

What's So Special About Olin College?

by

Richard K. Miller

Executive Summary. Many (although not all) people who visit Olin College conclude that there is something special going on here. Prospective students, news reporters, corporate sponsors, visiting faculty members, and many others usually agree that Olin is a remarkable place. This conclusion often seems to follow quickly after meeting representatives of Olin's student body. Understanding exactly what is at the core of this reaction is of great importance to us for many reasons. Reaching a consensus about what is compelling here and concisely capturing it with precision would help us accurately build on our strengths and achieve our full potential as we plan for the next five years. This brief paper augments the efforts of the strategic planning committee to answer this and other questions and presents the context for a discussion to take place at the President's Council meeting here on May 7, 2007. The reader is asked to contribute to our understanding by answering a few key questions at the end of this paper.

Context. Olin College is no longer an early stage start-up, but neither is it yet a mature institution. In some ways it is in its early adolescence. The charter first establishing the College was granted by the Massachusetts Board of Higher Education in November 1997. The first employee was hired in February 1999. Ground breaking for construction of the campus buildings occurred in May 2000. The first classes were taught in August 2002. The first commencement was held in May 2006. *Newsweek* magazine declared Olin College among the 25 "New Ivies" in August 2006. Accreditation was received from the New England Association of Schools and Colleges in December 2006¹.

However, this rapid pace of intense activity has begun to take a toll on some members of our community, and the "can do" attitude that has been so essential to this success has begun to fade. Some concerns about sustainability—both financial and human—have arisen, and some feel that the appetite on campus for continued innovation and improvement is in decline.²

Nevertheless, the remarkable post-graduate opportunities enjoyed by the Class of 2006, the large and rapidly growing pool of applicants for admission, the recent solid performance of our substantial endowment, and the rising reputation of the College as an institution marked by academic excellence and dedicated to innovation and fresh ideas all provide momentum and sound reasons for high expectations as we plan for the next five years. Few colleges have a better starting point for developing a five year plan, and a great many colleges would quickly trade places with us today if offered the opportunity to do so.

The current strategic plan, *From Promise to Reality*, will expire later this year. A strategic planning committee consisting of six members of the faculty and staff together with one Trustee and a student representative was formed in early 2007³. A professional planning consultant⁴ has been engaged to help guide the process, and a three-phase planning process is now underway.

¹ Retroactive to April 2006

² A more complete description of the current state of affairs was provided in the white paper "*Inventing the Future: Planning at Olin College for the Next Five Years*," in October 2006.

³ The Strategic Planning Committee consists of Profs. Sarah Spence Adams, Allen Downey (Chair), Gill Pratt, and Burt Tilley; staff members Manuel Amaral and Joseph Hunter; Trustee Dr. Robert McBurney, and student Ms. Tiana Veldwisch ('08).

⁴ Eileen Shapiro

The first phase of the process involves gathering feedback from all members of the Olin community on the emerging global trends likely to impact our future environment, as well as identification of our strengths, weaknesses, and major opportunities. A special effort has been made to reach out to students, parents, faculty, staff, Trustees, members of the President's Council, corporate partners and friends of the College. Many open meetings have been held on campus, written feedback has been solicited from those who are not on campus, and selected telephone interviews have been conducted with key individuals.

The central objectives of these conversations have been to identify what it is about Olin that is most responsible for the success we have experienced at this point, and what "big ideas" might exist for building on this success for the next five years and beyond. Given our resource limitations it will be necessary for us to attract additional financial support to undertake any significant new initiatives. The results of our planning process will be important in helping us identify and articulate the most important opportunities that will shape our future.

Phase one of the planning process will end in late May 2007. Phase two will take place over the summer, and will consist of reviewing the large amount of information gathered from the community in phase one and extracting a small number of coherent themes that may eventually be chosen to form the framework for the new strategic plan. These themes will be developed over the summer and discussed in a retreat with our Board of Trustees (and others) in August 2007.

The third and last phase of the planning process will take place between August and November 2007. In this last phase the final framework for the plan will be chosen and refined with feedback and help from the Olin community in more open meetings. The goal is to present the Board of Trustees with the final draft of the new strategic plan for their approval in November 2007.

What is so special about Olin College? For the reasons previously presented, the foundation for our planning must rest on a solid understanding of what it is about Olin that is most responsible for our current level of success. It is essential that we understand the role of our curriculum and its several distinctive features, the role of our student life program and its emphasis on personal development, the role of the exceptional people we have attracted and their values and motivations, the role of the location of the College and our neighboring academic partners, and the role of our resources—including our new facilities and tuition scholarships for all students made possible by the generous initial funding from the F.W. Olin Foundation.

In an attempt to provide a comprehensive yet simplified overview of what we believe may be the key features of the Olin College educational process, a flow chart showing the major steps in our educational model is presented in Figure 1 at the end of this paper. As shown in the figure, the process begins with the attraction of a broadly talented pool of candidates for admission. We suspect that this candidate pool contains a significant number of students with creative interests that would be unlikely to consider a more traditional engineering program.

An important aspect of our process is the selection of candidates for admission in the unique Candidates' Weekend experience. In this mandatory admission event, each candidate for admission is interviewed extensively in several independent situations in order to select those students best suited for our team-oriented, project-rich educational model.

Of course, a Founding Precept at Olin College is that every entering student is given an 8 semester full tuition scholarship that is based on merit. Very few other engineering schools have a similar policy on financial aid.

The academic program rests on a foundation of rigorous preparation in science, math, and engineering. In addition, our program contains a distinctive backbone extending throughout all four years that teaches the design process and principles of entrepreneurial thinking.

Furthermore, to prepare students for life and not just a career, each student is required to develop an understanding of the social, humanistic, and artistic dimensions of life.

As a small college focused on undergraduate education, Olin College not only provides a strong academic program, but also a high level of sensitivity to personal development of each individual student. The student Honor Code plays a major role in the personal development of each student, along with our emphasis on teamwork and the development of a “can do” attitude through independent research, entrepreneurial ventures housed in the *Foundry*, and *Passionate Pursuits* in which non-degree credit is earned for self-designed activities ranging from metallurgy to costume design to ice skating. Olin’s distinctive student life environment provides a powerful and healthy influence on the learning culture.

Although not shown in the figure, our partnerships with neighboring Babson College, Wellesley College, and Brandeis University provide a greatly enhanced academic and student life environment that is utilized extensively by Olin students.

Our educational process ends with a mandatory year-long engineering project experience (SCOPE) in which all students perform a significant engineering consulting task for a corporate client. The level of effort in this project is substantial, and client companies—who pay \$50,000 per project—have high expectations for performance.

The goal of this process is to produce graduates who are well prepared to solve complex problems—including those that involve science and engineering, and who are motivated to identify opportunities and take initiative to make a positive difference in the world. Our emphasis on learning how to learn is intended to help them establish a commitment to life-long learning, and our gift of a tuition scholarship together with our emphasis on philanthropy is intended to help motivate them to give back to society.

While Olin’s program has some features that are unusual, many of the basic ingredients exist in various forms on many other college campuses. Surely all good engineering colleges provide rigorous technical preparation. Design education in some form is required for accreditation in all engineering programs. An increasing number of engineering schools now include the opportunity to take elective courses in business and entrepreneurship. All accredited colleges require some exposure to the humanities, social sciences, and the arts.

So what, exactly, is it about Olin’s program that is so special—if anything? Is it our emphasis on entrepreneurial thinking? Is it our emphasis on the design process? Is it our process for selecting incoming students? Is it our merit-based tuition scholarships? Is it our small size and our sensitivity to personal development? Is it the clear focus on inspirational teaching among our faculty? Is it one, two, or three of these things alone—or is it the particular combination of them together—or the entire environment and learning culture?

If you were to attempt to duplicate the Olin learning experience on another campus, what are the bare essentials that would be necessary to achieve essentially the same results? What portions of the flow chart in Figure 1 may be eliminated without significant deterioration of the learning outcomes?

How can this be captured in a few words and simple concepts? Any member of our community who has tried to accurately articulate the special nature of our learning culture to someone who has never visited the campus has likely experienced a degree of frustration. We have found it difficult to capture the essence of the program in a simple concept or a few key words. Yet, this is exactly what is needed to crystallize our understanding of the most important aspects of our program.

The strategic planning committee has been asking members of the community to provide their perspectives on this question, and a wide range of answers have been obtained. There are many

different audiences (or clients) for the College, and each one has a different set of interests and priorities. Prospective students and parents have one set of interests. Faculty and staff have slightly different interests. Corporate sponsors and employers have yet another set of interests, as do graduate schools, Trustees, and neighboring academic institutions.

Some views from inside Olin. To explore different perceptions of what makes Olin special, the consultant asked probing questions about this issue of all members of the planning committee and also the Board of Trustees and several members of the President's Council. Some of the results of these conversations are presented here, beginning with a few quotes from members of the planning committee.

The context for these quotes is as follows. The consultant asked each member of the committee to respond in writing to the following question: *"I am a zillionaire, and I have determined that I am going to give a gift of, oh just to put things in round numbers, \$300 million. I have tentatively decided to give the whole sum to Olin, and I have definitely decided that if I give this amount, Olin will be required to double the size of the student body. I'd also like you to do this while maintaining the quality of the students and faculty. The one question I am still unclear on, however, is what makes Olin special. That is, **what truly differentiates Olin from other institutions?** Or put another way, why Olin? For this part of the experiment, what is your short answer to my question?"*

Some responses from committee members to this question:⁵

Response #1: *"Right now, I think the answer is Olin is attracting a unique student body. They are some of the most talented people of their generation and they are going to go on to great things. An investment in Olin is a high-leverage investment in our students."*

Response #2: *"What differentiates Olin is the ownership that we all have over the culture and running of the college. Everyone at the college has input on a number of aspects of Olin and can have an impact in meaningful ways. This means that everyone here really cares about everyone else and wants to see the place succeed. The caveat though is that doubling the size may decrease the amount of ownership we feel or dilute our impact in the place."*

Response #3: *"Olin has the unique position of providing an interdisciplinary environment to engineering education. Further, the education at Olin is more active than would be found at more traditional institutions. We feel that this mode of education is critical to improving the skills of our engineers in the future, and without growth of the student body, our impact on engineering education would be limited. Finally, our culture of innovation allows us to continually change and improve the curriculum based on this mission."*

Response #4: *"I believe we must guard against developing a sharp and narrow mission that we believe is completely unique and not addressed by other schools at this time. Strategically that leaves us incredibly vulnerable.*

"As you know from the SWOT conversations, it is the culture within Olin that everyone recognizes as unique. I think this may be the real uniqueness of the school, and one which no other program could duplicate. Our small size, focus only on undergraduate education, intense relationships between faculty and students, and emphasis on entrepreneurial thinking as well as design and innovation are at the core. ...

"At the heart of this is the realization (relatively recent for me) that the curriculum is not nearly as important to educational outcomes as the learning culture. This is not understood in the

⁵ The committee was asked to participate in an experiment in which a sequence of questions was asked in a written assignment. The committee took the assignment home and submitted answers over several days via e-mail to the consultant.

mainstream of academia, The widespread assumption is that if you develop a set of courses with titles and textbooks that are special, then the essence of what a student learns in your program is captured by this curriculum.

"In fact, I believe only a small fraction of what they learn is contained in the curriculum. Instead, it is the attitudes and behaviors, values and motivations that the students pick up from the community that is really distinctive and largely responsible for their long term success or failure.

....

"At Olin, our learning culture is perhaps the best in the US, and could never be duplicated by a large research university. That's what is most distinctive about Olin, in my opinion."

Response #5: "What makes Olin special? You can point to a lot of external things: no tuition, gender balance, hands-on curriculum, the Olin triangle, etc. But the glue that holds all these disparate elements together is the unique Olin community. There is something about all these elements, combined with the missionary zeal to create a new kind of engineer education, that has created a new kind of campus chemistry that is upending many of the assumptions about undergraduate engineering education: that it can't be fun and rigorous at the same time, that students can't be the focus of the institution, that tenure is a must. It's hard to describe succinctly, except to say it's all about the people: faculty, students AND staff, coming together with a common purpose."

It is clear that these internal perceptions are focused more on the holistic learning environment and the people than on any one element of the curriculum. No one aspect of the flow chart would seem to leap out from these quotes as largely responsible for our current level of success. In my opinion, these quotes from the committee also characterize the mainstream of opinion within the broad groups of faculty, staff, and students as expressed in the several open meetings held on campus in recent weeks.

Some views from off campus. A different perspective on what is special about Olin is provided by comments from members of the Board of Trustees and the President's Council. The consultant conducted telephone interviews with members of these groups and asked them to comment on what they thought differentiated Olin from other institutions. Some of the responses are presented below.

Response #1: "What Olin is doing is very compelling...Elsewhere, undergraduate engineering is very poor. [Most engineering schools] use the first two years as a filter and 50% of the incoming students drop out. Olin is doing a really good job at engaging and keeping the students. Also, Olin is dedicated to continuing innovation in engineering education and that's unusual. They're doing a fine job at this...how different than other places [...names of several other institutions deleted...]. Olin goes further than [...name of institution deleted...] in breaking down the silos between disciplines..."

Response #2: "The first [thing about Olin] is the entrepreneurial focus. Plus we're fishing with really good bait—the scholarship and it's a much more intimate school. Then we get students with the right brain activity as well as the left-brain genius, and they can communicate—do you know how unusual this is? They can tell you what they are doing without looking down at their shoes! And, they can work in teams. That means they will be more innovative engineers. Olin is producing great engineering leaders for America's future. We can influence other schools to adopt part or all of our methods, and it will have a positive impact, but the real impact is engineering leaders for America's future."

Response #3: "Olin is a college that can truly change not only how engineers are taught, but also how they work once they graduate and the changes they make within their corporate environments...We are the institution that is changing the way engineers and scientists are

trained so they can be the leaders in our economy and the leaders and innovators in companies across the country...That's what is so important about Olin...."

Response #4: *"The College has to serve some useful human need, starting with the U.S. In order to do that, we have to be a place that emphasizes quality and human relationships. Now, if entrepreneurship and capitalism are important to creating jobs and improving lives, then we have to have first-class engineering training combined with entrepreneurial education. That's what Olin does."*

Response #5: *"As of now, there are one or two engineering schools that say that they do what we do; there are one or two thinking about it; and one or two that are actually doing it or parts of it. But what we have created is a whole environment...an integrated approach."*

Response #6: *"Two things [differentiate Olin]. One aspect is that Olin has much more emphasis on teaching by faculty; education is the only mission, and the other is the unified mission on technically-based entrepreneurs...If you [a prospective student] know what to do [in terms of starting a company and the company you want to start], you can do it at ... [names of institutions deleted] ..., but that's not the main emphasis of those schools...If you want to be a technically-based entrepreneur, Olin's going to make it a lot easier for you than anywhere else."*

Response #7: *"Olin has a pervasive culture of innovation that they've been able to create and nurture at the undergraduate level. Other places innovate, but they have pockets of innovation and also pockets of resistance...The culture of innovation at Olin is alive, and nurturing it needs to be at the forefront of everyone's thinking...That's in our founding precepts [precept #3] and we need to keep that precept in the forefront of our thinking."*

Response #8: *"What's the 'it' for Olin; transform engineering (but note that we have the extreme right end of the talent bell curve) or create the entrepreneurial leaders of tomorrow? ... Olin has a particular model or approach to education that should be a model to all, but the question above still holds. We are going to need to make some hard choices... We should pursue the path of leadership and entrepreneurship for big, complicated, and complex problems ... Our biggest threat is that someone else starts with a blank sheet of paper and takes the entrepreneurial leadership position."*

When these external advocates were asked to explain concisely what it is about Olin that is compelling (**elevator pitch**), some of the responses were as follows:

Response #9: *"We desperately need engineering leadership to keep innovation alive in this country. When I look at China and India and Korea...they are graduating more engineers than we are and these people will work harder than we do...So we have to graduate not only really sound engineers, but not ones that [are content to] focus [only] on all the details, we need engineers who are capable of leadership of other engineers. And if we don't create some quantity of these kinds of engineers, then I worry for this country. That's where Olin comes in."*

Response #10: *"Olin meets a national need; we can produce strong leaders who are technologically able and entrepreneurial. And here's a small place that can select a terrific group of candidates, immediately immerses them in technological education with a very inspiring faculty; gives them exposure to entrepreneurship at Babson combined with great liberal arts and fabulous facilities, and then we let them incubate."*

Response #11: *"We train engineers who can innovate and start companies; Olin has the best vision on how this can be done."*

While the external observers seem to see business and entrepreneurship a bit more prominently, they also emphasize the importance of taking a leadership role in solving complex and important

problems with high risk, and maintaining a focus on innovation. These concepts are well aligned with the perceptions of internal observers.

The Olin educational process emphasizes both rigorous preparation in engineering and also the development of entrepreneurial thinking. These two concepts are deeply intertwined within the learning culture at Olin. As clearly expressed in the perceptions above, we are deliberately creating engineering graduates who are entrepreneurial thinkers, and we believe this is important for the nation.

In our discussions of the engineering and entrepreneurship dimensions to our educational approach, we have sometimes identified a tension around the issue of the relative importance of these two concepts. Some people feel that the balance between the proportion of our program devoted to entrepreneurship and the rest devoted to engineering and other topics is not right, and this can create barriers.

To explore this interface, the consultant led the committee in an exercise in which we each were asked to take only a minute, and write down what we think of as the definition of an entrepreneur. Then we were asked to do the same thing for an engineer. For the sake of brevity I won't include examples here, but the committee was impressed with the degree to which these definitions overlap and align with each other. To a significant degree, we concluded that there is a sense in which every true engineer must also be an entrepreneur to be successful.

What does it mean to inspire change in engineering education on a large scale? Quoting from Olin's Long Term Aspiration: *"It is our intent that, as we realize our mission, the educational and student life concepts and approaches we develop will inspire change at other respected engineering schools"*. One of the motivations for creating Olin College was to promote needed change in engineering education nationally. As a result, Olin is committed not only to innovation within its own educational program, but also to becoming an inspiration for change at other institutions.

Incorporating this distinctive aspect of Olin's mission into our strategic plan has presented a number of challenges. One of the challenges is to attempt to develop concepts and approaches that might be "portable" in the sense that other institutions, with very different scale and resources, may be able to take advantage of them. This principle has often motivated us to choose one alternative over another in our academic program in order to minimize the barriers to acceptance and adoption elsewhere. Another challenge is to identify which aspects of the academic program might provide the greatest potential for benefit elsewhere, and how to package and market them in a way that will have an impact. Ultimately, these decisions result in budgetary and human resource commitments.

However, to guide us in making decisions on how much effort to invest in this activity it would be helpful to first have a conversation about exactly what our goal is with this activity. Do we expect to create exact clones of Olin at other locations? Is this necessary to obtain the kind of enhancements to engineering education that we are attempting to produce? Or is it adequate to promote the adoption of some components of the flow chart and not others? In what sense should Olin set out to inspire needed change at other institutions? How can and should this be measured? These questions are not easy to answer, and would benefit from perspectives from outside the campus community.

How large should Olin eventually become? As the planning process matures, the committee will be required to develop goals and objectives for the next five years that build on the strengths of our program. We have been soliciting "big ideas" for several months now (see the white paper *Inventing the Future*, October 2006). Several of the big ideas that have been proposed would result in a net increase in the enrollment at Olin College.

Since most colleges and universities have financial models that are tuition driven, growth in enrollment is associated with an increase in revenue. As a result, enrollment growth is one of the first concepts to emerge when considering ways to generate new resources for program enhancement or campus development. However, Olin College's financial model is different. Due to our commitment to provide full tuition scholarships to all admitted students, enrollment growth results instead in a net decrease in revenue. So, the motivation for any growth in enrollment at Olin College cannot be to generate additional resources. The justifications for growth must be based on some other need, and they must be sufficiently compelling that new investors will be willing to add substantially to our endowment. To be revenue neutral, enrollment growth at Olin will require an additional \$1 – 2 million in endowment for each additional student.

It is clear that if Olin's principle impact is through the individual achievements of its alumni, then increasing the enrollment would be the principle means of increasing our impact. A larger enrollment, and the associated increase in number of faculty members, would allow the development of a more robust and perhaps sustainable community of scholars on campus. The addition of several more undergraduate degree programs would add breadth to the academic menu, and provide more options for students—who, at age 18, are not always certain of their ultimate career choice. While the student community at an enrollment of 300 appears to be healthy, growth to a larger enrollment would also present some opportunities for enhancement of the student life program.

The original vision for Olin College, proposed by the F.W. Olin Foundation, was to create a campus with an enrollment of 650 engineering majors. This would create a college nearly as large as Harvey Mudd College, except that most of the Olin students would be engineers, whereas the majority of students at Harvey Mudd are science and math majors.

However, as the enrollment grows, this would work against the close relationships that have developed on campus. At present, students are known on a first name basis by many faculty members throughout their four year program. At some point as enrollment grows, this is likely to change. In addition, the organization of the faculty into a single unit with no academic departments will also become a challenge after a certain number of faculty members have been added. The heavily interdisciplinary and team-based academic program may also encounter serious new challenges as the enrollment grows.

As a result, one of the most important questions we face for long range planning is the ultimate size of the enrollment. The consultant explored this issue with several members of the Board of Trustees and President's Council in recent telephone interviews. Some comments from these sources are presented below:

Response #1: *"Olin at its present size is inefficient and jumping up to 600 is really important. That would be great leverage [on assets already in place]."*

Response #2: *"We need to add more students. It's important so we can get the scale to add additional faculty in some very important areas. That allows us to gain diversity and focus, and it enriches the curriculum and the student body. Then we can graduate more students and make a bigger difference, and it also gives us economies of scale. How big? I guess 500-600."*

Response #3: *"The original plan was for 600 students. I think you could probably go to 600 if we had the money. Six hundred, I think, would still be small enough to preserve all the stuff that is key to what Olin is. We could be 450 or 600 but not bigger. I would try 450 first."*

Response #4: *"75 students per year is too small. Then we're too focused, too fragile. Six hundred is a better number."*

Response #5: *"We really need more students. At least 25 more per class, and then up to 600 total. That's the maximum."*

Response #6: *“A doubling would be good. But I wouldn’t go to 1,000. We would lose too much.”*

Response #7: *“I’d like to grow enrollment a little. Maybe 600, or 400 or 500, but without diluting quality. If we got to 600, that would be just about perfect.”*

Response #8: *“We, I’d put it as my 4th or 5th priority and then only up to 600 students.”*

This is an issue that needs to be discussed both internally and externally in order to facilitate the development of a useful strategic plan and associated campus master plan for facilities.

Summary and conclusions. This brief paper provides a progress report on status of the strategic planning process underway at Olin. It also frames several important questions that are central to the development of goals and strategies for the next five years. The meeting on May 7 will provide an opportunity to discuss these issues in more depth, and to gain a better understanding and consensus. In preparation for the meeting, I ask you to answer the following questions before the meeting starts, and come prepared to discuss these issues in depth. It would be most helpful if you wrote out brief answers to these questions and shared them with me.

1. What is so special about Olin College, and why?
2. How can this be captured in a few words and simple concepts?
3. What does it mean to inspire change in engineering education on a large scale?
4. What is the ideal size for Olin College, and why?

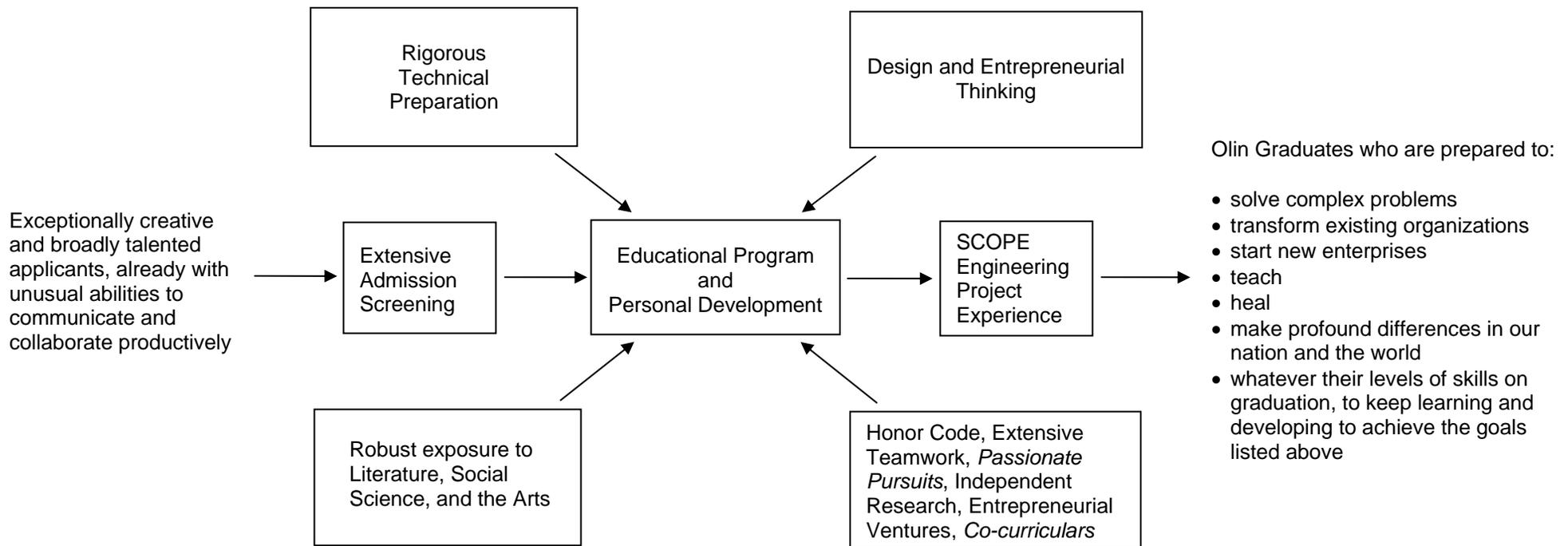


Figure 1. The Olin College Educational Process