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SCIENCE

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utterly change the world," he said.

And "change the world" is Nye's mantra. In fact, it was the first line of a document he titled "Rules of the Road" for his TV crew.

Inspiring a generation of innovators can be challenging, though, but Nye has a few ideas on how government, educators, students and citizens can do just that.

"If we had a modest increase in the investment in NASA, we would have these innovations without having to run around all day yelling, 'STEM, STEM, STEM, STEM,' which is now a word, I guess," Nye said.

The acronym refers to the subjects of science, technology, engineering and mathematics, which are all being pushed in American schools in order to increase competitiveness in tech-based development and careers.

To ensure there are plenty of scientists, engineers and innovators for the technology-paved future, Nye said it's important to integrate science, art and music into schools' curricula, rather than having them off to the side.

Another way to encourage students in science

actually does not hinge on science, Nye said, but rather on algebra.

"So, people who embrace algebra apparently have an easier time, or are more inclined to think abstractly about all sorts of other things," he said.

He suggests schools begin teaching algebra sooner, such as in fourth grade, rather than springing it on students once they reach seventh grade.

In the 2012 Program for International Student Assessment report, U.S. teen students dropped to 24th place in science — which could impede the nation's future role as a leader in space exploration.

A majority of Americans — 58 percent — polled in a 2011 study by the Pew Research Center believe it is imperative that the United States remain on top in space, and Nye agrees.

"There are two deep questions that all of us have asked at some point in our lives ... Where did we come from? Are we alone? And if you want to answer those two questions, you have to explore space," he said. "Space exploration brings out the best in us."

Nye serves as the CEO of the Planetary Society, a nonprofit group of people who seek to inspire others to get involved in space exploration.

IFYOUGO

>> Doors open at 7 p.m. for UTPA students, faculty and staff (must have valid UTPA ID); 7:20 p.m. for general public

>> The University of Texas-Pan American Fieldhouse, 1201 W. University Drive, Edinburg

>> Free event

>> Overflow seating will be held in the Student Union Theater

>> Watch live online at utpa.edu/live

>> For more information or special accommodations, call (956) 665-7989.

"We at the Planetary Society believe that the most cost-effective way to have a modest increase in the space exploration budget that would lead to innovation is to invest in planetary science," he said.

Nye bemoans the idea that NASA has stalled.

"People think the space program is canceled, meanwhile we're landing a freakin' rover on Mars, lowered onto its surface by a crane powered by rockets," he said.

There's also a mission on the way to Jupiter called Juno, and by spring or sum-

mer in 2015, we'll get pictures of Pluto.

"We talk about NASA all the time just not being that good at (public relations)," he said. "They're OK, and they're getting better."

Although we don't fixate on every launch of every probe or every rocket sent to space, there's plenty of exploration going on outside of Earth's atmosphere.

"We do have humans in space. You can even ask the administrator of NASA, 'Who's on the international space station right now?' And he will not be able to tell you. He'll tell you two out of the six," Nye said. "Because it is no longer 'to boldly go where no man has gone before'; now it's 'to timidly go where 600 people have already been.'"

However, America watched with excitement and curiosity the past few years as the Mars rover rolled across the red planet, transmitting images of terrain and horizons.

"People have this romantic notion of Mars that I disagree with completely," Nye said.

The only planet Nye has a romantic notion of is a bit closer than Mars.

"Well, Earth," he said. "It's my favorite. No, I love it here. I grew up here; all my friends are here. It's ideal for guys like

me, really."

The idea of setting up bases on Mars and having a sort of 21st century "gold rush," Nye said, isn't realistic. He does, though, see the importance of sending humans to explore and make new discoveries.

"Our very best probes, our very best robots, our very best robot-probe drivers, our very best scientists directing the robot drivers, what those people can do in a week, it is estimated that a human geologist or explorer could do in about a minute," he said.

And if evidence of life were discovered on Mars, what then?

It "would utterly change the world," Nye said. "It would change the world in the same way Galileo, Copernicus and Newton changed the world."

SPACEX

Recently, space exploration has become an important topic of conversation in the Rio Grande Valley since SpaceX showed interest in building a rocket launch pad in Cameron County. Other locations being considered include Florida, Georgia and Puerto Rico.

"We love SpaceX," Nye said.

He noted that Elon Musk, the CEO of SpaceX and Tesla Motors, used to be on the board of directors for

the Planetary Society, but he had to recuse himself as his company became more successful and influential, Nye said.

"It is the way of the future," Nye said of privatized space exploration. "But let us keep in mind that SpaceX has received at least \$500 million from NASA to develop this rocket, and by some estimates \$850 million if you add it all up. And that's not a bad thing, it's just a thing."

However, SpaceX hasn't landed on Mars, Nye said. Not yet, anyway. NASA has decades of experience under its belt. And, as Nye pointed out, humans have a history of leaning on the government to fund research and exploration first.

"The East India Company was not formed until after someone had explored India on the government's dime, or penny, or shilling," Nye said. The "transcontinental railroad wasn't built until after Louis and Clark went across the (United States) mapping it. ... Believe me, if SpaceX gets its Red Dragon spacecraft on the surface of Mars, they will be using maps and data produced by NASA — not by an internal Mars mapping division. It's just the way of history."

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