

Good morning and thank you for inviting me here today. I'm much honored to be allowed to talk to a group of students of this caliber.

Mrs. Hoyt, the best math teacher I ever had, invited me here. Having her do it was a smart move for this school, because in seventh and eighth grade, we were well-trained to OBEY MRS. HOYT. So when she called me and asked if I'd like to come speak to you today, my strong impulse was to say "Yes ma'am."

I was thinking about things I remember about Shawnee Country Day School while writing this. I remember my graduating class of eight people, a little different from what we see right here. I remember learning Latin from Miss Ahrens, and my brother trying to translate something, and ending up calling something a "ferocious blue tree". I remember participating in History Day...which was long enough ago that you can now do a History Day presentation on me doing History Day. I remember the Mathcounts and KATM competitions.

I also have a distinct memory of the older students, probably the seventh and eighth graders, putting on an elaborate musical number which ended with them hitting the teachers in the face with pies. Now, these days, at some schools, that would get you arrested. But one of the special things about this school was that it led to the teachers putting on an *even better* musical number, and eventually throwing the pies right back at the students. It was impressive that that was their response.

I also remember a trip my class went on, it must have been in seventh or eighth grade. We were camping, and being an annoyingly inquisitive person, I asked Mrs. Pakaluk (the science teacher) why hot things glow. And she answered me. I didn't have the background I would have needed to really understand it, but she told me anyway. She had enough respect for her students to actually answer a difficult question, even when it might be a bit confusing.

She explained how atoms absorb energy, which allows their electrons to move to higher orbitals, and as those electrons fall back to lower orbitals, they emit light. At the time, I didn't really understand it, but I remembered it. When I learned more chemistry and physics in college, I remembered what she had said. Knowing that she had told me the truth had a profound effect on me. It shaped many of my deepest ideas about being a teacher.

She taught me that the world is worth understanding. There are all sorts of strange and wonderful things in the world, and it's not at all obvious how some of them work, but there is a comprehensible reason behind what we see, and it's worth your time to figure it out. It's not just deeply satisfying; it's the basis for a scientific worldview, and thus much of modern civilization.

And what I realized is that each of us is carrying around a little model of the universe. It's an incredibly complicated little gizmo, full of really cool doodads and thingamajigs, and it's how we think everything works.

But you all know this already. You've been lucky enough to spend several years in the care of individuals dedicated to the idea that the world can be understood, that your minds are capable of holding a model of the world. They've sketched the framework of that model. You, by dedicated effort, and watching, and learning, and doing homework, are starting to build the gears and motors.

Now, you're on the edge of a time in your life when you're going to start comparing models with other people. Because when we talk to people about ideas, what we're really doing is comparing our models. You go up to someone and say "Hey, do you see how I've got this little thing here connected to that thing there? Isn't that cool?" You're about to step out into a world full of such an incredible diversity of ideas, theories, and crackpot notions—some *very* interesting models of the world--that it will make you feel like your head is going to explode. For example—did you know that there is such a thing as "exploding head syndrome"? Look it up. There are worse places to start.

Let me tell you about some of those models.

Some of these new models are going to be confusing.

For example—I went to UC Santa Cruz, which I can assure you is full of ideas I had NEVER imagined in Topeka. On my first day there, I went by the bookstore. Next to that was a student-run restaurant called the Whole Earth Cafe. Out front, they had a banner advertising the special of the day: Organic Tofu Scramble. Now, I had taken chemistry, so I got out my model, pushed the button which was labeled "organic", turned the crank, and what came out was the definition "containing carbon". Thus, my first thought was "As opposed to what? Silicon-based

tofu?” Clearly, my model was incomplete. I had to work this whole new meaning of the word “organic” into my model, along with the entire notion of pesticide-free farming, farm workers’ rights, health, evolution of resistance...you get the idea.

Some of these models will be inspiring, mind-expanding—even world-altering. You’re going to learn about causes and struggles for justice you never knew about. You’ll learn about old struggles that are still going on today. You’ll learn ten thousand ways that people want to save the world. These new things can light you on fire, and make you see the world in whole new ways. Your model becomes ablaze, because now you see how it could be made into a BETTER model. You look at the world, and say “I don’t want my model to be like the world—I want the world to be like my model!” That’s a good thing, mostly. Parents, let me warn you, though—when I came home after my first year at college, I was full of new ideas, my model was ablaze—and I had a divine mission to explain to my parents, in exacting detail, the depths of their ignorance about the true functioning of the world.

Yeah, I was pretty much an insufferable doofus that summer.

Some of the models won’t make any sense at all. These are the things that make you go “huh?” Sometimes, someone will come up to you and say “Hey, check out my model. This is the way the universe *really* works!” and you’ll reply “dude, your model has smoke coming out of the end. I don’t think it’s supposed to do that”.

Some of them are, in fact, wrong.

I love diversity of opinion, but it’s simply not true that all models are equally valid. You’re going to be told a thousand things about how the world works, many of which are horse pucky. Here’s a very important point: *you don’t have to believe everything anybody tells you.* In fact, it’s very important that you don’t.

So what the heck do we do with all of these new things? How do we know how to build our model?

Have faith.

Have faith in reason.

Have faith *that the world can be understood. It takes time, and patience, and thought, and disciplined inquiry, but you can make a model which is a more accurate picture of the world.*

And that’s a wonderful thing to hold on to, it’s a great gift. It’s the best thing I can try to give you today. But...

You may have noticed that many smart and wise people have very different models of the world. Those can be big differences. It would be awfully convenient to be able to say “Well, I thought, and I learned, and I watched, and I was patient. My model must be the right one.”

Many of those people are also patient, diligent watchers and thinkers. They think their model is right, too. You look at their models and say “Wait, you put tab A into slot C? And you’ve got your doohickey attached to the thingy-mabob? That can’t be right!” And they say the same thing about yours. You both had the same picture on the box to work from—the universe—and you both thought, and learned, and watched—and you came up with models which look awfully different. That can be pretty disturbing. So what can you do? How do you deal with that?

Well, here’s one way. And a hint: *it’s the wrong one.*

There are so many perspectives that things can become confusing. You’ll have your basic assumptions about the world challenged. When we’re confused and unsettled, we tend to retreat, and surround ourselves with what is comfortable and familiar. That’s understandable, but it’s dangerous. **It’s so easy right now to surround ourselves whose models look just like ours—who say what we want to hear.** We choose our news feeds, we choose who to follow on Twitter, we choose our Google+ Circles, and pretty soon all the models we see look just like ours. We never see a different model. And since all the models we see look like ours, we conclude that our model is right, and accurate, and—worst of all—complete.

Once you conclude that you don’t need to learn anything else, you’ve given up on being a good person to talk to.

We even hear that we need to avoid people who see things differently than we do. They’re dangerous. They could corrupt us! You must *never* attach the doohickey to the thingamabob!.

As I said, you don't have to believe something just because someone else believes it. You don't have to copy every model you see. But it's also very important to understand *why* other people believe what they believe. You can understand their model without copying it.

They sure think they're right. And sometimes they are. So how do you know what's right?

Watch. Think. Reason. **Listen.**

It seems to me that there has been a decline in the art of persuasion. So much of the interaction we see between people with different views amounts to shouting, even primate displays. When was the last time you changed your mind because someone yelled their opinion louder than you yelled yours?

And no, parents explaining why you need to be home doesn't count. Plus, I doubt they convinced you.

But if you understand why *you* think what you think, and you have enough respect for your opponent to understand some of the reasons behind *their* perspective, then a whole new avenue opens up. You can have productive discussion. You might persuade someone. You might be persuaded yourself. But the point is that you both end up with a better model. *That's the* nice thing about good discussion—whether you persuade them, you are persuaded by them, or you agree to disagree—you both win.

The point isn't to prove that you were right—the point is to *become more* right. And without understanding the other, we can never persuade—we can only bully.

So if it's worth making a good model, but people with good intentions come up with very different models, how do we make our model as accurate as we can?

Well, here's the first hard part. **We seek out people who disagree with us.** We talk to them, but more importantly, we listen. We think. We reason. We persuade. We are willing to be persuaded. And always, always, our goal is truth—a better model.

None of us has a model which is always and obviously perfect. There is no one system of government, no one philosophy, and no one religion which will make the people of the world wise, prosperous, and compassionate. What will save us is for every one of us to wake up each day unafraid of examining other models--listening to those who disagree with us. When we can all do that, we will all be free.

The world is worth trying to understand.

Only by learning new things can we understand it.

Those new things can best be learned by understanding perspectives other than our own.

You're about to find that there are more things in heaven and earth than are dreamt of in your philosophy. More facts, more ways of thinking, more ideas. Not all of them are right.

Seek out people who are wise, but whose models don't look anything like yours. Those are exactly the people you need to talk to. You don't have to agree with them, but you need to discuss. Listen. Learn. Persuade. Be persuaded. When we can all do that, we'll all be free.