The Maverick Minute:
Christopher Moore, Ph.D.

Description: Chancellor Jeffrey P. Gold, M.D., and Professor Moore discuss "Experience Chemistry," a climate-focused science curriculum he helped develop that was recently adopted by Millard Public Schools.

Transcript:

Gold: Hello. I'm Jeff Gold and thank you so much for joining us today for this Maverick Minute. We have a very special guest. We have Dr. Chris Moore, who is the George F. Haddox Community Chair in Physical Science and, of course, professor of physics. Chris, thanks so much for joining us today.

Moore: Thank you, Dr. Gold. Thank you for having me.

Gold: So, the subject of our interest and my interest is to learn more about this new curriculum that you've developed. It's really exciting, particularly as we continue to grow our breadth and depth of experience in STEM education, and when I first heard about it, it was really unique, so why don't you tell me and tell our audience a little bit about how you got the idea and how it works.

Moore: So, we have a new high school curriculum called "Experience Chemistry" that is based around the concept of phenomena and students doing the chemistry. And so, that's really where the name "Experience Chemistry" comes from because we're trying to build experiences for the students.

Gold: Is this a name you invented?

Moore: No, no, this is not something I necessarily invented, right, but it's a collaborative, it's a collaboration with my colleagues and co-authors and the publishing company of course. But that is the foundation, right? Because this curriculum is built off of a strong foundation of research in how students learn and the best, high-impact practices for teaching chemistry to secondary students. And so one of the ways that we do that is engaging student sin phenomena that they're very interested in. And so, for example, high school students – about 50% of high school students – say that they are highly motivated by concepts and by climate change and what's going on with climate all over our world, right? And so they're very much interested in these topics and so we've weaved the climate science within the curriculum and so we use phenomena such as bleaching coral reefs and dying coral reefs and ocean acidification as the phenomena in which students learn chemistry such as acids and bases.

Gold: And where have you tried this? In other words, where in our community would we have the initial experience?

Moore: Yeah, so actually, beginning this year, Millard Public Schools, right outside in West Omaha here, have adopted "Experience Chemistry" and our first big market for "Experience Chemistry" has been in California. So, we developed a California version based off of their standards, which are very much aligned with the Next Generation Science Standards, and we are right now number one in that market in the state of California. So we have one of the – the number one chemistry high school curriculum in California.

Gold: And what's the outcome of that been like? What do the students say when you talk to them or the faculty in the high schools in California or in Millard or wherever?

Moore: Yeah, so the feedback we've been getting from teachers and from students has been phenomenal, and it's one of the reasons I think we've done so well with this curriculum. And a lot of that comes because of the way we've structured the curriculum. And our focus on discovery as opposed to sort of the traditional you know, you hear a thing and then you verify the thing in the lab. We actually start off all of our experiences –

Gold: And add in a factor of rote memorization that goes into that.

Moore: Yes. Yes. And so, rather than memorizing the Periodic Table –

Gold: Right, I remember those days.

More: -- we want students to construct explanations, right? We want them to be able to analyze and look at data. We want them to be able to look at the intergovernmental panel on climate change data and actually be able to understand it. And create their own stories based off of that. And think of their own solutions in how that might, how we might approach these challenges and problems.

Gold: Well, I just want to take this opportunity to thank you and congratulate you on all of this work. It is, first of all, really critically important because STEM education many, many think is one of the most important pillars and foundations for the future. And to breathe life into it, which it sounds like what you've done is truly remarkable. And hopefully we'll continue to see more and more interest in the STEM fields as young women and young men can be exposed to this curriculum, so congratulations and thanks for being with us today.

Moore: Thank you. Thank you for having me.

Gold: And thank you so much for being with us today on this very special Maverick Minute.