I'm delighted to be here. I'm honored by the invitation, and thanks. I would love to talk about stuff that I'm interested in, but unfortunately, I suspect that what I'm interested in won't interest many other people. First off, my badge says I'm an astronomer. I would love to talk about my astronomy, but I suspect that the number of people who are interested in radiative transfer in non-gray atmospheres and polarization of light in Jupiter's upper atmosphere are the number of people who'd fit in a bus shelter. So I'm not going to talk about that. (Laughter)
很高兴来到这里。 收到这份邀请使我感到非常荣幸，谢谢。 我很高兴能够讲述我感兴趣的东西， 遗憾的是我估计，我感兴趣的东西 绝大多数人会不感兴趣。 首先，我的正式职业是一名天文学家。 我很想谈谈我对天文学的研究， 但我怀疑对辐射转移 对非灰色大气层 以及对木星的高层大气的光偏振 感兴趣的人加起来是否能挤得满一个公共汽车候车亭。 所以我不打算去谈论它。 （众笑）
It would be just as much fun to talk about some stuff that happened in 1986 and 1987, when a computer hacker is breaking into our systems over at Lawrence Berkeley Labs. And I caught the guys, and they turned out to be working for what was then the Soviet KGB, and stealing information and selling it. And I'd love to talk about that -- and it'd be fun -- but, 20 years later ... I find computer security, frankly, to be kind of boring. It's tedious. I'm --
另外一件值得一谈的趣事 发生在1986年和1987年， 当时一个电脑黑客想要进入 我们在Lawrence Berkeley研究所的系统。 我抓到了那些黑客， 并且发现他们当时正在为前苏联克格勃工作， 他们想要窃取我们的信息并且倒卖出去。 我很想谈谈这件事情–而且一定会很有趣– 但是20年以后… 我发现电脑安全这个领域，说老实话，有点无聊。 它过于乏味。 我…
The first time you do something, it's science. The second time, it's engineering. A third time, it's just being a technician. I'm a scientist. Once I do something, I do something else. So, I'm not going to talk about that. Nor am I going to talk about what I think are obvious statements from my first book, "Silicon Snake Oil," or my second book, nor am I going to talk about why I believe computers don't belong in schools.
当你第一次做一件事情的时候，就像搞科研。 第二次做这件事情，就像搞工程。 第三次，就像成了一个技师。 我是一个科学家。当我在着手一件事情的时候，我已经开始想着下一件事情了。 所以我也不会讲那个黑客的故事。 我也不会去谈那些我认为我的第一本书（Silicon Snake Oil）里很明确的观点， 我也不会去谈论我的第二本书， 我更不会去谈论 为什么我认为电脑不应当进入学校。
I feel that there's a massive and bizarre idea going around that we have to bring more computers into schools. My idea is: no! No! Get them out of schools, and keep them out of schools. And I'd love to talk about this, but I think the argument is so obvious to anyone who's hung around a fourth grade classroom that it doesn't need much talking about -- but I guess I may be very wrong about that, and everything else that I've said. So don't go back and read my dissertation. It probably has lies in it as well.
现在有一个影响力很大的奇怪的提议 就是要在学校普及电脑。 我的观点是：万万不可！ 让电脑远离学校，永远不许电脑进入学校的大门。 这也是一个我想要谈论的问题。 但我认为我的理由对于任何一个在四年级教室里待过的人是如此的明显， 以至于没有必要再在这里谈了– 但我的观点可能是相当错误的， 包括我刚刚说的所有东西都可能是错误的。 所以不必

回头再去评判我的论点。 甚至可能在这里我说的也不是真话。
Having said that, I outlined my talk about five minutes ago. (Laughter) And if you look at it over here, the main thing I wrote on my thumb was the future. I'm supposed to talk about the future, yes? Oh, right. And my feeling is, asking me to talk about the future is bizarre, because I've got gray hair, and so, it's kind of silly for me to talk about the future. In fact, I think that if you really want to know what the future's going to be, if you really want to know about the future, don't ask a technologist, a scientist, a physicist. No! Don't ask somebody who's writing code.
说到这里，五分钟前我把我的演讲列了一个提纲。 （众笑） 假如你看这里， 写在我大拇指上的最主要的东西是未来。 我是不是应该讨论一下未来？ 噢，对了。我的感觉是，让我讨论未来是一件很奇怪的是， 因为我已经满头灰白了， 所以让我去讨论未来有些愚蠢。 事实上，我认为假如你真的要知道未来是什么样子的， 假如你真的想要知道未来， 不要去问科技专家，科学家，或者物理学家 千万不要问那些写程序的人。
No, if you want to know what society's going to be like in 20 years, ask a kindergarten teacher. They know. In fact, don't ask just any kindergarten teacher, ask an experienced one. They're the ones who know what society is going to be like in another generation. I don't. Nor, I suspect, do many other people who are talking about what the future will bring. Certainly, all of us can imagine these cool new things that are going to be there. But to me, things aren't the future. What I ask myself is, what's society is going to be like, when the kids today are phenomenally good at text messaging and spend a huge amount of on-screen time, but have never gone bowling together?
如果你想要知道这个社会20年后会是什么样儿， 去问一个幼儿园教师。 他们知道。 当然，也不要随便逮着一个幼儿园教师就问， 要去问有经验的。 他们就是那些知道下一代社会会是什么样儿的人。 不光是我， 许多在谈论未来是什么样子的人其实并不知道未来是什么样子的。 当然了，谁都可以想象将可能出现的 那些新奇好玩的新事物。 但是对我来说，新鲜事物不代表未来。 我认为真正重要的是，未来的社会将是什么样的， 当今天的孩子如此熟练的发短信， 并且花费相当多的时间在电子屏幕前， 却从来没有一起去打过保龄球。
Change is happening, and the change that is happening is not one that is in software. But that's not what I'm going to talk about. I'd love to talk about it, it'd be fun, but I want to talk about what I'm doing now. What am I doing now? Oh -- the other thing that I think I'd like to talk about is right over here. Right over here. Is that visible? What I'd like to talk about is one-sided things. I would dearly love to talk about things that have one side. Because I love Mobius loops. I not only love Mobius loops, but I'm one of the very few people, if not the only person in the world, that makes Klein bottles. Right away, I hope that all of your eyes glaze over. This is a Klein bottle. For those of you in the audience who know, you roll your eyes and say, yup, I know all about it. It's one sided. It's a bottle whose inside is its outside. It has zero volume. And it's non-orientable. It has wonderful properties. If you take two Mobius loops and sew their common edge together, you get one of these, and I make them out of glass. And I'd love to talk to you about this, but I don't have much in the way of ... things to say because -- (Laughter)
变化正在发生，而且那些在发生的变化 并非是发生在软件里的变化。 但这不是是我将要谈

论到的。 我很想谈谈这个话题，那一定会很有趣， 但是我想要谈谈我最近在干的一些事情。我现在正在干什么？ 噢—我另外想提到的一些事情 就是这个 你们看得见吗？我想说的叫单向性事物。 我非常乐于谈谈 这种单向性事物。 因为我一直迷恋莫比乌斯带。不只是莫比乌斯带， 我还是世界上独一无二 的制造克莱因瓶的人， 好了，我希望你们好好地盯着这个瓶子。 这是一个克莱因瓶。 对于你们当中一些知道什么叫克莱因瓶的人来说， 你肯定会转一转你的眼睛，然后说，是的，我知道这是怎么一回事。 这个瓶子的内壁和外壁其实是同一个面。 这个瓶子的容积为零。而且是无定向性的。 它具有非常奇妙的特性。 假如你将两个莫比乌斯带的相同边缘缝接起来， 你就会得到我手里一样的东西，它是用玻璃制造的。 我很乐意跟你们谈谈这个东西， 但是我又没什么可多说的，因为— （众笑）
(Chris Anderson: I've got a cold.)
（Chris Anderson: 我有感冒。）
However, the "D" in TED of course stands for design. Just two weeks ago I made -- you know, I've been making small, medium and big Klein bottles for the trade. But what I've just made -- and I'm delighted to show you, first time in public here. This is a Klein bottle wine bottle, which, although in four dimensions it shouldn't be able to hold any fluid at all, it's perfectly capable of doing so because our universe has only three spatial dimensions. And because our universe is only three spatial dimensions, it can hold fluids. So it's highly -- that one's the cool one. That was a month of my life. But although I would love to talk about topology with you, I'm not going to. (Laughter)
然而，“TED”中的“D”代表的是设计（design） 两周前我刚刚做了— 事实上，我一直在制造并且买卖小，中，和大型克莱因瓶。 但是我刚刚做了一个— 我很高兴能够第一次在公共场合下展示给你们看。 这是一个克莱因葡萄酒瓶， 尽管在一个具有四维空间的 瓶子里储存不了任何液体， 但是这个瓶子却完全可以。 因为我们所处的宇宙只有三维。 正是因为这个宇宙只有三维空间， 所以这个瓶子可以储存液体。 所以它很— 这是比较酷的一个。 它花费了我一个月的时间。 虽然我很乐意跟你们解释拓扑学，但是今天我不会。 （众笑）
Instead, I'm going to mention my mom, who passed away last summer. Had collected photographs of me, as mothers will do. Could somebody put this guy up? And I looked over her album and she had collected a picture of me, standing -- well, sitting -- in 1969, in front of a bunch of dials. And I looked at it, and said, oh my god, that was me, when I was working at the electronic music studio! As a technician, repairing and maintaining the electronic music studio at SUNY Buffalo. And wow! Way back machine. And I said to myself, oh yeah! And it sent me back.
相反，我想说一下我的母亲， 她去年夏天过世了。 她生前保存了很多我的照片，就像所有的母亲一样。 你们谁可以把屏幕信号切到这个幻灯？ 当我看她的相册时 她有这样一张关于我的照片，站着— 哦不对，坐着，那是1969年，我的背后是一片旋钮。 我看着这张照片，我说，天哪， 那是我还在电子音乐工作室的时候的照片！ 作为一个技工，负责对仪器的维修和保养 那个工作室在纽约州立大学水牛城分校。天哪！ 很陈旧的设备。然后我对自己说，噢，我想起来了！ 这张照片将我的思绪送回了过去。
Soon after that, I found in another picture that she had, a picture of me. This guy over here of course is me. This man is Robert Moog, the inventor of the Moog synthesizer, who passed away this past August. Robert Moog was a generous, kind person, extraordinarily competent engineer. A musician who took time from his life to teach me, a sophomore, a freshman at SUNY Buffalo. He'd come up from

Trumansburg to teach me not just about the Moog synthesizer, but we'd be sitting there -- I'm studying physics at the time. This is 1969, 70, 71. We're studying physics, I'm studying physics, and he's saying, "That's a good thing to do. Don't get caught up in electronic music if you're doing physics." Mentoring me. He'd come up and spend hours and hours with me. He wrote a letter of recommendation for me to get into graduate school. In the background, my bicycle. I realize that this picture was taken at a friend's living room. Bob Moog came by and hauled a whole pile of equipment to show Greg Flint and I things about this. We sat around talking about Fourier transforms, Bessel functions, modulation transfer functions, stuff like this. Bob's passing this past summer has been a loss to all of us. Anyone who's a musician has been profoundly influenced by Robert Moog. (Applause) And I'll just say what I'm about to do. What I'm about to do -- I hope you can recognize that there's a distorted sine wave, almost a triangular wave upon this Hewlett-Packard oscilloscope.
不久以后，我找到了另外一张我妈妈替我保存的我的照片。 这个家伙显然就是我。 这个人是Robert Moog， Moog合成器的发明者， 他去年八月份过世了。 Robert Moog是一个心胸宽广，温和善良的人；他同时又是一个才华横溢的工程师。 他同时还是一个音乐家，他花了很多功夫培养我 我当时还是一个在纽约州立大学水牛城念大一，大二的学生 他会专程从Trumansburg赶来教我 不光是Moog合成器，我们就坐在那儿— 我当时还在攻读物理学。那是1969，70和71年。 我们就一起研究物理，我还在攻读物理学时， 他就会说：“这是一个不错的选择。 不要因为受电子音乐的影响而放弃追求物理。” 每次他来指导我物理时，他会几小时，几小时地花时间教导我。 我进研究生学院的推荐信也是他给我写的。 （回到这张照片）背景是我的自行车。 从这个背景我意识到这是我朋友的客厅。 Bob（就是Robert） Moog带了一大堆的装置过来 来向我和Greg Flint演示这些东西。 我们就坐在那里讨论傅立叶变换。 贝色函数，调制变换函数， 以及类似的东西。 Bob（Robert）去年夏天的过世对我们所有人来说是个很大的损失。 任何一个音乐家都深受Robert Moog的影响。 （鼓掌） 我即将告诉你我要干什么。我要干的是— 我希望你们都能辨认出照片里的这个被扭曲的正弦波， 它从这个HP的示波器看上去几乎就是一个三角波。
Oh, cool. I can get to this place over here, right? Kids. Kids is what I'm going to talk about -- is that okay? It says kids over here, that's what I'd like to talk about. I've decided that, for me at least, I don't have a big enough head. So I think locally and I act locally. I feel that the best way I can help out anything is to help out very, very locally. So Ph.D. this, and degree there, and the yadda yadda. I was talking about this stuff to some schoolteachers about a year ago. And one of them, several of them would come up to me and say, "Well, how come you ain't teaching?" And I said, "Well, I've taught graduate -- I've had graduate students, I've taught undergraduate classes." No, they said, "If you're so into kids and all this stuff, how come you ain't over here on the front lines? Put your money where you mouth is."
哦对了。我可以切换话题了对吗？ 孩子。孩子是我的下一个话题—可以吗？我的手上写的是孩子，那就是我下一个要讲的话题了。 我已经决定了，至少对我来说， 我在这方面没有什么创意。 所以我的所作所为都只能局限在一小部分地方。 我感到最好的能够帮助孩子的方法是帮助当地的孩子。 不管你有什么样的文凭。 一年前 我在跟一些学校教师谈论这个问题。 然后他们中的一些人会对我说， “为什么你不去教那些孩子呢？” 我说：“我过去教的是研究生— 我同样也教过本科生。” 他们说：“假如你对孩子的教育问题如此关心， 那你为

什么不过来亲自教授他们？ 你应当说到做到，而不是光耍嘴皮子。”
Is true. Is true. I teach eighth-grade science four days a week. Not just showing up every now and then. No, no, no, no, no. I take attendance. I take lunch hour. (Applause) This is not -- no, no, no, this is not claps. I strongly suggest that this is a good thing for each of you to do. Not just show up to class every now and then. Teach a solid week. Okay, I'm teaching three-quarters time, but good enough. One of the things that I've done for my science students is to tell them, "Look, I'm going to teach you college-level physics. No calculus, I'll cut out that. You won't need to know trig. But you will need to know eighth-grade algebra, and we're going to do serious experiments. None of this open-to-chapter-seven-and-do-all-the-odd-problem-sets. We're going to be doing genuine physics." And that's one of the things I thought I'd do right now. (High-pitched tone)
他们说的是对的。我就一周花四天去教八年级科学。 我不是隔三岔五地来教书。 我上课要点名。 我还有午间休息。（鼓掌） 你们没有必要为我鼓掌。 我强烈建议这是你们每一个人应当做的事情。 不只是隔三岔五地去一下教室。 好好地教一个星期。我一星期内只花四分之三的时间教书，不过已经足够好了。 我是这样教导修我科学课程的学生的 我对他们说：“我要教你们大学水平的物理。 但是我不会涉及到微积分。 你不需要懂得几何学。 但是你需要懂得八年级程度的代数， 然后我们要做真正的实验。 我是不会给你们一本书然后光叫你们做书后的习题的， 我要教你们常识性的物理学。” 然后我就要向你们展示我是如何给他们做试验的。 （高频段音）
Oh, before I even turn that on, one of the things that we did about three weeks ago in my class -- this is through the lens, and one of the things we used a lens for was to measure the speed of light. My students in El Cerrito -- with my help, of course, and with the help of a very beat up oscilloscope -- measured the speed of light. We were off by 25 percent. How many eighth graders do you know of who have measured the speed of light? In addition to that, we've measured the speed of sound. I'd love to measure the speed of light here. I was all set to do it and I was thinking, "Aw man," I was just going to impose upon the powers that be, and measure the speed of light. And I'm all set to do it. I'm all set to do it, but then it turns out that to set up here, you have like 10 minutes to set up! And there's no time to do it. So, next time, maybe, I'll measure the speed of light!
噢，在我把机器打开前， 我要向你们解释大约三周前我给课堂里讲的东西– 这是镜片的许多应用之一，就是通过镜片 来测量光速。 我在El Cerrito的学生通过我的帮忙 和一个非常陈旧的示波器的帮忙， 来测量光速。 我们得到的结果有25%的偏差。你们知道有多少八年级学生 做过光速测试？ 除此之外，我们还测量过音速。 我现在就要向你们展示测音速的实验。 当我决定给你们做这个实验的时候我很兴奋地在想，“老天” 我只是想不断加强这方面的能力， 来测量光速。 我很兴奋地想要做测光速的实验， 但是假如要把仪器准备好需要花费10分钟的时间！ 但现在不容许我花那么多时间。 所以下次也许我会向大家展示测光速的实验!
But meanwhile, let's measure the speed of sound! Well, the obvious way to measure the speed of sound is to bounce sound off something and look at the echo. But, probably -- one of my students, Ariel [unclear], said, "Could we measure the speed of light using the wave equation?" And all of you know the wave equation is the frequency

times the wavelength of any wave ... is a constant. When the frequency goes up, the wavelength comes down. Wavelength goes up, frequency goes down. So, if we have a wave here -- over here, that's what's interesting -- as the pitch goes up, things get closer, pitch goes down, things stretch out. Right? This is simple physics. All of you know this from eighth grade, remember? What they didn't tell you in physics -- in eighth-grade physics -- but they should have, and I wish they had, was that if you multiply the frequency times the wavelength of sound or light, you get a constant. And that constant is the speed of sound. So, in order to measure the speed of sound, all I've got to do is know its frequency. Well, that's easy. I've got a frequency counter right here. Set it up to around A, above A, above A. There's an A, more or less. Now, so I know the frequency. It's 1.76 kilohertz. I measure its wavelength. All I need now is to flip on another beam, and the bottom beam is me talking, right? So anytime I talk, you'd see it on the screen. I'll put it over here, and as I move this away from the source, you'll notice the spiral. The slinky moves. We're going through different nodes of the wave, coming out this way. Those of you who are physicists, I hear you rolling your eyes, but bear with me. (Laughter)
不过现在，我们来测音速吧！ 测量音速最简单的方法 就是让声波反弹然后测量回声的时间。 然后我的一个学生，Ariel，说， “我们能不能通过波的定理公式来测量光速？ ” 你们都知道波的定理公式是： 频率乘以任何波的波长… 是一个常量。当频率变大， 波长减小。当波长增大 频率变小。所以我们这里有一个波– 看这里，这是一个很有趣的现象– 当音频变高时，波跟波之间的距离变小 当音频变低时，波跟波之间的距离拉大了。 这是最简单的物理学，不是吗？ 你们所有人在八年级的时候就学过了，记不记得？ 但是他们在八年级物理课上没有告诉你的是 （他们应该告诉你的，我希望他们告诉你） 当你将频率乘以声音或者 光的波长，你将得到一个常量。 而这个常量就是音速。 所以为了测量音速， 我只要知道频率就可以了。这是非常简单的。 我这里有一个频率测量仪。 将它设置到大致在“A”这里。 现在我就知道它的频率了。 是1.76千赫兹。我现在测量它的波长。 我只要在示波器上打开另一个输入端， 就是底下的那个输入端，对吗？ 所以每次我说话的时候，你可以在屏幕上看见我的声波。 我将它放在这里，然后当我将它从声源那里移开时， 你会注意到波会螺旋形地展开。 这样，贴身移动。我们正在经过波的不同质点， 从这里经过。 对于在座的物理学家们，我知道你们感到很无聊， 但你们也就忍一忍吧。（众笑）
To measure the wavelength, all I need to do is measure the distance from here -- one full wave -- over to here. From here to here is the wavelength of sound. So, I'll put a measuring tape here, measuring tape here, move it back over to here. I've moved the microphone 20 centimeters. 0.2 meters from here, back to here, 20 centimeters. OK, let's go back to Mr. Elmo. And we'll say the frequency is 1.76 kilohertz, or 1760. The wavelength was 0.2 meters. Let's figure out what this is. (Laughter) (Applause) 1.76 times 0.2 over here is 352 meters per second. If you look it up in the book, it's really 343. But, here with kludgy material, and lousy drink -- we've been able to measure the speed of sound to -- not bad. Pretty good.
要测量波长， 我只要测量从这里 到这里，一整段波的长度。 从这里到这里就是声波的波长。 然后，我在这里有一把卷尺，从这里，然后移到这里。 我大概将麦克风移动了20厘米。 也就是0.2米。 然后我们回到Elmo先生这里 我们说频率是1.76千赫，或者1760赫兹。 波长是0.2米。 （用计算尺计算）我们来看看结果是什么。 （众笑+鼓掌） 1.76乘以0.2得到的是每秒352米。 假如你在书上去查音速的理论，它的值是343米/秒。 尽管我

们这里受到陈旧设备以及难喝饮料的影响— 我们还是能够比较精确地测量 音速了。不坏。
All of which comes to what I wanted to say. Go back to this picture of me a million years ago. It was 1971, the Vietnam War was going on, and I'm like, "Oh my God!" I'm studying physics: Landau, Lipschitz, Resnick and Halliday. I'm going home for a midterm. A riot's going on on campus. There's a riot! Hey, Elmo's done: off. There's a riot going on on campus, and the police are chasing me, right? I'm walking across campus. Cop comes and looks at me and says, "You! You're a student." Pulls out a gun. Goes boom! And a tear gas canister the size of a Pepsi can goes by my head. Whoosh! I get a breath of tear gas and I can't breathe. This cop comes after me with a rifle. He wants to clunk me over the head! I'm saying, "I got to clear out of here!" I go running across campus quick as I can. I duck into Hayes Hall. It's one of these bell-tower buildings. The cop's chasing me. Chasing me up the first floor, second floor, third floor. Chases me into this room. The entranceway to the bell tower. I slam the door behind me, climb up, go past this place where I see a pendulum ticking. And I'm thinking, "Oh yeah, the square root of the length is proportional to its period." (Laughter)
这一切归总到我想说的。 回到那幅很久远的照片。 那是1971年，当时还在打越南战争 我的反应是，“天哪” 我在攻读物理：朗道（Landau），Lipschitz，Resnick和Halliday。 那天我在期中考试结束后回家的路上，遭遇到了校园暴乱。 那是一个暴乱！ 噢，Elmo的事情已经结束了，关掉。 那是一个在校园里的暴乱， 然后警察在追捕我， 我在校园里走。警察过来看到我说 “你！你是个学生。” 他抽出一把枪。“砰”地一声！ 一个可乐罐大小的催泪弹擦着我的头皮飞过。 我吸到一口催泪瓦斯然后我不能呼吸。 那个警察拿着一把来福枪来追我。 他想要用枪柄砸我的头！ 我当时就想：“我一定要逃出去！” 我一路飞奔穿过整个校园。藏到Hayes楼里 Hayes楼是学校里几个钟楼之一。 那个警察在追我。 从一楼追到二楼，三楼。 将我逼到一间房间里。 那间房间通向钟塔的门口 我将房间的门关紧，顺着钟塔向上爬， 一直爬到钟摆哪里。 我忽然想到，对了， 摆绳长度的平方根和钟摆的周期是成正比的。（众笑）
I keep climbing up, go back. I go to a place where a dowel splits off. There's a clock, clock, clock, clock. The time's going backwards because I'm inside of it. I'm thinking of Lorenz contractions and Einsteinian relativity. I climb up, and there's this place, way in the back, that you climb up this wooden ladder. I pop up the top, and there's a cupola. A dome, one of these ten-foot domes. I'm looking out and I'm seeing the cops bashing students' heads, shooting tear gas, and watching students throwing bricks. And I'm asking, "What am I doing here? Why am I here?" Then I remember what my English teacher in high school said. Namely, that when they cast bells, they write inscriptions on them. So, I wipe the pigeon manure off one of the bells, and I look at it. I'm asking myself, "Why am I here?"
我继续往上爬，又倒退下来。 我爬到钟顶端定位梢分开的地方。 那里就是一个巨大的钟。 时间是对我来说是倒着走的因为我在钟的里面。 我的脑海里浮现出洛仑兹收缩和爱因斯坦相对论。 我继续向上爬，在钟的很背后， 有一把木梯。 我从钟的顶端爬出，那是一个圆顶的顶篷。 一个十尺高的圆顶。 我从那里向外看，看到警察们猛击学生们的头部， 放射催泪弹，然后学生们以扔砖块回击。 我扪心自问，我在这里干什么？我为什么要在这里？ 然后我回想到我高中英语老师说的话。 也就是人们在浇铸钟铃的时候， 会在钟上写字。 于是我把鸽子屎从钟上抹掉，然后看着钟 我在问自己，我来到这个世界的意义是什么？

So, at this time, I'd like to tell you the words inscribed upon the Hayes Hall tower bells: "All truth is one. In this light, may science and religion endeavor here for the steady evolution of mankind, from darkness to light, from narrowness to broad-mindedness, from prejudice to tolerance. It is the voice of life, which calls us to come and learn." Thank you very much.
所以在这里我要告诉你在Hayes钟楼上 的钟上写着： 万相归一。 在这道光芒下，愿科学与宗教为了人类稳定的进化而协力， 让人类自黑暗走向光明， 自偏见走向宽容，自狭隘走向开放。 这是生命的声音，呼唤我们前来，在此学习。 谢谢大家。