

Interview Assessment #1

Name: Dr. Ryan Ewing

Profession: Associate Professor of Geology and Geophysics

Location: Texas A&M University--- College Station, TX

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Dr. Ryan Ewing is currently the associate professor of geology and geophysics at Texas A&M University. Dr. Ewing focuses his research on the evolution of landscapes and sedimentary record. Within this, he is working on identifying patterns in wind-blown landforms and how this correlates with climate data. Dr. Ewing is also researching about bed form self- organization in rocks, and how wind-blown systems have played a crucial role in climate transitions on Earth. In addition to this, he is also the Service Properties Scientist and Sedimentologist for the Curiosity Rover Mission. The rover is currently on Mars in the Gale Crater.

Prior to going to the Johnson Space Center, in March, I wasn't completely aware of the amount of geology I needed to know to fully understand Mars. However, after I worked at JSC, I realized that I needed to have a strong background in geology. This is why I reached out to Dr. Ryan Ewing. His expertise on geology and his experience with the Curiosity Rover allowed him to give me the guidance I needed for the geology path of astrobiology.

Dr. Ryan Ewing and I spent a considerable time talking about college and what he, as a professor, expects from his students. I really wanted to discuss with him about

this topic because I am going to be a college student next year and many individuals have told me that the way you study and behave in college is vastly different from high school. Dr. Ewing told me that the key to success for a college student is time management. He discussed how I should be socially strong in college but when the time comes to study, I have to put my full focus into it. Dr. Ewing then told me his basic expectations for his students. He never likes to see a student come in late or unprepared. I also asked him what specific geology classes I should take in order to get a good background in geology for astrobiology. Dr. Ewing stated that I would have to take classes on mineralogy, petrology, geochemistry, and sedimentology. All of his advice and expectations provided me with a good insight on how I should act when I go to college.

After this Dr. Ewing discussed his journey to Mars. He told me how he spent a large part of his childhood in the outdoors and that is how he got connected with science. A junior in college, Dr. Ryan Ewing discovered his passion to learn about Mars and started his internship at the Lunar Planetary Institute his senior year of college. It was here where his passion really grew. Dr. Ewing went on to be a professor at the University of Alabama and then recently Texas A&M. His dream of exploring Mars came true when he landed a position on the Curiosity Rover Team.

I was particularly interested with Dr. Ewing's work on Curiosity. I was very curious of how he got the opportunity to work on the rover. He told me that he submitted a proposal and based off of his credentials, he got the job. I also wanted to know what the coolest thing he found with the rover was. Dr. Ewing discussed how, through Curiosity, they found that the sand dunes on Mars have two layers. This is

significant because all the sand dunes on Earth have only one layer. This is also showed him that Mars is geologically different from Earth and this could play an impact on how different martian life would be from Earth.

We also discussed about the importance of a manned mission to Mars. Even though it will be a long time before we get humans on Mars, it is extremely important that we are successful because, technically, the survival of Homo sapiens lies in the Mars mission.

I also asked Dr. Ryan Ewing the three things he would do if he was one of the astronauts to go to Mars. The very first thing he said is that he would measure the wind and velocity profile of the sand that was blowing. The second thing he would want to do is take some sample for geochemistry analysis, and last but not the least, he would just simply observe the geological activity that happens on the red planet. His response to this question showed me how passionate he was when it came to learning more about Mars.

Dr. Ryan Ewing is also currently doing a lot of research on one of Saturn's moons, Titan. This moon is one of the few places in our solar system to be a candidate for fostering life and Dr. Ewing is looking into the sand dunes on the moon. When I asked him why he was so interested in sand dunes, he replied by saying that this landform is present on many planets and will allow us to compare and contrast our planet to other terrestrial bodies.

Overall, I learned a lot from this interview. Dr. Ryan Ewing, more importantly, sparked my own interest in geology. After speaking with him many times, I started reading more and more about geology's application to Mars and I am fascinated each

time. It is individuals like Dr. Ewing that make me hopeful for the future of space exploration.