

# Frankly Speaking

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Olin's Official Campus Newspaper Since . . . Now

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Issue 1

## Airborne at Last!

*Special Message From President Rick Miller*

This is a year of new beginnings. The College is beginning its first year of formal instruction with a fresh new curriculum. A few weeks ago, we moved into the brand new buildings on our main campus. Our newly arrived students are beginning their college career and making many first-time adjustments. For the past few years, we have been describing our experience at Olin College as building an airplane while flying it. This fall, the plane is sufficiently built that we began our rush down the runway and recently we lifted off the ground for the first time. We are airborne!

I want to thank all faculty and staff members in the Olin College community for their extraordinary effort to launch the academic program, facilities, and operations this fall. The quality of the result has attracted unsolicited praise from many people outside our community, and the speed with which it was accomplished has amazed everyone. I also want to thank the gifted student body that turned down other well-known schools to become pioneers at this brand new institution.

We are on a great adventure. Although we made a terrific start and are now airborne, our altitude at this stage is only a few feet off the ground. We have a long way to go. We have set very high expectations, we have attracted a lot of attention, and we have a great opportunity ahead of us. However, the hard work is just beginning. And with so much left to be done, there is a great deal of uncertainty. Uncertainty nearly always accompanies opportunity, and Olin College is no exception.

I would like to talk a little about this hard work and uncertainty, because I think they are going to become familiar to all of us in the months and years ahead. The opportunity to design a completely new college is not only a great privilege—it is also a great responsibility. Design is all about making decisions and choices. The most important choices are always made in the face of uncertainty, because they must be made before all the consequences can be evaluated. Design is always like that. One price for the opportunity to design is accepting the uncertainty that comes naturally with decision-making.

The whole reason Olin College was initiated is to rethink engineering education and do the best possible job—within our available resources—of providing an innovative educational experience. This is a heavy burden. To do our best, we will always have to use all the time we have to optimize our set of decisions. (Students are familiar with this in the context of taking exams. To optimize their performance, they almost always use every last minute of the time available before turning in the exam. By analogy, we will likely use as much time as we can to study and test alternatives before making final decisions in the design of Olin College's curriculum, physical plant, operations, and everything else.) We could always reduce the uncertainty by just taking existing solutions off-the-shelf from other programs, but then we would not meet our objective of rethinking everything we do.

Living with uncertainty is never pleasant. It requires a great deal of faith that the results will be worth the inconvenience. At this stage in our development, many observers feel we have made extraordinary progress. The most important aspect of any college is the quality of people it attracts. The faculty, students, and staff that we have attracted are among the most outstanding I have seen anywhere. They are not only smart, but also creative, friendly, and enthusiastic about our mission. I think Olin College was the first choice of nearly everyone who has joined us, and this gives us a great advantage as we work through the inconveniences of on-going construction of facilities and programs. In addition, the curriculum that we are developing has already been reviewed by members of the President's Council (see our web site for biographies) and they have uniformly praised it as well balanced and innovative. Our new facilities are among the most attractive and functional of any school of engineering I have seen. The media attention and enthusiasm for Olin College has been remarkable. The reputation of the school is off to a superb start. In addition, Olin College is one of the most "well intentioned" places I have encountered. Everyone here sincerely wants the best outcome for the College. Judging by our early results, I think we should all expect the program and its reputation to continue to develop as one of the best in the country.

Now, a few remarks about hard work. Few majors on any campus are as demanding in terms of rigor and hard work as engineering. The long hours on problem sets, lab reports, and design reviews are notorious. On many campuses, this has led to a culture of tedious hard work and boring exercises that are rarely tied to real engineering examples and almost never described as fun. From the beginning, we at Olin College have questioned whether the study of engineering must be boring and tedious. We believe that it should be infused with the adventure of invention and creation, and there should be a distinct element of fun woven into the fabric. But we never believed it would not also involve a lot of work. No one has yet discovered a way to effectively teach the fundamentals of science, mathematics, and engineering that does not involve a lot of effort on the part of students. Above all, we are committed to making sure that every Olin College graduate has had rigorous preparation in the fundamentals so she/he will

not be at a disadvantage relative to graduates of any other engineering school. So, we try hard to teach the required subjects in new ways that involve real world applications and an element of fun that is rare on other campuses. The goal is not to eliminate all the work, but rather to make the work more motivating, satisfying, and entertaining.

Since we are simultaneously designing the sophomore, junior, and senior years of the curriculum while marching through the courses of the freshman year, the hard work of learning the traditional subjects (and teaching them for the first time) is compounded by the hard work of researching and testing new ideas, and making the many decisions involved in designing for the future. No doubt about it, we will be busy here for the foreseeable future!

At this point in the first semester many of our students are probably struggling with balancing their time commitments among many competing interests. On the one hand, they are taking a set of very demanding academic courses. On the other hand, they have also been encouraged to explore passionate pursuits, and to develop social relationships. These are also very important aspects of college life, and they take time. So, how do you make decisions about setting priorities in this environment, and what priorities does Olin College expect you to use?

I think a variation on the story Dean Crafts read at the end of your first evening on campus might be useful here. Think of the time available to you as the volume of an empty jar. Then think of adding contents to that jar as filling your time with activities. If the jar is to be filled with a combination of rocks, pebbles, and sand, and if it is challenging to fit it all in the jar, then you will find that it makes a difference which things you put in the jar first. For example, suppose there are just enough big rocks that they fill the jar to its brim. No more big rocks can be added. However, there is still room—in the cracks between the rocks—to add a lot of pebbles. This might take a little jiggling to get the packing to work, but there actually is room for this. Finally, there still remains some space between the pebbles to add some sand, too, until the jar is finally filled to capacity. Note, however, that if the jar is first filled with sand and pebbles, there will be no room for the big rocks. (It's a geometry thing.)

In this analogy, the big rocks are the most important activities, and they must get first priority. I would personally think the most important activities for most students at this stage are the academic courses that are required to graduate. In my opinion, these should receive the highest priority in deciding how to spend your time. Next, a lot of pebbles can be fit in around the big rocks, and these might represent relationships with other students and with faculty and staff members. I believe relationships are a very important part of college life, and there is always room for building relationships around the big rocks of academic courses. (Years from now it will likely be the lasting relationships with faculty members and classmates that open the most doors and mean the most to you.) Finally, between the pebbles, there should be room for some sand. In fact, when

you become experienced at this, you might be surprised at how much sand can be packed into the jar around the pebbles and big rocks. (Most of the Olin students packed a LOT of sand into their jars in high school—resulting in long lists of extra-curricular activities and accomplishments.) This third priority of activities might represent passionate pursuits, co-curricular activities, and social activities not particularly aimed at building lasting relationships.

As we experiment with courses and projects and operating procedures in the months ahead, we will always be concerned about doing our best to make the best decisions. I expect that sometimes we will realize in mid-stream that we are heading in the wrong direction. In that case we intend to be responsive to the concerns of those that identify the problems, and then work as a community to develop a mid-course correction. This is the pattern that we will all see many times in the weeks and months ahead. It is characteristic of the process of design. However, by designing a new college, and rethinking the fundamentals of engineering education as we build them into the program, we are building an institution that will become known for excellence and innovation—an institution that will last much longer than any of us, and one that has the potential to inspire needed change in engineering education in many other colleges. What we are doing together will touch many lives. We are not just involved in learning together—we are involved in a major engineering project together. I hope you never lose sight of the great adventure we are on.