

## Commencement Speech

### Minds Move Mountains: The Power of Interdisciplinary Collaboration

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Thank you.

I also want to thank President Frohnmayer for inviting me to give this speech today. I am deeply honored.

I want to begin by congratulating the graduates of the class of 2008. Congratulations to all of you!

You have accomplished so much by graduating from the University of Oregon.

- **Many of you** are the first in your family to do so.
- **A lot of you** did it in a foreign country and in a second language.
- **Some of you** did it while holding down a full time job.
- **Others of you** did it while raising a child.
- **All of you** have so much to be proud of.

For most graduates, commencement is a time of big questions.

- Questions like: What will I do with my life? Should I go to graduate school, go to law school, or get a job?
- Questions like: What jobs am I qualified for? And, more importantly, what kind of job do I want?
- Questions like: Can I afford to travel before I get a job? Should I live in Eugene, move back to my home town, or move to New York, or maybe Buenos Aires?

- Questions like: How can I make a difference in the world?

I want to talk about the last of these questions: "How can I make a difference in the world?" The University of Oregon's motto addresses this very question. The University seal shows Mt. Hood, surrounded by the Latin phrase -- *Mens Agitat Molem* -- literally, "minds move matter" but usually interpreted as *Minds Move Mountains*. That motto reminds us that knowledge is powerful, powerful enough to move the largest mountains, powerful enough to solve the most challenging problems. Indeed, while preparing this speech, I discovered that four years ago, some of you answered a very fitting admissions question: "What mountains do you want to move and how will you use your University of Oregon education to do so?" I want to ask all of you to think about that question again today.

The first part of that question is "What mountains do you want to move?" or, in today's vernacular, "what's your problem?"

### **So, "What IS your problem?"**

I mean that seriously. This is an overused phrase that I would like to rehabilitate.

What is your biggest problem with the world, today? Take a moment to think about it.

[10 second pause]

Okay, got it? Let me guess:

The war in Iraq.

The genocide in Darfur.

The 30 or more other wars going on in the world right now.

The world food shortage.

The 25,000 people who die of AIDS, diarrhea, tuberculosis, and malaria every day.

Climate change.

The world's dying oceans.

Poverty. Homelessness.

The abuse of women, children, and the elderly.

Racism and sexism.

I am sure we do not all agree on which of these problems is most important. But there is no reason that we have to try to agree. All of these problems -- and far too many others -- are worthy problems. In today's globalized world, John F. Kennedy might have asked: "citizens of the world: ask not what the world can do for you -- ask what you can do for the world."

So, I don't know what your problem is, but you need one. The world needs you, each and every single one of you, to find a problem and to start working to fix it.

**Now, let's go back to that admissions question I mentioned earlier. The second part of that question asked "how will you use your education to move the mountains you want to move?" Or, again in today's vernacular, "what are you going to do about it?"**

Your time at the U of O has, I am sure, deepened your understanding of just how MANY ... BIG ... problems the world faces. For most people, these problems are too big, too overwhelming, too depressing. As comedian Paula Poundstone said, "What moron said that knowledge is power? Knowledge is power only if it doesn't depress you so much that it leaves you in an immobile heap at the end of your bed."

But the University's motto calls on you to resist that temptation to stay in bed in the morning. It calls on you to get out of bed BELIEVING that knowledge IS power. Indeed, it calls on you to ACT as if knowledge IS power and thereby to make it true.

Some of you are already doing that. Let me give you an example. If you ask me what my problem is, it's climate change. Scientists predict that climate change will raise sea levels, melt glaciers, push species to extinction, dramatically affect agriculture, and change rainfall patterns. Climate change is an impossibly large, impossibly complex, impossibly depressing problem. Yet, right on this campus, we have students and faculty working to address this problem. Let me tell you about one of them, Takiya Ahmed, a truly inspiring graduate student in chemistry. Takiya has developed new processes for producing a chemical used in everything from paint to plexiglass to Pampers. Her techniques eliminate the toxic byproducts produced by existing processes, and thereby eliminate the need to burn millions of barrels of oil to make those toxic byproducts safe. Takiya, while still in graduate school, has worked closely with industry to get her techniques adopted and those techniques will make a major contribution to combating climate change. I know that many of the other graduates in the audience are making -- indeed, already have made -- similar contributions to the problems they care about. Knowledge really CAN move mountains.

But, I want to remind you that the University's motto is not "MIND moves mountains" BUT "mindS move mountains." We can't move a mountain by ourselves. We have to collaborate. We have to work in groups. And, I want to suggest, those groups work best when they are interdisciplinary.

Think about how much progress you could make on a problem important to you working on it by yourself. Now, think about the progress you could make working with everyone at the graduation ceremony for your department or your program -- people who have been trained in the same discipline and the same ways of thinking as you. Finally, think about the progress you could make working on it with everyone at THIS ceremony -- people who have been trained in disciplines and ways of thinking that are quite different from yours. Think about the depth of knowledge, the diversity of intellectual skills

and training, and the range of perspectives in this room. Imagine the progress you could make on any problem working with THESE people.

Getting different people to work on a common problem generates new, vibrant, organic, and surprising ideas -- ideas far better than any individual could come up with on their own. The complex nature of important social problems requires interdisciplinary groups.

Interdisciplinarity is the idea that -- no matter what your problem, no matter what your degree, no matter what job you take -- you can always understand and solve a problem better, more completely, and faster by collaborating with people with different backgrounds who have had different training and who have different viewpoints. Interdisciplinarity involves true collaboration. You start out working with people who see the problem differently than you do and think about solving it in different ways than you do. But, by working together, you solve a shared problem.

Usually, when we take on big, hard problems, we do not seek out people who think differently from ourselves. But we need to. We need to seek out people who see the world differently, who may disagree with us, who will challenge us and will let us challenge them, but who will work with us to solve a common problem. We cannot move the biggest mountains alone.

What would you think if I organized a group of 3,000 people

- that included atmospheric chemists, archaeologists, biologists, economists, political scientists, and lawyers;
- that included people from over 130 countries;
- that included Asians, Africans, Hispanics, and Caucasians;
- that included Muslims, Jews, Christians, Buddhists, and atheists;
- and that included Republicans, Democrats, Communists, Socialists, and others from political parties you've never even heard of.

It's hard to imagine that such a group could agree on what to have for lunch.

But, this describes the Intergovernmental Panel on Climate Change, an international organization of experts who -- by working together for the past 20 years despite their differences -- won the Nobel Peace Prize for creating an understanding of the climate change problem and responses to it that are light-years ahead of what any smaller group of them, let alone any one of them, could have come up with alone. Interdisciplinarity has been critical to the progress our world has made in understanding and addressing climate change. And it will be critical to our future progress on climate change.

People trained in the natural sciences -- like chemistry, biology, physics, mathematics, geology, computer science -- help us understand how human behaviors are causing climate change and affecting the Earth.

People trained in the social sciences -- like economics, psychology, geography, political science, public policy -- help us design the strategies NECESSARY to address climate change.

People trained in the arts and humanities -- like philosophy, history, literature, music, dance -- help give meaning to our lives and encourage us to re-examine our ethics, to re-examine our place in the natural world, and to imagine the future we may face if we do not address the problem and the future we can achieve if we do.

People trained in professional schools -- like architecture, business, journalism, education, law -- help transform our buildings, our companies, our media, our schools, and our government from being causes of the climate change problem to being solutions to it.

People trained in interdisciplinary programs -- like international studies, ethnic studies, women's and gender studies, environmental

studies -- help show us how to surmount the disciplinary boundaries that get in the way as we try to work on the many complex interdisciplinary problems that the world faces.

Luckily, people with all these skills are sitting here today! And the skills that all of you have worked so hard to develop can solve so many problems.

I have talked about climate change because that is what I know about and what I care about. But the message I want to leave you with today is not about the importance of climate change. It's about the importance and value of interdisciplinarity. It's about the fact that, whatever problems you care about, whatever problems you devote your life to, you will solve them more successfully if you work with those trained to think differently than you.

Working with others, you CAN move the mountains of war, genocide, and violence. You CAN move the mountains of poverty, homelessness, disease, and starvation. You CAN move the mountains of racism and sexism. You CAN move the mountains of the abuse of children, women, and the elderly. Working with others, you CAN move any mountain you want to move.

Congratulations, graduates!

As you commence the next chapter of your lives ...

Let your minds move mountains.