

Inaugural Address

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Franklin W. Olin College of Engineering

Introductory Remarks

Good morning. What an incredible honor and privilege it is for me to stand before you this morning and represent the many talented and dedicated people that make up Olin College. Without question, it is the greatest privilege of my life to lead this exceptional group of people in the creation of an entirely new and perpetually innovative institution. Indeed, I am very fortunate and grateful to have been chosen for this task. I often feel as though God Himself must have opened several doors along the way in order for me to be standing here this morning.

My special thanks to the F.W. Olin Foundation for the vision, passion, and courage to found an entirely new institution dedicated to innovation in engineering education. Their support and unshakable commitment form the foundation that Olin College is built upon.

In addition, I want to thank President Frank Rhodes for his wonderful remarks. Like many leaders in higher education, I have long admired Dr. Rhodes and his exceptional wisdom. However, following him in this program presents a very difficult task for me!

I also want to thank the speakers from within Olin College and from Babson College, Wellesley College, and the Town of Needham, for their warm greetings and generous remarks. Also here this morning are several personal mentors and close friends from great distances that have always provided great support and encouragement, and I want to thank you for being here and for all your help and inspiration.

As we dedicate this entire new campus and these beautiful new facilities this morning, I am reminded that in spite of the importance of facilities - and they are very important - colleges are primarily about people. I couldn't be more proud of the student body, faculty, and staff that have already chosen to affiliate with Olin College, and of their intense efforts to build a campus, invent a new curriculum, develop an identity, and create a new culture - all in record time. In fact, it was on May 1, 2000 - almost exactly 3 years ago today - that several of us stood on this hillside and broke ground for the construction of this beautiful new campus. That was before any faculty members had been hired, and before any students had yet been recruited. At that point, Olin College was much more of an idea than a place. In three short years, just look around at what has been accomplished!

I want to ask all the faculty and staff to stand at this time and be recognized for their extraordinary efforts to literally breathe life into the concept of Olin College. I want to ask the students in our inaugural class to stand, too, because they have been essential partners in all aspects of inventing the College. Please join me in congratulating them on their important contributions! Thank you for bringing Olin College to life!

I have had many mentors along the way, but none more important than my very first teachers - my father and my mother. My mother taught me what is important in life, and my father taught me all I needed to know about leadership. In addition, my brother, Jeff - also an engineer - taught me by example the true value of combining engineering with entrepreneurship.

My wife of 31 years and my closest friend, Beth, has made it possible for me to devote most of my energy to Olin College through her quiet support and patient understanding. She and our two daughters, Kate and Julia, have played a significant role in the founding of Olin College. My mother-in-law, Betty Gregg, has also been very close to me and supportive for all the many years I have known her.

Expectations and Precepts

It isn't every day that a respected private foundation decides to spend several hundred million dollars to create an entirely new academic institution. Clearly, they could have given the money to many excellent schools with a long record of success. Instead, they chose to start over with a clean slate and form a new

institution. As you might suspect, this was a very thoughtful and deliberate decision, and it comes with some firm ideas and unusually high expectations. These unique and demanding expectations were articulated by the F.W. Olin Foundation in the Founding Precepts of the College. Along with some others, these precepts include providing a superb undergraduate education in engineering at little or no cost to all students, establishing a unique culture of innovation and continuous improvement, and cultivating an appreciation for entrepreneurship and philanthropy.

These expectations of the Olin Foundation provide a special challenge. Clearly, it will never be enough for Olin College to be like other colleges - even excellent ones. Instead, Olin College must aspire to push the envelope and try new ideas. Olin is expected to explore revolutionary and controversial ideas in education that would not be possible at more traditional institutions. Some of these ideas may fail, but others are likely to make important contributions to all of higher education. With these stratospheric expectations, the pressure is high. Few of us have ever worked as hard as we do at Olin - but the sense of purpose and adventure is also very strong here. Few of us would rather be anywhere else.

Engineers

That Olin College is dedicated to the education of engineers is of fundamental importance. Although it is sometimes called the "stealth" profession because it is not well understood by the public, engineering is of enormous importance to the nation. The list of technological inventions of the 20th century include many that have literally transformed life on the planet. These include plentiful clean drinking water, electrification, automobiles, aircraft, the telephone, radio and television, the digital computer, air conditioning and refrigeration, the interstate highway system, spacecraft and satellites, and numerous advances in biotechnology. The future of the U.S. economy may depend more on our technological innovation than on our natural resources or manufacturing capability.

As a result, engineering graduates continue to find more career opportunities than those of most other fields. Starting salaries for engineers are higher than those for almost any other undergraduate major - even in difficult times. Furthermore, engineering graduates are also well prepared for a career in many non-technical professions, including medicine, law, business, and others.

Scholarships

In spite of the importance of engineering to the nation, the number of high school graduates prepared to enter the field has declined substantially in recent years. As a result, the number of engineering graduates from U.S. colleges and universities has also declined in the last decade. Many companies now fill their growing needs for engineering talent by hiring graduates from foreign countries. Meanwhile, other countries continue to outpace the U.S. in math and science educational achievement in K-12, and the gap appears to be growing. Furthermore, the prevailing culture in the U.S. appears to discourage student interest in science and technology, and instead encourages interest in entertainment and sports. Students expressing an interest in science and technology are often considered "uncool" in high school, while those who aspire to a career in Hollywood or in the NBA are generally more popular and socially respected.

It is in this context that Olin College's commitment to provide full 4-year merit scholarships should be understood. By providing these generous scholarships for talented students to pursue an engineering career, Olin College is providing a reward for student academic achievement and validation that science and technology are important. We believe that by rewarding and celebrating excellence in important things like the study of science and math, we are likely to encourage more of it.

Undergraduate Focus

Olin College is also rare among engineering schools for its decision to focus on undergraduate education. The large majority of engineering schools are associated with large universities that feature strong graduate education and research programs. This deliberate decision underscores our commitment to build an intensely student-centered institution that is just as concerned about the social and emotional development as the academic development of our students. Our highest calling at Olin is not to prepare our graduates for a career rather, it is to prepare our graduates for life. One of my favorite quotes is taken from the Proceedings of the First Annual Meeting of the Association of American Colleges in January 1915:

"Your men and women who are teaching are not fundamentally teachers of subjects; they are fundamentally teachers of persons. And the great passion of the teacher should not be the passion of the language that he teaches, or the literature that he teaches, but the passion of the life that he is shaping with the language and the literature [...]."

Innovation and Continuous Improvement

When I first met Mr. Milas in 1998 to discuss his vision for Olin College, one feature stood out above all others. In fact, the more I thought about it after our meeting, the more convinced I was that this aspect of his vision - more than any other - had the potential to fuel innovation that could have broad impact throughout higher education. That feature is a genuine commitment to a new culture of innovation and continuous improvement.

In my 25+ years as a faculty member at four institutions in three geographic locations, I have come to appreciate the special contribution that higher education makes to our society. The pursuit of truth no matter where it leads, aided by academic freedom and the responsibility to share new knowledge openly and freely, has enormous power for good. The very survival of our democratic society depends on an educated and thoughtful population. Our system of higher education has done a better job of providing this foundation of knowledge and critical thinking than any other throughout history.

However, our challenge at Olin College is to apply these principles of free inquiry and critical thinking to the very organization and operation of the college itself in an attempt to explore potential opportunities for improvement. While the traditions of higher education have generally served us well, only through questioning and experimentation are we likely to determine whether further improvements are possible. The scope of our efforts and seriousness with which we are undertaking this challenge are illustrated by our decision to form multidisciplinary faculty groups rather than discipline-based academic departments, and to use renewable faculty contracts rather than a traditional tenure system. We are perhaps the only undergraduate college in America with a Vice President for Innovation and Research to lead our efforts in innovation, assessment, and continuous improvement. Our strategic plan, Invention 2000, commits us to an ambitious effort to rethink all aspects of college organization and function, and to investigate best practices at other institutions before making long-term decisions.

Innovation and continuous improvement require certain cultural attitudes and commitments. First, an implicit humility is required to embrace the notion that improvement is always possible, and that we can always learn from others outside our community. In addition, continuous improvement is only possible if continuous assessment is employed. We must be willing to expose ourselves to review and measurement, and to take the time to learn from mistakes. Finally, and perhaps most importantly, continuous improvement requires openness to change. At Olin, one of our five personal core values is openness to change. We have already found that it is the most challenging of our values. We have no blue print for success in this area. But we are committed to sustain our efforts and learn from our mistakes until we develop an approach that promises to succeed.

A commitment to innovation and change of this scope and magnitude is unusual, potentially controversial, but I believe it is exactly what our Founding Precepts require. To lead in changing fundamental ideas is notoriously difficult and sometimes hazardous. Apparently it has always been so. Almost 500 years ago Niccolò Machiavelli, in 1513 (*The Prince*), wrote:

"...And it ought to be remembered that there is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things. Because the innovator has for enemies all those who have done well under the old conditions, and lukewarm defenders in those who may do well under the new. This coolness arises partly from fear of the opponents, who have the laws on their side, and partly from the incredulity of men, who do not readily believe in new things until they have had a long experience of them..."

Curriculum

Another mission of Olin College is to develop a curriculum that addresses all of the major concerns expressed in recent years by the National Science Foundation and business leaders. These concerns include improving the communication and teamwork skills of graduates, as well as increasing the exposure to design

and the basic principles of business. This assumes that the traditional rigorous foundation in the engineering sciences and mathematics will remain strong.

The emerging curriculum at Olin emphasizes rigorous preparation in engineering and design as its centerpiece, but also includes a strong emphasis on entrepreneurial thinking and on creativity, innovation, and the arts. This combination is unusual for an engineering school. Even more distinctive about the Olin curriculum is its extensive use of active and experiential learning, including team and project work, independent study, and research.

Science & Engineering Core

It is our intention that the curriculum at Olin College will provide a foundation in science and engineering which is as rigorous as any of the very best engineering programs in the nation. An engineering degree from Olin College will prepare graduates to join the engineering profession and directly participate in the invention and development of the new technologies that will drive our economy and improve living conditions throughout the world.

Entrepreneurship & Philanthropy

In addition, Olin will provide graduates with the knowledge they will need to become leaders in the process of commercialization of technology, through enhanced educational opportunities at our distinguished neighbor, Babson College. We believe entrepreneurial thinking extends well beyond the creation of wealth to the development of self-sufficient individuals with the initiative and resourcefulness to build healthy communities. Among Olin graduates, we expect that success will not be measured primarily by financial accumulations, but rather by contributions to others. Philanthropy is a strong component of our vision for an Olin education.

Olin College itself was established through an act of great philanthropy. We hope our graduates will appreciate the importance of the opportunity they have received, and that they will eventually work to provide opportunities for those around them, even as Franklin Olin did. We intend to cultivate an appreciation for the wonderful legacy of philanthropy in America, and more generally for our democratic society and free enterprise.

Communication & Core Values

Several senior engineers with large firms have reported to me that many of their young engineers reach an early plateau in their careers. Surprisingly, they report that this is rarely because of limitations in their technical preparation or ability, but rather because of their difficulties in working with people. In fact, for decades corporate representatives have been reporting to the National Science Foundation and others that engineers need to become more effective at communication. I don't believe they are talking primarily about English grammar or writing skills, although this may be partly involved. I believe they are talking more about conversations than formal writing, the ability to establish lasting relationships with others, and to work well on diverse teams. To address this need at its root, we have established a strong set of core values, and a comprehensive honor code. Teamwork begins with trust and relationship building. It matters not only what you achieve, but how you achieve it at Olin. In addition, we expect a high level of effectiveness in all aspects of communication, including listening, writing speaking, and graphic communication - in both our faculty and our student body. Selection for verbal ability is nearly as important as quantitative ability at Olin.

Creativity

Engineering is fundamentally a creative enterprise. While scientists focusing on answering "why" as they observe the world, engineers focus on asking "why not" as they seek to change it. Design is at the heart of any real engineering endeavor. At Olin College we plan to address the imagination as much as the intellect, and deliberately address the need to envision. We think Albert Einstein was right when he said that imagination is more important than knowledge. If you cannot imagine it, you are unlikely to ever build it. Visioning involves many things - including imagination, 3-dimensional visual thinking, vividly detailed word descriptions, and a keen awareness of the interface with reality - the laws of nature, budgets and schedules, environmental, social, and political constraints. We aim to prepare graduates to excel at articulating the art

of the possible, and to thoroughly enjoy themselves while doing it. As a result, you may be surprised at the level of emphasis on artistic expression among our students.

Humanities & Social Sciences

In addition, our students are encouraged to pursue those interests that help them relate technology and its impact to the world around them, and to provide a balanced and well-rounded personal development. Serious study of languages, music, art, dance, political science, history, natural sciences and mathematics, and many other subjects is strongly encouraged here. In this curricular area, our partnership with another distinguished neighbor, Wellesley College, is enormously valuable to us. We intend to build similar strong partnerships with Brandeis University and other neighboring institutions in the future.

There is much more to our current thinking on the curriculum, of course, but our over-arching commitment to continuous improvement will insure that we are never really finished inventing it. We expect to continuously seek feedback and to revise both the content and the methods to insure progress.

Conclusion

In conclusion, the opportunity to create a new academic institution from a clean slate is extremely rare. It may occur much less frequently than once in a lifetime. All of us associated with the creation of Olin College share a great deal of pride in the wonderful start to the College that we celebrate today. We also share an enormous privilege, and a great responsibility for the future. Few opportunities in life offer as much potential for touching so many lives in important ways - for generations to come. What we do here in the next few years will clearly impact the direction of Olin College for many decades. If we do our job well, it could have an impact well beyond our borders.

It was Margaret Mead, the distinguished anthropologist, who said:

"Never doubt that a small group of thoughtful committed people can change the world. Indeed, it is the only thing that ever has."

Thank you once again to the Olin Foundation for the great honor of leading the effort to implement your vision, to my colleagues at Olin College for your confidence and trust, and to my family, mentors, and friends for your support and encouragement. Working together I am absolutely certain we will make a difference in engineering education.