

**Oregon Institute of Technology**  
Klamath Falls, OR

**Mechanical and Manufacturing  
Engineering**  
Double BS, June 2005

**NASA Academy Research Project:  
Searching for Life Underground:  
Experiments with Drilling in Mars Analog  
Terrains**

Principal Investigator: Dr. Carol R. Stoker

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**Education and Experience:**

Some of my most impressionable memories are of watching shuttle launches and visiting space observatories. These activities and my love for math and science inspired me to focus my life and education towards my goal of becoming a NASA mission specialist. After completing my dual BS in Mechanical and Manufacturing Engineering, I plan to obtain an MS in Aerospace and Astronomical Engineering, hopefully at Purdue.

As initial steps I have participated in many projects that will help me achieve my goals. The first was partaking as team member on the OIT NASA Science Team participating in the NASA Reduced Gravity Student Flight Opportunities Program. We conducted an experiment on thermocapillary bubble motion and the marenngoly effect in hypo-gravity on the KC-135. I was in charge of data collection and cinematography of the experiment on board the flight. I also helped design and manufacture the experimental apparatus. During my week visit at Johnson Space Center I toured the underwater astronaut training facility and mockups of the ISS and shuttle. Also, as part of the preflight training all flight crewmembers underwent hypoxia training in the hypobaric chamber. As a counselor for the OIT summer space camp for high schoolers, I directed one of the teams in developing an auxiliary experiment to fly on the KC-135. Currently, I am a member of the Mars Society and attended 2002 annual summer convention Boulder, Colorado. While at the conference I participated in many seminars and presented a paper on the properties and uses of aerogels for Mars exploration applications. The information presented was from my initial research done in preparation for developing an independent class on aerogel production.

My specific interest in the Experiments with Drilling in Mars Analog Terrains project comes from my deep belief that this preliminary remote exploration and search for life on Mars will be the necessary precursor to the next greatest accomplishment in the history of space exploration. The seminars that I attended at the convention prompted me to realize the need for extensive research in these areas prior to any manned mission.

My strong passion for creating innovative technology that will enhance the scientific community and my own understanding of space exploration drive me forward to find new and exciting projects to be involved with. In January 2004 I will be studying abroad for two terms in Melbourne, Australia and hope to find an internship for the summer. Presently, I have joined the background research team for the next reduced gravity research project proposal. Upon acceptance in the fall, our team will begin fabricating the experiment.

### **Extracurricular Interests:**

I am the diversity coordinator for ASME and participated in the Oral Guard completion at the 2002 Regional Student Conference. On top of school organized activities, I am extreme in sports, I do every adventurous activity one can do in the air, water or on land. I could tell stories for hours. Here is a list instead of my favorite dangers: Skydiving (A license pending -27 jumps and counting), SCUBA diving (advanced open water certified), snowboarding, spelunking, mountaineering, rock climbing (Sheldon High rock climbing team), white water rafting, Outdoor Program trip leader/participant, CPR and first aid certified. The less dangerous side of me enjoys all forms of dance including 6 years of experience in middle-eastern dance. In the spring of 2001, I taught a class in which students learned and performed middle-eastern dance along with sewing their own costumes.