American Education in the 21st century – Liberal Arts in a Global Context

It is a great honor to be here today. We are all, I think, very excited about this 21st century. Like no other time in history, the whole world is open to scientific discovery, to the exchange of cultures and peoples; goods and services, and to the exchange of communication. Education has a special opportunity at this time. In an age characterized by rapid expansion of knowledge, we must do all we can to create human capital—to train men and women—and to produce knowledge itself. In a world that is now small and easy to navigate, we must educate men and women to think in new ways, to be citizens of the world as well as of their nations, to understand the philosophy and arts of other countries, to respect the politics and cultures of different peoples, to be both critical and creative thinkers and doers.

We must all take seriously the role of education as the engine and protector of the future. Alfred North Whitehead, famous British and American philosopher, defined the task of higher education as “the creation of the future.” We have a common task to ensure knowledge for the future, a common task to make sure the future is secured for the pleasure and productivity of knowledge itself. Within China and the US are many different voices in the conversation about education and the future. As I learn about your institution, what I hope to do today is to share with you the contribution our school is making in achieving this goal.

My attention will be focused almost exclusively on the liberal arts model for undergraduate education in America. I am very proud to serve as the president of Colgate University, a liberal arts college that is one of the finest in the U.S. I will talk a great deal
today about Colgate as an illustration of the heart of education in the US. As you may
know, a residential liberal arts education provides a broad education across the
disciplines, focusing on critical and creative thinking and developing the individual for
productive life and citizenship in the broader community. My presentation will proceed
in three steps: 1.) an explanation of residential liberal arts colleges and an overview of
Colgate University as a model of this type of undergraduate education in the US; 2.) an
identification of three challenges to education in general and to residential arts colleges in
the US in particular; and 3.) an overview of how Colgate, as a representative of
residential liberal arts colleges, is extending its academic and residential programs in
order to contribute to global education and to produce graduates who will be successful
leaders in the 21st century.

I.) An explanation of residential liberal arts colleges and an overview of Colgate
University as a model of this type of undergraduate education in the US. Residential
liberal arts colleges are the purest example of the ideal of undergraduate education in the
west. Liberal education, from its earliest days, was about developing men (and later
women) to be both wise and good. Historically, in America, liberal arts colleges had three
basic goals, goals which continue today:

1. Educating men and women for service and leadership in the professions: While
apprenticeships and graduate schools provide the specific practical skills required by a
profession, a liberal arts undergraduate program provides the critical thinking and
creative imagination to become a leader in any field a young man or woman chooses. A
well-rounded liberal arts education prepares the individual to learn how to learn throughout life. In relation to large public and private colleges and universities, liberal arts colleges, on a per capita basis, “over perform” in producing students who attend graduate schools and who become leaders in their professions and communities.

2. Shaping citizens for public and civic service: Historically a liberal arts education was understood as the way to prepare men and women to fulfill the obligation they had to their communities and country. Today, the living and learning environment of residential liberal arts colleges prepares students to be leaders in civic society and to master the necessary skills to be entrepreneurs and leaders in the professions and the arts. Education shapes character in the context of community, helping to make persons moral, creative and social and capable of utilizing differences – individual and cultural—to cultivate productive organizations and communities.

3. Preparing individuals to live a well lived life in community: A central aspiration of the liberal arts is to ensure future leaders will be capable of understanding and appreciating cultural arts in all shapes and forms. Not only do residential liberal art colleges emphasize the appreciation of culture for personal fulfillment, but this form of education also wagers that someone formed in the arts, sciences, letters and later, the social sciences, will bring more intellectual resources to the tasks of the professions and the obligations of citizenship than some one who has received a narrow technical training.
Liberal arts focuses attention on how to think and how to live: with others, in the world, in the future. Intimate faculty-student interaction occurs in small classes, in programs outside classes that range from academic discussions, to arts programs, to civic service and social experiences. A broad and critical training in a lively and diverse community are the two essential components of liberal arts education. It is an education that supports and challenges the student to build a better community, to be an intellectual risk taker, and to appreciate the variety of cultural and individual differences that contribute to the organic wholeness of any community.

Today, there are 4,140 accredited institutions of higher education in America enrolling 16.9 million students. As you see in this slide, the vast majority of students are enrolled in public two-year or four-year institutions. A smaller percentage is in private not-for-profit four-year colleges. Liberal education, especially in its purest form, is expensive and labor intensive.

And yet, when most Americans think about undergraduate education, the ideal is the liberal arts in some version whether it be at Yale or the University of Texas or Western Michigan State or Emporia, Kansas. Besides supporting the ideals of residential liberal arts colleges, Americans appreciate the success of liberal arts alumni for quite consistently across all professional fields, these alumni are some of the most successful in America. Alumni of these small residential colleges account for 3-4% of all undergraduate degrees granted in the U.S. A 1998 study (by the Annapolis Group?) indicated that this small number of alumni accounted for:

- 8 percent of Forbes magazine’s listing of the nation’s wealthiest CEOs
- 8 percent of former Peace Corps volunteers
- 19 percent of U.S. presidents
23 percent of Pulitzer Prize winners in drama, 19 percent of the winners in history, 18 percent in poetry, 8 percent in biography, and 6 percent in fiction from 1960-1988
9 percent of all Fulbright scholarship recipients and 24 percent of all Mellon fellowships in the humanities
20 percent of Phi Beta Kappa inductions made between 1995 and 1997

In the sciences, liberal arts alumni contribute a great deal. Seventeen percent of all PhDs have been trained in liberal arts colleges. Many of these scientists become distinguished leaders. Nineteen percent of the scientists elected to the National Academy of Sciences were educated in liberal arts institutions.

Why? Why do liberal arts colleges produce so many leaders, so many innovators, so many successful men and women? Because the students receive a 24/7 education both in the sense that all educational moments inside and outside the classroom are utilized and because the breadth of the education cuts across disciplines providing a kind of “cross training” for students and teaching them to think in new ways. A liberal arts education focuses on how to think and learn throughout one’s life and how to be a risk taker, a community builder, and someone who will make a difference in his profession, in her community.

Alexander W. Astin, one of America’s most distinguished experts in higher education, cites the following reasons for the impact of education of selective liberal arts colleges:

- Frequent student-faculty interaction
- Frequent student-student interaction
- Generous expenditures on student services
- A strong faculty emphasis on diversity
- Frequent use of interdisciplinary and humanities courses (especially history and foreign languages)
- Frequent use of courses that emphasize writing
- Frequent use of narrative evaluations
- *Infrequent* use of multiple-choice exams
• Frequent involvement of students in independent research
• Frequent involvement of students in faculty research

The residential liberal arts education remains the ideal model for undergraduate education in America. The Association of Colleges and Universities announced a national campaign called LEAP – Liberal Education and America’s Promise—to promote the use of the liberal arts model in all forms of undergraduate education. The conclusion of one of the nation’s largest associations of colleges and universities is that the liberal arts’ emphasis on critical thinking, civic responsibility, and broad-based learning is the best approach to preparing students and America to address the dizzying pace, incredible excitement and global context of the 21st century.

Colgate University is one of the leaders among small schools and takes its role as a model for undergraduate education quite seriously. Let me share with you a few facts about Colgate– it is considered to be one of the most beautiful colleges in America. It is in rural New York state, 4.5 hours from New York City, Toronto, Canada and Boston, Massachusetts. The rural location provides students with an “absence of distraction” allowing them to be totally engaged in education, residential programs, athletics, and other activities.

Colgate has 2750 students with 240 faculty members. Although we draw our students from around the world, only 5% come from outside of the United States. Please note that in this slide I have provided names of students from China who have recently attended Colgate:

I am especially proud of the excellence of Yibing Cui (“eebing kwee) and Wei Ren (“way ren”). They received Colgate’s highest academic achievement graduating first, valedictorian, and second, salutatorian, in their classes. I hope more Chinese students will
attend our university for their undergraduate education and I hope Colgate can send more and more of our students to learn in China!

Colgate is extremely competitive, with about 8000 applications for a class of 730 students. Our tuition and fees are very expensive: it costs $43,000 per year. But we are also very committed to making a Colgate education available to the most talented students in the US and the world, and so between 40 and 45% of our students receive scholarships from Colgate to help meet these costs. As a private school that does not receive government money (we do receive a small amount of grants and students are eligible for some loans) we depend upon our wonderful alumni to support the school. Alumni donate millions of dollars to Colgate each year, much of which is placed into Colgate’s endowment, an investment fund which is managed wisely by our Board of Trustees. 21% of our annual operating budget comes from our endowment. This means that even those students who pay tuition do not pay the full cost of the education they receive.

As a liberal arts college, Colgate offers both a general education and many specialties. The general education is composed of two parts: the Core and the distribution requirement. The Core curriculum requires students to think across the boundaries of the disciplines and confront historical and modern questions in western and global contexts. In a day where interdisciplinary knowledge is so important, the Core introduces students to interdisciplinary knowledge from the beginning of their careers. In addition, students the distribution requirement by taking two courses in each of the three basic academic divisions: Natural Sciences and Mathematics; Humanities, and Social Sciences. Students
also develop an area of concentration by completing eight to ten courses in a particular subject. We have 51 such concentrations at Colgate.

Faculty members at Colgate are expected to excel at teaching and research. We hire faculty members from the very best universities in the United States and, increasingly, the world. Our faculty members teach 5 courses each year and most courses have fewer than twenty students. Our standards for teaching are extremely rigorous. “Teaching students to think,” members of Colgate’s faculty wrote more than 160 years ago, is “the main purpose of education.” Our faculty members are also required to do research and, increasingly, our researchers are known around the world for their scholarship.

- Jeff Buboltz is Colgate’s first biophysicist, bringing together the disciplines of biology, physics and chemistry in this emerging field

- Takao Kato is a internationally-renowned economist with interests in labor and productivity, and has studied corporate governance and executive compensation in Japan, Korea, and China

- Geographer Ellen Kraly is a scholar of international migration, population and the environment, and population and immigration policy.

- Biologist Frank Frey has been attracting national headlines for his work on pigments in plant leaves as a natural defense – work he believes may one day inform cancer research.
In addition to their academic pursuits, our students are very engaged in residential programs. I will address this part of our residential liberal arts program later. While for students this aspect is fun and interesting, these clubs, athletic teams, and living environments teach students the skills of communication and the responsibilities of leading organizations and living in a community, and contribute to the students’ creativity, discipline, and social skills. A very important component of the residential liberal arts experience is that students live together. We have different types of housing on campus, all functioning to help students learn to live and work with others. We also want students to enjoy social experiences, since getting along with people can be key to a successful, productive and responsible life! Participation in athletics helps young people learn to take care of themselves physically, mentally and emotionally, and learn the fundamental values of team work, discipline, and performance.

As I have already mentioned, Americans respect residential liberal arts colleges as the model of undergraduate educate not only because they represent a long tradition but because their alumni are successful in all sorts of endeavors. Colgate, like other liberal arts college “over performs” in its production of alumni who excel in a wide variety of fields! Let me show just a few examples:

- Gerry Fischbach ’60, former executive vice president for health and biomedical sciences and dean of the faculty of medicine at Columbia, is a leading expert on deep brain stimulation and its impact on the treatment of Parkinson’s disease.
- Francesca Zambello ’78 is an internationally recognized director of opera and theater who has won three Olivier Awards from the London Society of Theaters and the Evening Standard Award for Best Musical.

- Gloria Borger ’74 is one of America’s leading political commentators, writing columns for *U.S. News & World Report* and serving as national political correspondent for CBS News.

- Larry Bossidy ’57 is a preeminent figure in American business. Former CEO of Honeywell, Bossidy spent 34 years at General Electric and now serves on the boards of directors of several major corporations and is a best-selling author of books on business strategy.

- Dan Benton ’80 is chairman and chief executive officer of Andor Capital Management, one of the largest hedge fund advisors in the world.

- Robert H.N. Ho ’56. In the 1990’s Robert Ho helped Colgate take a major step forward in advancing the study of China and the region. He funded a professorship that now supports two members of the faculty and he created a fund to provide opportunities for Colgate students to travel to China for study. On Colgate’s campus he supported the renovation of a building that is now home to a Chinese Studies Center. The Center has promoted many educational events and activities and provided the climate so that an active student group, the China
Club, could be formed. He has previously provided support for the Robert Hung-Ngai Ho Endowed Chair in Asian Studies, the Robert Hung-Ngai Ho Chinese Studies Center, the Robert Hung-Ngai Ho Lecture Room and Colgate’s China Studies Group, a semester-long, faculty-led experience in Hong Kong, in Taiwan and at Beijing University, the premier higher education institution in China. He was also lead donor to the "eNRGy" Fund that generated $4 million in honor of Neil Grabois when he ended his tenure as Colgate's 13th president.

Colgate, like other liberal arts colleges is devoted to making sure each student has a foundation for leadership and the ability to live a life of innovation, community, and appreciation of culture. Learning how to learn and live is the most important foundation of all. Simply put, Colgate and liberal arts colleges educate by involving students intensely in learning, building, creating, and leading. To quote Benjamin Franklin, “You tell me, I forget; you teach me, I remember; you involve me, I learn.”

II. An identification of three challenges to education in general and to residential arts colleges in the US in particular.

Liberal arts colleges, it could be said, are idyllic: great faculty, great students, and intense interactions. Resources are fully dedicated to undergraduates. Attentive faculty and staff support and challenge students to learn breadth and depth, to master communication skills, to learn to build organizations and communities, to master civic duty, economics and team building. Athletics trains the body and the character; the arts
expand the imagination and aesthetic appreciation. A liberal arts college is an ideal way
to form well rounded, highly entrepreneurial individuals!

But can it survive? Is it a relic of the past or can it be reimagined to bring its
distinct contributions to global education in the future? What are the challenges and
changes liberal arts colleges must face? What can they contribute to our global
conversation on education? I want to suggest three challenges that must be met by all
forms of education, and certainly by the liberal arts.

First, science and technology present wonderful challenges to all of us involved in
education. The rate of technological change doubles every decade, according to some
experts. We are now experiencing an acceleration of acceleration. If the acceleration
continues, the 21st century will experience technological change one thousands times
more than that seen in the 20th century. Science is now multidisciplinary: the convergence
of technologies expands the frontiers of discovery at the edges of what were once very
well-delineated disciplines. The changing frontier of science is not surprising to you! In
this exciting century, with its phenomenal rate of change, transfer of information and new
horizons, all of us need to produce scientists who are thinkers and doers who can lead the
way with entrepreneurial quality of mind, responsibility of values, and robust abilities to
develop teams of international scientists.

Many in the US are committed to producing more scientists who fit just that
description. Between 25 and 30 percent of US students enter college intending to major
in science and engineering, but less than half complete a science degree within five years.
My information tells me that 59% of students in China receive undergraduate degrees in
the sciences; 32% of US undergraduates receive science degree and engineering degrees.
Science and technology, rapidly expanding, require us to produce scientists who work in an interdisciplinary, integrative global context. Scientists, like all other professionals, will need to excel in communication in the global environment. We need to produce scientists who continue to learn how to learn in an environment of intense creativity and entrepreneurship.

The second challenge for education is globalization – this is a big buzz word in US education right now! Having spent many weeks on the best seller list, Tom Friedman’s book The World is Flat is opening American’s eyes not only to the interconnections pulsating around the world, but also to the rapid transformation of our economic, communication, business, bureaucratic and cultural structures. Globalization is the interweaving of markets, technology, and information and telecommunications systems into flexible, open networks. Globalization requires us to educate all students about the world. It also requires us to educate persons to be entrepreneurs, critical and creative thinkers, who can build teams to address cross-cutting and global problems and opportunities. As Friedman notes: “On such a flat earth, the most important attribute you can have is a creative imagination—the ability to be the first on your block to figure out how all these enabling tools (technology) can be put together in new and exciting ways to create products, communities, opportunities, and profits.”

The third challenge for education is to exploit the possibilities provided by immigration, migration and glocalization. People are moving from rural areas to cities and across national boundaries. By the year 2050, Americans of European descent will be in a minority in the U.S. In Brussels, 50% of the babies born are Muslim. In Germany, the death rate exceeds the birth rate to the extent that technicians from India must be
flown in just to sustain the technical infrastructure. When you add migration and immigration together with globalization, you can understand that the third challenge in education is to prepare persons for “Glocalization,” a term introduced by Tom Friedman to identify how easily a culture “absorbs foreign ideas and best practices and melds those with its own traditions.” (325) The 21st century will require holistic thinkers. We need persons who can build global communities, who can work across boundaries: intellectual and disciplinary, but also cultural, political, economic and governmental. Global communicators and global community builders will be needed in both local and international contexts.

III. An overview of how Colgate, as a representative of residential liberal arts colleges, is extending its academic and residential programs in order to contribute to global education and to produce graduates who will be successful leaders in the 21st century.

In recent years Colgate -- and most other liberal arts colleges—have studied very carefully these three challenges. We have taken seriously the impact of science and the need to prepare students for globalization and glocalization. We have listened to experts, including our own alumni (play video or quote Mr. Ho). We understand our responsibility, our distinct ability to respond, as part of global education. Our fundamental approach of educating undergraduates to think critically and creatively, to learn how to be community builders and risk takers, to learn how to learn throughout life and to engage actively with a profession, the community and the world, has much to offer. We, like many US business leaders, educators, and researchers believe in the
poignant relevance of liberal arts education to the needs I have identified for the 21st century. David Kearns, former CEO of Xerox, notes “We are reminded that the real challenge of today’s economy in not in making things but in producing creative ideas. Today, the race goes not just to the swift, but to the inventive, the resourceful, and the curious. And that is what a liberal education is about.”

But we need to extend our liberal arts education in at least three fundamental ways to meet the challenges of the 21st century: 1.) we need to expand our work in educating scientists, with a special emphasis on integrative sciences. 2.) we need to address globalization by making sure our students experience the well rounded liberal arts college in a global context, and 3.) we need to extend the importance of our residential programs to make sure students learn the life skills of communications, community and organization building in the 21st century fashion of working across boundaries and of being holistic thinkers and doers. Let me identify how Colgate is trying to extend its education in this way and contribute to the global conversation on education.

First of all, developing scientists who are truly integrative scientists but also know the breadth from being cross trained in other disciplines. Recall that all of our scientists go through our rigorous core curriculum and general distribution requirements. Thomas Cech, president of Howard Hughes Medical Institute, has noted that cross training, along with faculty contact and a nurturing environment allows liberal arts educated scientists to outperform others. Cech has said “Just as mathematics is considered to be good exercise for the brain even for those who will never use calculus in the future, so the study of great books, history, languages, music, and many other non-science fields is likely to hone a scientist’s ability to perceive and interpret the natural world.”
It is in this broad and deep background for our scientists, that we are especially
ercited about the new Robert H.N. Ho ’56 Interdisciplinary Science Center. The Ho
Science Center, at 120,000 square feet, will hold 40 research labs, 45 faculty offices, 13
teaching labs, 7 classrooms, a large auditorium, a large lecture hall/second auditorium, a
visualization lab, a museum, and a teaching/research greenhouse. Offices and laboratories
from various departments will be distributed throughout the building to support
integrative, interdisciplinary science. The building will also include a variety of common
spaces, including a spacious atrium and numerous study alcoves, as well as shared
classrooms, configurable laboratories, and visitor offices.

This building will also anchor Colgate’s undergraduate research program which is
especially strong in the sciences. In this program, students work closely with faculty
members to produce professional level research. Undergraduate research epitomizes the
close faculty-student interaction that characterizes Colgate’s liberal arts education and
promotes the kind of curiosity and critical thinking skills needed in the 21st century.

- Geology Professor Karen Harpp frequently takes students to the Galapagos to
  study volcanic eruptions

- Professor of Biology Nancy Pruitt leads Colgate’s semester-long study program at
  the National Institutes of Health in Bethesda, Md. – the only such program
  offered by an undergraduate institution.

- Psychology Professor Spencer Kelly works closely with students in his study of
  the ways in which hand gestures influence language acquisition.
- Professor of Biology and Director of Environmental Studies Randy Fuller is one of the leads on Colgate’s largest ever research grant, nearly $1 million from the NSF to study the impact of acid rain on the Adirondack Mountains.

Second, the challenge of producing graduates who can be innovators and leaders in an age of globalization will require changed methodologies, new approaches and systems, new methods and perspectives. Colgate’s basic educational methodology and emphasis on communication skills can contribute to the flourishing of globalization. But we are now teaching critical and creative thinking and communication skills in the context of engaging the world. Almost all of our students – 77% of them - study off campus and abroad. We sponsor 24 off campus study programs to places such as Beijing, Woolongong, Australia, Madrid and the Dominican Republic. In addition there are over 22 extended study programs, usually a three week trip led by a faculty member, to places all around the world. These programs are distinctive since we send our own faculty members with the students to teach, mentor and help the students explore. We have become a leader in the US for these programs, ranking second nationally among undergraduate colleges for the percentage of students studying abroad. We are committed to making sure our students understand that the world is the context of their education; we are very committed to making sure our students take seriously their obligation to the world as well as to their countries and communities.

Thanks to Mr. Ho, Colgate has developed an expertise in China and Chinese studies. We have also developed expertise in Russia, Germany, Spain, and Italy, the Middle East and Islam, Asia, East Asian Languages, Latin America, Africa, and of
course, Europe and Eastern Europe. Our students learn about local cultures and global economics, about languages and arts, about people and politics. Their liberal arts education is framed now through studying at Colgate and around the world: globalization.

Finally migration, immigration and, glocalization are addressed by us through educating global communicators and community builders who are holistic thinkers and doers. As I have already mentioned, residential liberal arts colleges offer not only excellence in academics in a setting of close relationships between faculty and students but also in a variety of residential programs. Recently we put a new four year “Vision for Residential Education” program in place. The programs are based on teaching students the skills of public work (working with others to create things with lasting public value) and entrepreneurship. We have worked to create a campus where students think of themselves as innovators, problems solvers and creators. During the students’ first year at Colgate, we make sure they know basic “life and civic skills” – conflict resolution, time management, and basic information about finance and markets. During their second year, we make sure students learn all the things that support civic society: how to work and socialize together, how to be educated about social and civic issues, how to engage in debate and dialogue. During their third and fourth years, students live in different communities of their choice; each community adopts a strategic plan, including some form of civic engagement beyond Colgate in local schools or social service agencies, and all the student communities work together to enrich the common good through arts, debate, athletics, academic programs and social events. Throughout this four year program we emphasize leadership and the communication skills needed for our
global/glocal context. The students enjoy themselves, but while they are having a good
time and are fully engaged, they also learn the skills needed for the 21st century.

**Conclusion:**

Colgate is continuing our tradition by addressing the challenges and opportunities
of the 21st century. Through direct work with faculty and students in the sciences and
technology, by an expanded approach in off campus international study programs, and by
a continued focus on developing the individual student in community, we will contribute
to the global conversation on education. We are small, of course, but we will continue to
help model an undergraduate education that specializes in educating entrepreneurs,
innovative persons who know how to lead organizations and teams, and holistic thinkers
and doers who can live and lead in the 21st century.

It is a pleasure and an honor to learn about your wonderful university. I hope I
have been able to share with you a bit about our small institution. All of us in education
must join together in this exciting frontier where science, globalization and glocalization
join.