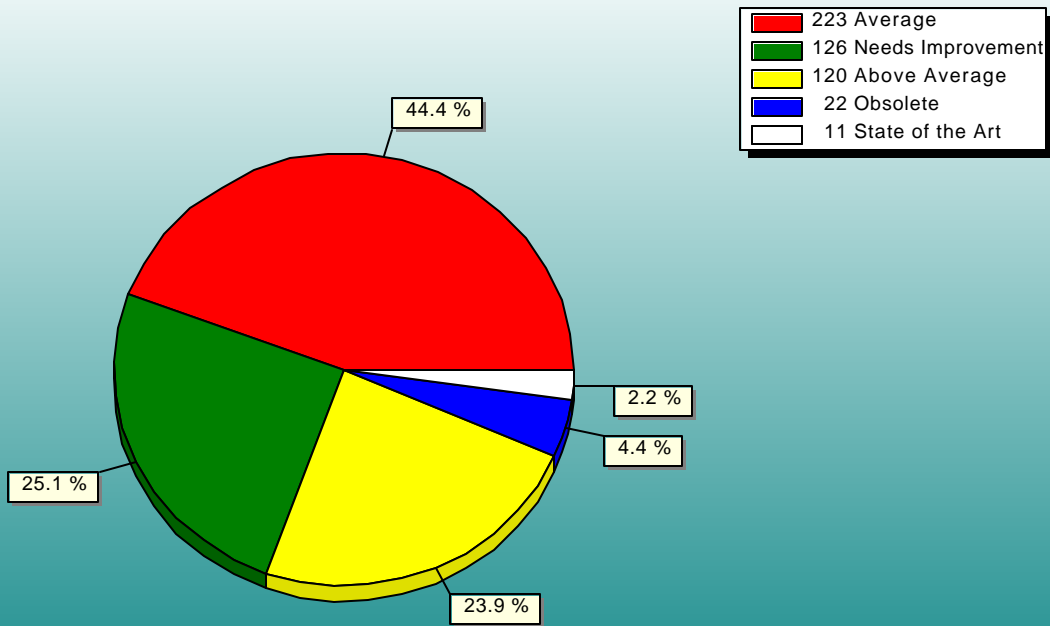1. Carpenter library – a general tend of satisfaction, but still a wanting of more
2. Study lounges – SEVERAL comments about poor conditions of chairs, no couches, poor design, faulty computers, etc. Terrific opportunity to revamp and build some community feeling.
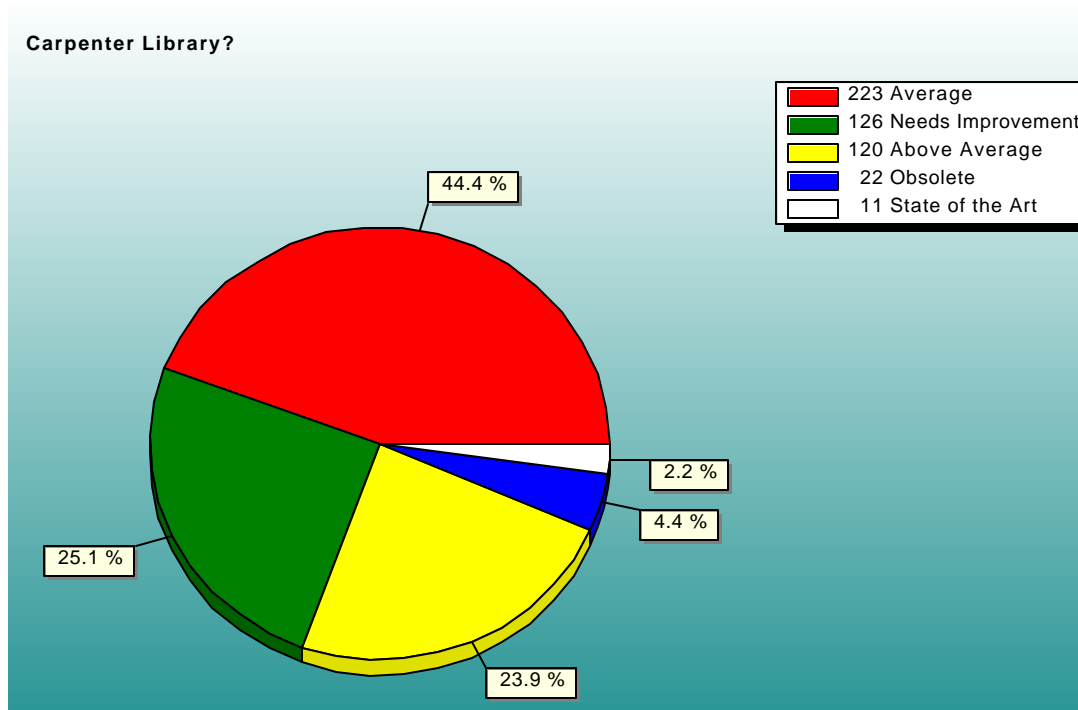
The following plots show student sentiment toward facilities – note that these are among affiliated students with 1+ years of experience at Cornell.

Computer labs, i.e. in Phillips Hall, Upson Hall, Carpenter library?

🟥	223 Above Average
🟩	174 Average
🟨	51 State of the Art
🟦	49 Needs Improvement
⬜	5 Obsolete

44.4 %

1.0 %

9.8 %

34.7 %

10.2 %

Carpenter Library?

🟥	223 Average
🟩	126 Needs Improvement
🟨	120 Above Average
🟦	22 Obsolete
⬜	11 State of the Art

44.4 %

2.2 %

4.4 %

25.1 %

23.9 %

Carpenter Library?

Legend:
- 223 Average (red)
- 126 Needs Improvement (green)
- 120 Above Average (yellow)
- 22 Obsolete (blue)
- 11 State of the Art (white)

44.4 %
25.1 %
23.9 %
2.2 %
4.4 %

Choice comments:

"The computers in **study lounges** (like Hollister 202) tend to not work consistently so you have to crowd into the ACCEL lab where you sometimes can't find an empty computer.
New computers, Updated software, Better operating systems on machines (Windows 2000 or XP), more computers"

Carpenter Library could offer more **individual desks** and **comfortable chairs** instead of what is currently offered.

computer labs are great. i wish carpenter library has **more tables** and study areas
More computers at Carpenter

Be nice in Carpenter had **individual group study rooms** that you could check out equipped with computers.

We need our quad back.

Pertinent comments regarding Academic Concerns:

The main gripe regarding Academic concerns has much to do with mean/avg-based grading, which perpetuates heavy competition and a cutthroat mentality.

Very few relationships were built for me threw (sic) engineering because of the **competitiveness** and the **general lack of interest shown by professors** .
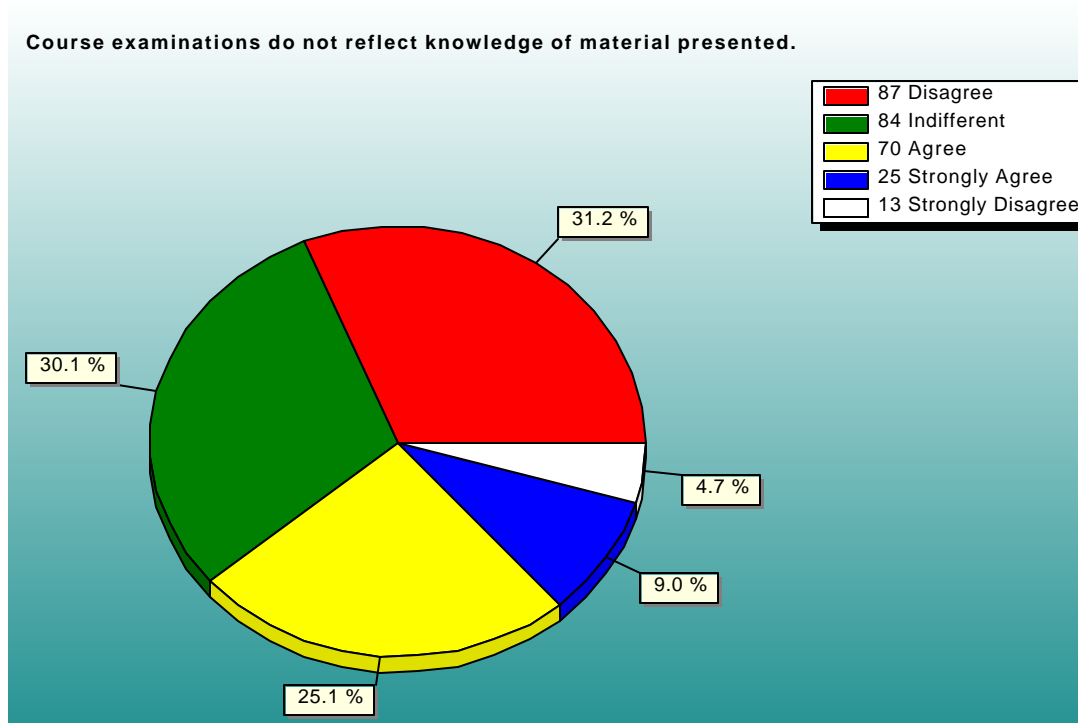
I find that **fighting the mean** here is stressed more than comprehension, which is frustrating.

Again, **competitive** atmosphere is not helpful. It causes people to become greedy and do anything they can to do better than others. Many times this leads to people not being willing to work with others for fear of bringing the means up. Many will even **intentionally give wrong information** to confuse others. I think that these kinds of activities would not happen so often if the atmosphere were not as competitive.
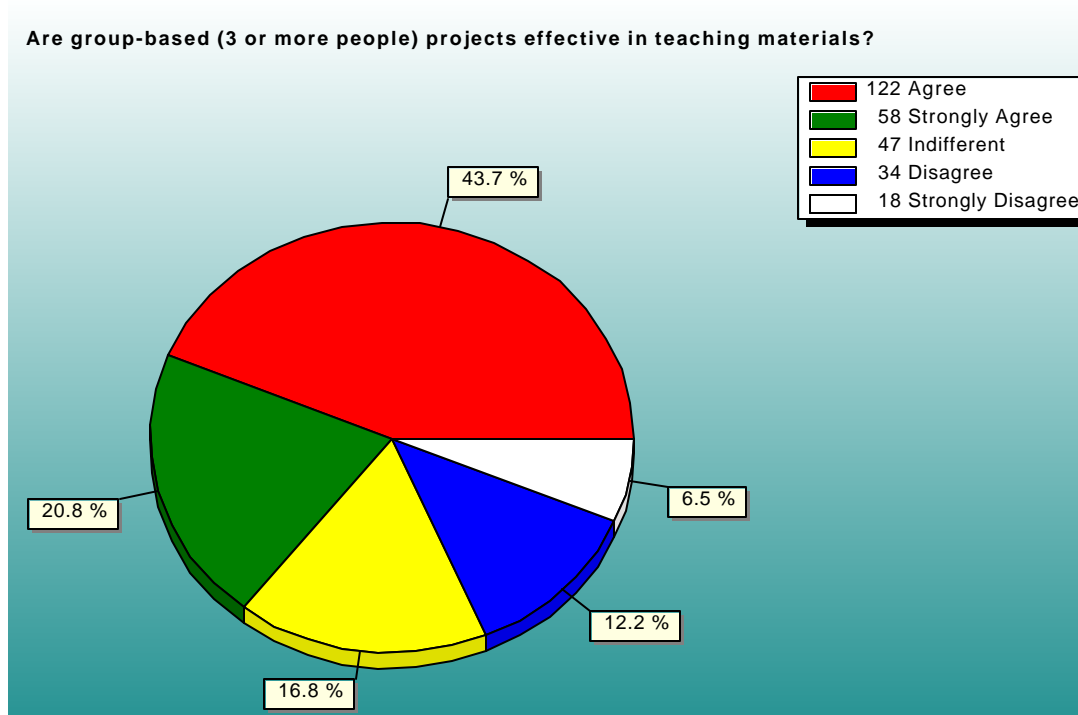
I think that the **work load is too much**. There is not enough engineering student interaction with the rest of the cornell communtiy because of this.

I have two majors and of the two, I notice that engineering **doesn't prepare you for life** so much as try to make you compeate for a position. It fosters a **cut-throat** atmosphere between peers and pits students as oponents instead of resorces to each other. I do not like this and don't work this way; but it is telling that my fellow students are dumbfounded when I don't try to screw them over [i.e. actually answering a strangers question about unclear material before a test, he was shocked that I would help him!]… I'm transferring out of the college at the end of this semester.

Exams, perhaps predictably, are viewed with either indifferent or counterproductive effectiveness.

Course examinations do not reflect knowledge of material presented.

🟥	87 Disagree
🟩	84 Indifferent
🟨	70 Agree
🟦	25 Strongly Agree
⬜	13 Strongly Disagree

31.2 %

30.1 %

4.7 %

9.0 %

25.1 %

Group based projects are perceived more favorably, but reservations still arise.

Are group-based (3 or more people) projects effective in teaching materials?

■	122 Agree
■	58 Strongly Agree
■	47 Indifferent
■	34 Disagree
□	18 Strongly Disagree

43.7 %

20.8 %

6.5 %

12.2 %

16.8 %

As of now, many **group-based projects** put certain students at a disadvantage. Group learning can be effective, but the teachers need to be trained in how to implement it. Some professors have successfully done this, while other professors hear "group" and just say, find your own group, do your homework together, and you'll get the same grade. This doesn't always work, especially for freshmen and sophomores who have not necessarily made friends with everyone in the class (while others have already formed their cliques).
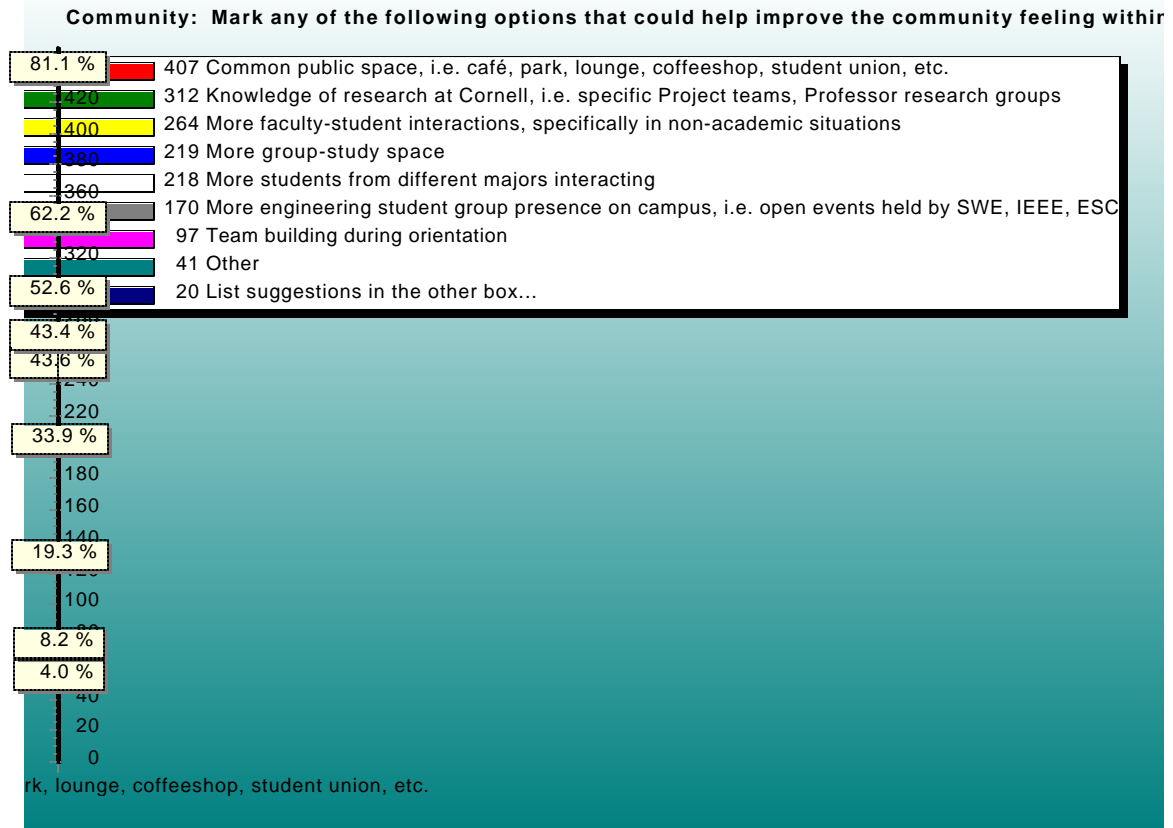
The strongest argument for teamwork:

Social skills are highly lascking, and I often see competition for grades where cooperation should be present. More emphasis on **real world** and **team engineering** and less on concepts and grades. More free thought and creativity, less monotonous problem sets. People are missing the big picture: what we do here should prepare us to be good citizens out in the workplace, not monkeys who regurgitate answers to problem sets. **Inovation and aspiration** are needed for humanity's progress, not **blind academic dedication** and removal from the social arena for the sake of good grades.

Community

The "community feeling" elucidated by the students at Cornell Engineering is reinforced by the following factors:
1. Large class size translating into limited personal attention
2. Intra-class/intra-major competition

The strongest suggestion of remedy? As seen in the red, a common public space.

Community: Mark any of the following options that could help improve the community feeling withir

81.1 % ▬ (red)	407 Common public space, i.e. café, park, lounge, coffeeshop, student union, etc.
420 ▬ (green)	312 Knowledge of research at Cornell, i.e. specific Project teams, Professor research groups
400 ▬ (yellow)	264 More faculty-student interactions, specifically in non-academic situations
380 ▬ (blue)	219 More group-study space
360 ▬ (white)	218 More students from different majors interacting
62.2 % ▬ (gray)	170 More engineering student group presence on campus, i.e. open events held by SWE, IEEE, ESC
320 ▬ (magenta)	97 Team building during orientation
52.6 % ▬ (teal)	41 Other
	20 List suggestions in the other box...

43.4 %
43.6 %
220
33.9 %
180
160
140
19.3 %
100
8.2 %
4.0 %
40
20
0

rk, lounge, coffeeshop, student union, etc.

Smaller classes in lower level courses would help garner interest as well. Also, probably in part because of the size of classes, no one seems to care about your academic progress as a freshman. This can make you start to reconsider what you're doing and look at other options. It does get better after freshman year, but there's no way of really knowing that while you're going through it. There's no clear reason why freshman year, academically, has to be so rough.

the college in general is less sociable and the environment created by students is **less open**, because 1) the classes are so large, interaction is less personal with fellow students, 2) curriculum is hard, people focus less on outside activities, 3) it seems like many engineers in general keep to themselves, 4) theres some competition for grades, creates some hostility

       Given this data, the information we collected from surveying real Cornell students. But the question remains where do we go from here, what direction does this information take us?
       I considered the same aspects and wondered how to find possible solutions.

The basic issue boils down to attitude. We want to maintain and even toughen our academic standards and rigor. A way such that learning is challenging but possible, where abilities are stretched, not snapped. One way for to strengthen this attitude is to build the community. To build our own engineering community.

Of course, those words are cheap to use. So let us ask a more basic question up: what IS a community? Some might say it's a collection of people for a common cause, others might say people with the same goals or interests. But at an even more basic level it's just conversation – not random discussions, spread out along the frequency spectrum like white noise. Conversation about a common topic. Honest words between honest people.

And it can't be accomplished by a mass-email or an announcement or a flier or a listserv hit. It has to be real, sincere. Because people can sift through the b.s., filter the talking heads – in fact, trying to artificially inseminate conversation on the Cornell campus would amount to accomplishing the OPPOSITE of the objective you initially desired. They'd be laughing, not talking, about your idea.

So then our next question is: what would inspire a great conversation on the Cornell engineering campus? Here I'm stumped. But instead of discover WHAT to talk about, can we make the Cornell Engineering campus more conducive toward conversation?

It's not just putting up more posters or more paintings. Rather, removing the boundaries which block people from speaking with one another. How about:

1. Revamping the lounges with couches, not chairs; TV's and DVD players; Wi-Fi access; but those are just cosmetic. Hold a once a month student group activity at each lounge – have it stress-reducing related. IEEE has a circuit-bashing day every semester – why not have all the majors do one each month. Hey, let's be honest, we all have stress – let it out. Professors required to attend AND participate.

2. Doing extremely random activities. Why? Because normal doesn't cut it anymore. E.g. a polar bear at a local zoo was injected with antibiotics which made its skin turn purple – not exciting until it was reported that attendance went up 50% because of the novelty.

Now, do we spray paint everything? As crazy it sounds why not? Okay, maybe not literally spraypaint, but pick a day to recolor a classroom or introduce a crazy experiment. Forget the rational, mundane, "free pizza" – been there, done that. We need events, not necessarily that often, which introduce chaos and imagination. We need to remind our engineers that beyond the physics, mathematics, and design lies an opportunity still guided by free-ranging ideas and counter-intuitive decisions.