

THE UNIVERSITY OF TOLEDO COMMENCEMENT

**Sunday, May 5, 2013
2:00 P.M. Ceremony Speaker**



Dr. Jeffrey Wadsworth

WADSWORTH BIO

As President and CEO of Battelle, the world's largest nonprofit independent research and development organization, Dr. Jeffrey Wadsworth holds a perspective of STEM competency different from that of many educators, but his passion on the subject makes common cause with his academic brethren.

Speaking in 2010 before the U.S. House of Representatives Committee on Science and Technology on the subject of reforming K-12 STEM, Wadsworth noted, "STEM does not take place just in laboratories — it can be found everywhere. STEM education is enhanced when industry and private partners engage their core skills with educators."

The active pursuit of such intellectual syntheses may have begun as early as Wadsworth's youth. Born in Germany of English parents, by his 16th birthday he had lived in Europe, Asia and the Middle East. "It had a huge effect on me in terms of becoming familiar with different cultures and seeing things from a different perspective," he once said in an interview.

Educated at Sheffield University in England, he studied metallurgy, earning a 1975 PhD in the discipline. In 1991, the university conferred on him a Doctor of Metallurgy degree for his published work, following it up in 2004 with its highest recognition, an honorary Doctor of Engineering degree.

Wadsworth came to the United States in 1976, working for Stanford University, Lockheed Missiles and Space Co. and Lawrence Livermore National Laboratory. It was as director at Livermore that he helped create the Joint Genome Institute, which today puts its more than \$70 million annual budget toward advancing genomics in support of U.S. Department of Energy (DOE) missions related to clean energy generation, and environmental characterization and cleanup.

He became an American citizen in 1984.

In 2002, Wadsworth joined global research and development giant Battelle, serving as a member of the White House Transition Office for the U.S Department of Homeland Security. From 2003 to 2007, he was director of Oak Ridge National Laboratory, the largest multipurpose science facility of the DOE.

Despite a career path that diverged from academia, he's never lost his zest for and deep belief in education. Today as a board member of Achieve Inc. — a national education network — and of the senior executive fusion Business Higher Education Forum, Wadsworth helps lead national efforts to enhance STEM education. In his home base of central Ohio, he's strengthening both education and the economy by engaging with local civic and community organizations. In 2010, then-Governor Ted Strickland appointed him to the Ohio State University board of trustees. He was also the inaugural chair of the OSU Medical Center board, and remains a board member of the Carpenter Technology Corp.

His honors, awards and publications are numerous, wide-ranging and international in scope. However, the main focus of this learning-conscious citizen of the world is on identifying and nurturing talent through education, whether classroom-formal or office-informal. As he said of his long executive experience, "The best thing I think [administrators] can do is to hire and encourage people who are better and smarter than I am and to position them for the future. I always look for that in our leaders."

WADSWORTH COMMENCEMENT ADDRESS

President Jacobs, trustees, and distinguished faculty; families and friends, and most of all, members of the graduating class:

Thank you for inviting me to join you for this great, uplifting, Commencement Ceremony.

Let me start by saying that I recognize I am the only thing standing between you and graduation, and party-time, so I plan to be brief.

I was told years ago that for a commencement speech, I am to assume the role of the deceased in an Irish wake; that is, I am necessary for the ceremony, but I am not expected to say too much.

In 1972, about 41 years ago, at age 22, I sat in my own first university commencement, in Sheffield, England.

I could not have imagined at that time that I would ever stand in front of you today, with the introduction that President Jacobs gave me. And, it would have been impossible to imagine myself in my current role at Battelle. First, I will tell you that 40 years have flown by . . . you may not believe it, but it will happen to you so you need to use your time wisely.

Second, I wasn't a very successful student until my early twenties, so my story is one of hope!

As I briefly describe my experiences and observations, I ask you to think about three questions which I have had to deal with, and with which you will have to deal.

Each question is a conundrum — that is, there is no correct answer and the answer will change with time.

First: Where will you live and work?

Second: What will you do?

Third: How will you do it?

So I am clearly not from Ohio – I could say I am from East of Ohio; a very long way East. I was born in, Hamburg, Germany, to English parents, because my father was in the army.

By age 16, I had lived in Germany, Holland, England, Calcutta in India (we travelled by boat and train), Singapore, England, South Yemen (Aden), West Berlin, and England again. I attended eight different schools, and I don't recall liking any of them. Because I have several degrees, people assume I found school to be easy, but I was a below-average student at best.

I did once win a prize for the most improved student – that can be a back-handed compliment.

My dad died when I was sixteen, and my mother and I were pretty much left to figure things out. No-one in my family had stayed at school beyond age fifteen; going to college was completely unheard of.

But at 16, my exam results although not great, were better than expected; I had a clever idea about leaving school but a teacher ordered me to go and sign up at the local school. Being an army kid I said "Yes sir!", and I stayed at school until I was 18. As an aside, I would urge you to take a few minutes and write down on a piece of paper who helped you, and how, and then reproduce that in your own career.

To everyone's surprise two years later I then scraped into Sheffield University to study metallurgy, which nowadays is often called materials science or materials engineering.

Why did I select metallurgy at age 18? I had no idea what to do, and because I wasn't doing very well, a teacher told me I should study pharmacology or metallurgy. I want to emphasize that I worked very, very hard. My work ethic was very high, I just didn't do well.

He asked me after a couple of weeks which I had decided upon. I hadn't, so he gave me a book on metallurgy. I never actually read the book, but applied to study metallurgy.

So I went to Sheffield, and struggled for two years to stay in school. But in the third year, junior year, something happened. I was starting to get interested in metallurgy, but my confidence was quite low. I went to seek help from a professor. He went through a problem with me in detail and asked if I understood. I didn't. So he explained it again; I still didn't understand it, but I was starting to. He went through it for a third time, and half way through I suddenly understood what was going on, and I stopped him at that point because it was suddenly clear to me why the problem was interesting.

I always remember that moment as one that changed my life and I went from strength to strength.

I graduated almost at the top of my class, immediately entered a Ph. D. program, finished in three years, and won prizes. What had happened to me was that once I understood my subject, it stopped being a problem to learn. I have since learned that this phenomenon is not uncommon.

For this reason, I never give up on young people because they may not have had this moment of realizing they can succeed. So never give up – somewhere out there is the interest, the passion, that will make what you do fun.

Let me move again to my three questions:

First: Where will you live and work?

Up to the last 100 years or so, most people lived within 50 miles of where they were born. But this is no longer the case.

After Sheffield University, I came to the United States for one year to do a post-doc at Stanford University in California, and ended up teaching there also. I never went home – but I am a legal immigrant!! Please don't tweet or text the Immigration Department.

I stayed in the California Bay area for almost 25 years, after 4 years at Stanford I worked for Lockheed and then Lawrence Livermore National Laboratory.

Eleven years ago I moved here to Battelle knowing that a year later I would go to East Tennessee to serve as Director of the Oak Ridge National Laboratory, the largest science and energy Lab in the country.

Five years ago, I returned to Columbus, Ohio, to lead Battelle.

Clearly, my choice has been to build my lifestyle around my career — to go where the opportunities are.

But many people place a high value on living near their families, and I have found this be particularly true in the Mid-West and the South. This can be a difficult choice. But you know, I was once told: if you want to play for the Yankees, you have to go to New York. This is your first conundrum or question.

My second question is: What will you do? Let me help with your answer – do something that matters.

There are so many important problems to solve. In my world I think about three, inextricably- interwoven, enduring, challenges: National Security, Energy and Environment, and Human Health.

As I graduated in 1972, the most pressing problem for my generation was the Cold War. The U.S. and the Soviet Union had about 50,000 nuclear warheads; each 10 times the power of the Hiroshima bomb. There was no discussion of global warming; AIDS did not exist. On the other hand, we had sent men to the moon in 1969 and the seeds of the internet revolution had been planted. So, you are graduating at a time that is no less stressful, no less exciting, no less critical – but the details are different.

Today, the threat of mass destruction has been replaced by terrorism, smaller wars, and nuclear proliferation.

The area of energy and the environment is a challenge that our generation failed to address.

We knew global demands for energy were rapidly increasing; today's estimates indicate a doubling of world energy consumption by 2050. This brings with it massive impacts on the environment, such as global warming or other environmental concerns.

The third challenge is that of human health as populations rapidly increase, and travel becomes increasingly prevalent and new diseases emerge.

And, these need to be solved as we recover from the worst recession since the Great Depression.

These three interwoven challenges — national security, energy and the environment, and human health — will increasingly dominate national and international agendas. And you will have to deal with them.

Some of you will address them through science and technology, some of you will address them from other directions, such as legal, sociological, diplomatic, political, educational, and other avenues. And some of you will be directly engaged in teaching the students of the future.

Now, the fact is that the nations that address these problems most effectively will prosper. As I go around the world, which I do, I see the international competition stepping up. In China, in Russia, in the Middle East. We follow these trends very carefully.

I conclude that in order to compete, we need three smart things – smart people, smart ideas, and smart environments.

So the U.S. must solve these problems through increased focus on education, science and technology investments, and creation of alternative business solutions through increased awareness of international competition and impacts.

Today, we have work to do on all three of these areas.

Bill Gates recently stated, “This country runs on innovation”. But, innovation requires an increasingly highly-educated workforce.

And this brings me to my great concern – our current state of education. This is across the board, but in particular in the sciences, technology, engineering, and mathematics.

This should be a matter of passionate concern to all Americans, because an educated workforce is the key to innovation.

So in answer to question 2, what will you do? Let me repeat my suggested answer.

Do something important. Do something that matters.

The third question is: How will you do your life’s work? My suggested answer is do it with great passion.

Another way to ask this, is how important is it to be happy in your job?

My observation is that working at a job that pays a lot of money, but makes you miserable, is not worth it.

Albert Einstein said something that is helpful in this regard: "The most important motive for work, in school and in life, is pleasure in work, pleasure in its result and the knowledge of the value of the result to the community."

Steve Jobs, the CEO of Apple, said: "The only way to do great work is to love what you do."

So, I will give you this advice. If when you wake up, you do not want to go to work, please change what you are doing and find the vocation that inspires you.

And, here is the motivation: The ability to change your job is a privilege that many of your parents, and perhaps most of your grandparents, did not have. My Granddad had to sort sheep fleeces in Tierra del Fuego because in the 1920's in England that was the only job he could find. He was away for 10 months of the year. The unacceptable alternative was to be unable to sustain his family, but parents work hard so that their children will have a better life.

Being passionate about your work is, in my opinion, the one way to achieve personal and professional satisfaction and achievement.

Let me summarize, figure out where you are willing to live, do something that matters, and do it with passion. Think big, think differently, think often. I assure you that the next 40 years will flash by – they have for me. Your source of pride will not be your acquisitions, or your recognitions, but the lives you touched, the differences you made.

I hope that those of you who are graduating today will take with you the vision that is driving the University of Toledo to build on its distinguished history and contribute to creating the workforce of the future.

To you, the members of the Class of 2013, congratulations on your achievements.

I have one final request of each of you: please thank your parents, thank your teachers, and thank others who have helped you achieve your great accomplishment today.

And I thank you for your kind attention.