Math alum works for NASA's space flight safety

By Sarah Vickery, College of Letters & Science

When he was younger, Jim Stott wanted to be an astronaut when he grew up. He hasn’t made it into space (yet), but he’s pretty darn close.

Stott is the Chief Safety and Mission Assurance Officer at NASA’s Marshall Space Flight Center in Huntsville, Ala. At its core, his job is to ensure that the people and equipment NASA sends into space depart from and return to Earth safely.

“My responsibility is having reliability, quality, and safety,” Stott said. “Reliability meaning making sure we have the best parts, watching out for counterfeit vendors. … Quality is making sure we have all the right quality processes in place – quality control, quality assurance. It’s making sure everything goes smoothly in terms of manufacturing. Safety – that’s system redundancy, making sure that we have redundant systems so it can tolerate single faults.”

Ensuring those three things requires several degrees and a list of credentials. Stott began his education at UWM. It was close to his hometown of Brookfield, and best of all, it had a Physics and Applied Mathematics major. Stott graduated in 1997 with his Bachelor of Science, traveled and married, and then returned to UWM to earn a Master’s degree in Mathematics in 2000.

The next stop was Alabama. Stott joined Hernandez Engineering, which at the time was a subcontractor for NASA. Hernandez paid for Stott’s second Master’s in Electrical Engineering from the University of AlabamaHuntsville, which he used to work for the Department of Defense. He wasn’t planning to go for a PhD, but with the promise from his professors that it would UWM alumnus Jim Stott is working on the RL10 Engine that will be used on the SLS Upper Stage. The project is part of an effort to design a be “easy” (it wasn’t, Stott said with a heavy lift vehicle for space travel. Photo courtesy of Jim Stott. laugh), he earned a doctorate in Electrical Engineering.

From there, it was on to NASA. Stott joined when the Bush Administration was pushing the Constellation program, designed to replace the space shuttle.

“The Obama administration canceled that. They really wanted to focus on the commercial stuff,” Stott said. “I’ve got a lot of colleagues that work with Space X or Boeing and other private space companies. Also, we were tasked to design a heavy lift vehicle that would allow us the capability to go to Mars and the moon. That’s currently ongoing.”

At least, it is for now. NASA answers to the President, and the new administration may have different objectives for Stott and his fellow engineers.

“The programs that we have span administrations,” he said. “It lasts a minimum of 10 years to take something from design to building it. There’s always a threat, when there’s a new administration coming in, that they will cancel the program. … It’s very frustrating. I think the folks at NASA who are wise enough to know this stuff try to get the hardware built. We have a lot of hardware built, so hopefully [we can say], we’re almost done! Just let us get this done.”

Stott would especially like to see the heavy lift vehicle be completed because he’d like to see the United States visit the moon again. Not only does space travel increase the country’s international prestige, but it allows scientists to do research that can
India's dye run-off

only be conducted in zero-gravity. Stott points to medicines that can be developed without the hindrance of gravity, or the presence of rare chemicals, like Helium-3, that can be harvested or studied in space.

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Along with this growth-inhibiting effect, biomagnification is a main concern. Animals eat plants exposed to contaminated water and soil.

Humans eat those animals and plants, and the human body excels at storing chemicals. The effects of heavy metals on human systems are not as widely studied in India as in the United States, where lead poisoning has had a devastating effect on urban families.

Ghosh Roy returned to Milwaukee after completing the field research, and her data analysis continues. Her dissertation research focuses on ecological contamination issues in Wisconsin. She plans on returning to India as a professor and soil scientist, and she hopes to improve workplace safety and environmental policy.

Planetarium Spotlight

The Muslim Student Association and the Milwaukee Muslim Women's Coalition co-hosted a great celebration in the UWM Planetarium on Thursday, March 9. Exploring Islam Under the Stars was the final event in a series about Islam organized by the Muslim Student Association and sponsored by UWM Sociocultural Programming.

The celebration focused on Islamic art and architecture, scientific contributions in astronomy, and the faces and languages of Muslim people around the world. The event also included colorful food, gorgeous music, and constellations in the night sky from two different locations on Earth: northern Kazakhstan and Indonesia. Over 160 community members (two sold out shows) were dazzled by the beauty of the cosmos and Islamic culture.

(Left) From left to right, students Mahbbat Ali, Omar Saleh, Tobi Amida, and Islam Salhab wait for the Planetarium show to start at the "Exploring Islam Under the Stars" event in the planetarium to view constellations normally seen over Kazakhstan and Indonesia. Photos courtesy of the UWM Planetarium.

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