“Liberal Arts: The Higgs Boson of Higher Education”
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James E. McLeod Memorial Lecture on Higher Education
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Thank you, Gerald (Professor Early)...

First, I must say that it is great to be back at Wash U. Being on campus has brought back many fond memories of my days here as a graduate student. It is wonderful to see some of my old friends and colleagues and to meet some new friends with whom I can now share the special bond I have with this special institution.

I must also say that I am deeply honored to have been asked to deliver the inaugural address for the James E. McLeod Memorial Lecture on Higher Education. Jim was a friend, a fellow alumnus of Morehouse College, and a person I admired greatly for his dedication to the liberal arts. Jim worked tirelessly for what he believed in. He walked his talk. And, in the process, he built a legacy from which not only those of us in the Wash U community will continue to benefit, but also many others beyond this campus. So, I am proud and delighted to be here today.

In his invitation to me, Professor Early said: “We ask a speaker to address any aspect of the role of the liberal arts that he or she wishes,” including “a personal narrative of the speaker’s own involvement with it.” Well, that is the approach I have decided on – to speak with you about some of the personal experiences that have shaped my views about the importance of a liberal arts education.

I can imagine that many of you are wondering about the title I chose for my talk: “Liberal Arts: The Higgs Boson of Higher Education.” Well, I wanted to be intriguing, and I hope the title alone attracted a least a few of you to this lecture. But, now that you are here (for whatever reason you came), for the sake of clarity, let me explain my title and my topic. And I hope you will decide to stay anyway.

This past July, as everyone probably knows by now, scientists confirmed the existence of the Higgs boson, an elementary particle, which along with the associated Higgs field, gives everything in the universe mass, according to the “Standard Theory.” It is the glue, the molasses that scientist and Nobelist Leon Lederman labeled the “God Particle.” Scientists believe that the Higgs boson is essentially what makes the universe as we know it possible, what gives it heft, and along with gravity, weight. In the scientific community, there has been a great deal of excitement about the Higgs boson, not only because of its importance in helping to explain how the universe works, but also because its discovery has eluded scientists for so many years.
I think it can be argued that, in some respects, the liberal arts are not unlike the Higgs boson and the Higgs field. The liberal arts are what give the universe we call higher education a sense of coherence and mass. They are the foundation, the glue, the molasses that binds together all the things we teach and learn in most American colleges and universities. And, like the Higgs boson, the liberal arts are, in many ways, hard to validate and pin down.

After all, what does it really mean to have a liberal arts education or to be a liberally educated person? These concepts, in many ways, are as elusive as we say they are important. And, certainly, like the scientists who have spent decades trying to document the existence of the Higgs boson, we, in higher education, have spent many more decades trying to document the efficacy of a liberal arts education. We “know” what a liberal arts education is, why it is important, and what it can do. And yet, it can be hard to pinpoint by way of actual proofs the direct connection between a liberal arts education and the expected outcomes.

I want to stress that I am not a scholar of higher education, but I do have a very definite perspective about the liberal arts based on my own life’s experiences. Those experiences have shaped my belief that being liberally educated is, of course, about what one knows — that is, the particular knowledge or expertise a person might have. But it is perhaps more importantly about how one acquires knowledge — that is, how one learns to learn. I have come to believe that learning how to learn is probably the most important goal of a liberal arts education. I have become more convinced of this as I have begun to analyze my own life in the process of writing my memoirs, and as I have examined the lives of others whom I admire.

Of course, this notion of learning how to learn is not new or original with me. For example, America’s most influential thinker on education, John Dewey, said that schools first and foremost should teach us “habits of learning.” In a recent New York Times op-ed, Wesleyan University President Michael Roth wrote about “Learning as Freedom” and quoted Dewey, who also said: “The inclination to learn from life itself and to make the conditions of life such that all will learn in the process of living is the finest product of schooling.”

Learning from the process of living is, basically, what I want to speak about.

Looking back over my own life, two things stand out: First, I have been fortunate. I have enjoyed a rich and varied career that has moved between two worlds, so to speak, that are characterized by somewhat different institutional contexts — the world where scientific research is the primary activity, on the one hand, and the world of liberal arts education, on the other. The second thing that has become clear is that my success in moving between these two worlds was made possible by what my own liberal arts education had helped me to do — that is, to try to think broadly and to see and attempt to understand issues from multiple perspectives.

In his introduction of me, Professor Early gave you an overview of my career. I apologize, but I am going to say more about that and I hope you don’t find it boring. As I said, I intend to speak personally about what I see as the value of a liberal arts education and, therefore, I have to tell you some things about me.
Now, I need to tell you up front, in case you want to leave now, that I have not arrived at some grand "Standard Theory" of the liberal arts, nor will I have any sweeping recommendations to make. But, perhaps my experiences can spur conversations about the topic, and might offer some insight to the students and other young people in the audience.

I began my career as a scientist, conducting physics research at Argonne National Laboratory, which is operated by the University of Chicago. Two years later, I moved into the world of education when I took on my first teaching assignment as assistant professor of physics at the University of Illinois at Urbana-Champaign, and later as associate professor of physics and then professor of physics and dean of the college at Brown University.

In 1979, the worlds of science and education converged for me when I had a dual appointment as director of Argonne Laboratory and professor of physics at the University of Chicago. I went on to become vice president for research at the university with oversight responsibility for Argonne. Then it was back to science again, when, appointed by President George Bush Sr., I served for two years as director of the National Science Foundation. And then back to academia and education when in 1993, I went to the University of California, where I was provost and senior vice president for academic affairs, and in 1995, to Morehouse, where I served as president of my undergraduate alma mater for 12 years.

Throughout my career, in addition to the jobs I held I also had served on a number of corporate and foundation boards. One of them was Bank of America, then the nation's largest bank. Shortly after I left Morehouse, I was elected by the board of directors to serve as chairman, which I did for a year.

I can say in all honesty that after that year as chairman of Bank of America at the height of the financial crisis, I am overjoyed to be where I am today – serving as president of the School of the Art Institute of Chicago, a much calmer environment.

In the interest of time, I will not talk about the fascinating plots and subplots associated with my career story. And, trust me, there are some fairly dramatic moments. For example, at the University of Illinois when, on my first night at the school – before I had even held my first class – I was awakened out of a deep sleep to come help bail out of jail 250 black students who had been arrested for protesting on campus.

Or when I was provost at the University of California in 1995 when the debate over affirmative action got so heated that the campus police insisted on moving the meeting of the Board of Regents to another location – for our own safety, they said.

Nor will I talk about becoming director of Argonne, then the nation's leading nuclear reactor research laboratory, just months after the notorious Three Mile Island reactor accident and being thrust into the forefront of the national controversy over the safety and viability of nuclear power: in the United States.
What I will say now is that all of the positions I have held have included unexpected challenges and opportunities. Whatever I thought the jobs would be, they ended up being much, much more. I could not have predicted the situations I had to face, nor could I have predicted how I would deal with them and how they ultimately would be resolved. At the time, I was simply committed to drawing from all of my resources to do the best I knew how to do.

In retrospect, however, I realize that, in most cases, I was better prepared to handle those situations than I thought I was at the time. And, yes, looking back, I attribute my ability to handle those situations, my ability to deal with ambiguity and unpredictability and crisis, to my exposure to and involvement in the liberal arts.

Why do I say that? Because what I learned from my liberal arts education (both formal and informal) about how to learn shaped the way I have seen possibilities in life and, now, equally important, the way I see myself. To make this point, I want to tell you about two phases of my development. The first is about my education, formal and informal, at Morehouse and Wash U. The second phase is about my professional growth at Brown and the University of Chicago.

I went to Morehouse from the 10th grade of high school in Hattiesburg, Mississippi. Back then, all Morehouse freshmen took an exam designed to place them into courses at the right level. I was dumbfounded when I earned the fifth highest score out of a class of about 120 students. That was the first time in my life I imagined that I might actually be smart. Still, many of my classmates only saw me as this young guy from Mississippi, arguably the most backward state in the nation. I felt I needed to prove something to them, and perhaps to myself, so I set out to take the courses that were widely agreed to be the most difficult – chemistry, math and physics.

I lacked a lot of high school prerequisites for college coming from the 10th grade (I have told the story of how I thought physics was a laxative and calculus a skin disease!). But we were lucky in our teachers at Morehouse. They were skilled, patient, caring people. They were also rigorous and not shy about failing a student, but always helpful and supportive. At Morehouse, I discovered that there were more religions than Baptist and Methodist or even Christian. I learned about Islam, Zoroastrianism, Jainism and, of course, Socrates, Plato and Aristotle, but also W.E.B. Du Bois and Richard Wright.

My biggest challenge as a freshman was not science or math. It was English. My professor, Gladstone P. Chandler, who had graduated from Middlebury College in Vermont, gave me a grammar book and tutored me in high school English at the same time I was taking his college-level course. I managed to get a B-, and I was very proud of that.

When I was a sophomore, I took my first physics course with Dr. Sabinius Hobach Christensen, or Chris, as I came to call him later. Most of our professors at Morehouse were black, but Chris was a white, Danish-born, Harvard-educated gentleman who turned out to be one of the most influential people in my life.
As in English, I was poorly prepared for introductory physics and had to learn high school trigonometry and geometry while I was studying college physics. Chris helped me all the way. I only got a C+ in physics that first semester, but the course, and Chris, opened my eyes to the whole field, which I came to love – especially the way it used mathematics, one of my favorite subjects, to understand the physical universe and the things that happen around us.

In retrospect, I see that Professor Chandler and Chris were teaching me not just English and physics, but also how to learn English and physics.

In addition to physics, Chris also opened my eyes to a wider cultural world. He and his wife, Marian, were a childless couple and lived in a small apartment near campus. Chris was an accomplished violinist and Marian was a skilled pianist. They often invited students to their apartment for dinner and, afterward, would entertain us by playing classical music. This was all new to me.

My education in physics, and in the arts and culture, continued when I came to Wash U to attend graduate school. Here, I was immersed in physics, and here I found another wonderful mentor, another Chris, so to speak – Professor Eugene Feenberg.

But at Wash U, I was also embedded in an atmosphere where the issues of the day and the broader implications of our research were always at the forefront. Edward Condon, who taught us quantum mechanics, seemed to spend as much time discussing the Vietnam War and civil rights as physics. And he and Professor Barry Commoner and others helped organize some of the first “teach-ins” on the Vietnam War on any college campus in the country. “Teach-ins” were the opposite of “walk-outs.”

Wash U was also the place where I gained a deeper, more personal appreciation for music and the arts. There was something about the campus environment and the people, faculty and students that encouraged us to reach out beyond the particular discipline we were pursuing. It was here where I attended my first opera. It was on the Green: “Cosi Fan Tutti.” It was here where I listened to Wagner on 78 rpm records in the library, and where I discovered Jack Kerouac (his writings, not him, personally). The campus was a liberal arts “laboratory” in many ways, and even a physics graduate student could move beyond boundaries.

So, between Morehouse and Wash U, I not only received an excellent education in physics, but also was introduced to a whole new world of issues, ideas and interests that I had not previously known about or imagined even existed when I left Mississippi. I was continuing to learn new things – and learning how to learn new things.

Being a professor at Brown and being at the University of Chicago were also pivotal points in my growth. Until I went to Brown in 1969, professionally I was mostly in my world of physics and science education. Although I had my Morehouse and Wash U education and experiences, I had not yet begun to think about the liberal arts in a consciously self-aware manner.
When I arrived at Brown, the college was just beginning to initiate what came to be called the New Curriculum. This was the result of a remarkable effort led by two undergraduate students, Ira Magaziner and Elliot Maxwell.

At the time, colleges and universities around the country were under pressure to do a number of things: to take a stand against the Vietnam War and the draft; to abolish ROTC; to admit more minorities (Blacks, at that time); and add more courses on “Afro-American” history and culture. Magaziner and Maxwell argued that although these were very important issues, they did not address the core problem facing colleges and universities – namely, the curriculum itself – the kinds of courses students were required to take, the manner in which the courses were taught, the way learning was assessed and evaluated, and the aims of a liberal education.

At that time, Brown had a fairly traditional undergraduate liberal arts curriculum, with majors and minors and distribution requirements to ensure that all students were “exposed” to the humanities, sciences and social sciences, including a language and, of course, physical education (one had to pass swimming to graduate). The fundamental thesis of Magaziner and Maxwell and their colleagues was that the entire undergraduate educational enterprise needed to be changed to focus on the individual student. And if students were to be treated as individuals, that meant that no standard, “one size fits all” curriculum – no matter how liberal or broad – could meet the needs of everyone.

This was a bold notion, but it was adopted by the faculty, resulting in entire new categories of courses – “Modes of Thought,” team-taught interdisciplinary courses, individualized concentrations (not majors), and a curriculum with no required courses of almost any kind outside of one’s concentration (read major).

As dean of the college, I was responsible for driving the implementation of the New Curriculum, and in order to credibly urge other faculty to create and teach new courses, I had to immerse myself in interdisciplinary dialogues, sponsor lectures and seminars, and informal sessions at the dean’s residence. I had to move beyond my zone of comfort in physics and really engage with artists, classicists, and even semioticians.

I also developed an introductory physics course based on what was then termed “an individualized, self-paced, mastery” approach. Students studied the materials on their own or in self-organized groups and came to me or my teaching assistant for tutoring and questioning. The goal was to get students to learn as much as they could on their own, to learn when and how and what questions to ask, to learn how to learn, and to understand how physics is a way of thinking about the universe – and not just a lot of formulas and problems.

Did it work for the students? Yes, I think it did, in many ways. But I know it worked for me. It helped change the way I thought about physics, science and learning, and taught me more about learning to learn.
Of course, the broader question about the New Curriculum at Brown was: How could a student achieve a liberal arts education or be “liberally educated” in an environment where one could graduate without ever taking a course in philosophy, or the classics, or psychology, or art history, or biology, or any other subject typically associated with a liberal arts program of study?

The theory and logic behind the curriculum was that with strong advising and with an encouraging and supportive infrastructure, students would, in fact, take such courses without being required to do so. And when they did not, they would be no worse off than previous generations of students who had sleepwalked through required courses without gaining any significant appreciation and understanding of the course content and how it could affect their lives.

While I deeply appreciate the Brown approach to liberal arts education, not everyone does. This approach has been vilified, caricatured and dismissed by many academicians. In his very widely read book, “The Closing of the American Mind,” which was written in 1987, Allan Bloom, the late professor at the University of Chicago, captured these views. Although he did not single out Brown, almost all of Bloom’s complaints about the state of higher education could be exemplified by that institution. One of his most stringent criticisms of a “Brown type” approach to education (and many, of course, support him) was that young people fresh out of high school are totally unprepared, even with the best of advising, to decide what they should study and how to study, and that there are certain bodies of knowledge that all educated people should study and be required to study.

After Brown, I went to the University of Chicago, where the philosophy and approach to the curriculum was and is the antithesis of that at Brown. The University of Chicago approaches the teaching of the liberal arts through “core courses” – broad, general courses that are intended to bring together the humanities, social sciences and science in a coherent manner around general themes. And these courses are required. A strong emphasis is also put on the importance of writing and research through scholarly readings.

So, I got to see and experience firsthand the differences between the Brown approach and the University of Chicago approach. The University of Chicago has become more flexible in its requirements. Just yesterday, the university announced that it has abolished its swimming requirement.

Are Brown graduates “better educated,” more liberally educated than University of Chicago graduates? Does one group exhibit more of the traits we espouse for graduates of the liberal arts – namely that they are empowered and prepared to deal with complexity, diversity and change, that they have developed a sense of social responsibility, and that they have learned how to think and therefore how to learn?
Well, I don’t think we really know if one approach is “better than the other.” At least in the case of the Higgs boson, scientists had the Large Hadron Collider, the world’s largest and highest-energy particle accelerator, at their disposal. Unfortunately, there is no such corollary device in higher education, nothing that proves there is a certain, specific “liberal arts field” or approach as there is a Higgs field that if one passes through it, he or she will be endowed with the requisite intellectual, emotional and spiritual capacities to understand and engage successfully in the world.

You might argue, reasonably, that the appropriate comparison is not between the products of different pedagogical and philosophical approaches to a liberal arts education – a Brown grad versus a University of Chicago grad, or a Wash U or Morehouse grad – but between those who did not go to college and those who did, or between those who attended schools where the liberal arts were not taught and where they are taught.

This is a valid point. Mark Peltz, associate dean and director of career development at Grinnell College, has tried to make such a comparison. He recently wrote a report in “The College News” in which he attempts to demonstrate the value of a liberal arts education by looking at leaders in the business, nonprofit and government sectors and analyzing whether or not they attended a liberal arts college. He finds that a disproportionate number of these leaders did so. But to me, this is not really a validation of the liberal arts because the study does not indicate what kinds of leaders these people have become. What are their values, standards and styles of leadership?

So, what conclusions have I reached?

First, I would say that there are many paths, trajectories and curricula through which one can travel to become a liberally educated person. And the important role of colleges and universities is to focus on the student and to try to match, as best they can, their particular approach to liberal education to the students they admit and educate, because different people learn in different ways. Second – and this is something worth emphasizing – in order to really learn how to learn, one needs to learn something deeply, to really go through a process of struggle, hard work and setbacks – even failures – to master a field, subject or endeavor. Ideally, this should be something for which one has a passion and a desire to master. Physics played that role in my life.

In mathematics, there is something called an “existence proof.” The idea is that if you can prove that something is valid in at least one instance, perhaps a proof that it must be valid generally can be developed. Well, fortunately for those of us who argue for the value of the liberal arts, there are individuals whose lives can help us in constructing an existence proof.

As I said earlier, as I have reflected on my own life, I have also been reflecting on the lives of some individuals I know personally who exemplify, to me, a liberally educated person. I want to briefly mention three such people: Robert Galvin, Martin Nesbitt and Avon Kirkland.
Bob Galvin, who passed away a year ago this month, was the son of the founder of Motorola. I got to know him during my service on the Motorola board of directors for more than 20 years. Bob was the person who made Motorola one of the world’s greatest technological enterprises. Bob was more than a technical leader. Although he was versed in the intricacies of technology, more than that he was a leader and a person who understood and philosophy and who used his learnings and his ability to learn in the way he ran his business.

Bob also had deep personal values and a high sense of integrity and character, which he infused throughout the company. He was an internationalist, the person who led Motorola into China, one of the first companies to go there. And, he often said that “the job of a leader is to spread hope.”

Martin “Marty” Nesbitt is a very successful, relatively young African American businessman in Chicago. He is a close friend and advisor to President Obama. Marty has an MBA from the University of Chicago, but credits his success to his liberal arts education at Albion College. He says, “The liberal arts wired my brain” to always try to see things from others’ perspectives and to have a “fluidity of mind that has allowed me to continue to grow and learn.”

Avon Kirkland, a close friend of mine, was my apartment mate here at Wash U. Avon received his Ph.D. in organic chemistry a year before I graduated in physics, and, in fact, had an undergraduate experience similar to mine. He attended the school next door to Morehouse, Clark College.

While we were at Wash U, Avon taught himself to play guitar and sang folk songs in Gaslight Square. After working a few years as a research chemist, he decided he wanted to pursue folk singing full time and moved to New York. While there, he took a part-time job working for a company that produced instructional materials for teachers, and within two years, he was offered the presidency of this multi-million dollar company.

Deciding not to accept that offer, Avon moved to San Francisco and taught himself how to film and write stories for television by going to the public library. Avon is now a world-renowned television writer and producer of award-winning shows such as “Simple Justice,” which portrayed the Brown v. Board of Education story, as well as stories about Ralph Ellison and Booker T. Washington.

Bob, Marty and Avon never stopped learning because they all learned how to learn.

As futurist Alvin Toffler said, “[in the future] illiteracy will not be defined by those who cannot read and write, but by those who cannot learn and relearn.”

Then, of course, there is the man we came here to honor today, Jim McLeod.
Initially, Jim was a chemistry major at Morehouse, but changed his focus of study to German after studying at the University of Vienna in Austria. An engaging professor, Jim was also an effective administrator. I learned that Jim often said his goal was to have every Wash U student “known by name and by story.”

Before coming to Graham Chapel this afternoon, I visited McLeod’s Way, the beautifully designed and landscaped gathering place dedicated in his honor. As I passed there, I thought how pleased Jim would be to have his name associated with such a contemplative space, a place to think, to reflect, to expand one’s perspective, a place so symbolic of the inner journey of the mind and the joys of a liberal arts education.

That is a powerful legacy – and a powerful inspiration for those of us in higher education who value the liberal arts. Like the scientists who never ceased in their search for the Higgs boson, we must never cease our work to continually enrich the liberal arts experience for our students, nor our quest to prove that a liberal arts education does, in fact, produce the kind of people we say it will.

So, where am I now along this path?

Well, I started a new job in an institution unlike any I had experienced before – at the age of 72. I have gone from science to art. Interestingly enough, there are more similarities between the arts and sciences than one might suspect. The creative impulse, curiosity, passion and dedication, and willingness to explore beyond accepted norms are shared attributes. But they are different worlds and, once again, I find myself in an environment where I am a learner. I can tell you it has been a wonderful experience.

So, thank you, Gerald (Professor Early) for giving me this opportunity to share my experiences with all of you today. And thanks to this marvelous institution, Washington University, for all you did for me.

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