

Kristina LEMMER

By Jeff Mortimer

In many ways, communication is the common denominator in Kristina Lemmer's academic career.

As a doctoral student in aerospace engineering, her dissertation explores ways to end the communication blackout problem that afflicts spacecraft re-entering the earth's atmosphere.

Lemmer's academic achievements, combined with her active community service work, earned her a Susan Lipschutz award in 2007. Her duties for the Space Grant Consortium were particularly demanding. Among other tasks, Lemmer had to train instructors, make schedules, arrange for guest lecturers and set up classrooms. "All this has to be organized," she understates. "It was a

communications infrastructure on spacecraft could still be used.

"Most of my research so far has been to create the device that will simulate a reentry plasma," she says. "Next, I'm going to try to use this amelioration system that we've developed, basically a system to lower the plasma density so a communications signal can pass through it."

Lemmer credits her seventh grade science teacher and her mother, a teacher herself, as her mentors and role models prior to college. Her father played a big part, too. "My dad always liked space stuff," she says, "so when I was a kid he took me to the Kennedy Space Center a couple of times. I was just hooked after that."

Not many girls at that time were part of U-M's program. "I was pretty much on my own when I got here," she says. But she had what she calls a "fantastic" advisor in Alec Gallimore, Professor of Aerospace Engineering and Rackham's Associate Dean for Academic Programs and Initiatives. Now her PhD advisor, he has mentored Lemmer throughout her time at Michigan and shares her commitment to make the field more accessible to women.

"One thing that was sort of big," Lemmer says, "is that last year we got our first two female faculty members in our program. Before that, we'd bring in female recruits and they'd not see any familiar faces on the faculty. Part of the problem is finding female faculty in this field. It's a slow process but it's coming around."

It's coming around, as it must, from the ground up, thanks to people like Lemmer talking to Girl Scout troops about careers in engineering and giving wind tunnel demonstrations to middle and high school students.

And she's only just begun. "I want to be a professor and build up my own research laboratory," she says, "but I would like to be at a smaller university with a big emphasis on teaching." ■

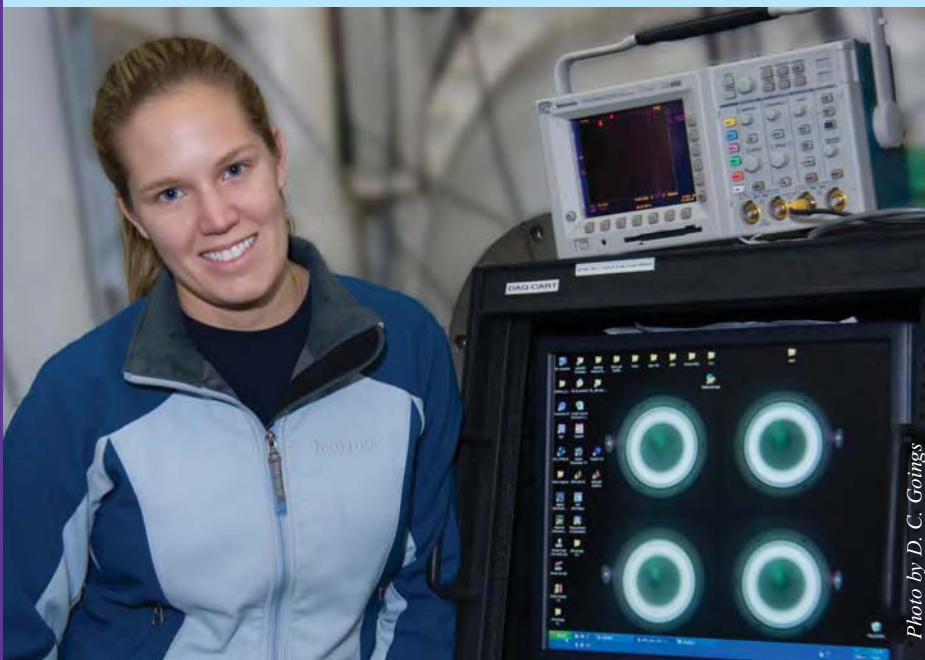


Photo by D. C. Goings

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As an undergraduate at the University of Michigan, she communicated the allure of science to K-12 students as an instructor and eventually as the chief student coordinator for the Michigan Space Grant Consortium, a NASA-funded outreach program.

And earlier in her graduate career, she was part of a group that testified before Congress in favor of continued funding for the national consortium that includes Michigan, aiming to communicate the importance of such ventures.

very rewarding experience, and I had a lot of fun doing it, but I haven't had a lot of time recently."

Not when there's that bump that needs fixing on the re-entry road. Due to the high temperatures that occur during re-entry, a plasma forms around the capsule that cuts off communications. Lemmer's work seeks to manipulate the plasma in the area of the communications antenna so that the density there is lower. By doing this, the cutoff frequency of the plasma around the antenna will be lowered and the current