“NASA Robotics...Using Robots to Explore the Universe”
Saturday, April 2, 2005

9:00 AM - 9:15 AM
Welcome, Introductions, Goals for the Symposium
Peg Steffen, NASA Explorer Schools Program Manager
Al Byers, Director Professional Programs and e-Learning, NSTA
Dr. Jennifer Rochlis, Human Factors and Robotics Engineer, NASA JSC
Dr. Brad Blue, Coordinator GEMS (Girls in Engineering, Mathematics, and Science)
Julie Ferriss, Curriculum Integration Coordinator, Edgewood Elementary-A
Science, Math, and Technology School, Osseo School District
Sheri Klug: Mars Education Program, Arizona State University
Flavio Mendez, Program Manager, NSTA
• College Credit forms
• Pre-evaluation forms
• Goals for the day

9:15 AM - 10:00 AM
Opening Activity: Exploration Mars! - The Value of a Common Language
Brad Blue and Julie Ferriss
Learning Outcome:
• The learner will discover the importance of a common language when working with others to find solutions to challenges and/or problems.

10:00 AM - 10:10 AM
Mid-morning Break

10:10 AM - 10:55 AM
Core Content Presentation 1: “NASA’s Robotics Technology”
Dr. Jennifer Rochlis
Learning Outcome:
• The learner will gain knowledge of the past, present and future of robotics technologies at NASA.

10:55 AM - 12:10 PM
Pedagogical Follow-up: “Exploration Mars! - Why Did It Do That? Beginning Lego Programming”
Brad Blue and Julie Ferriss
Learning Outcomes:
• The learner will observe and record the behavior of a robot and correlate that behavior with the iconic language of the ROBOLAB software.
• The learner will use the language of programming to communicate desired behaviors of the robot to others.
12:10 PM - 12:50 PM
Lunch Break

12:50 PM - 1:35 PM
Core Content Presentation 2: “Human and Robotics Operations for Surface Missions”
Dr. Jennifer Rochlis
Learning Outcomes:
• The learner will gain knowledge of the challenges of working on the surface of the moon and Mars.
• The learner will gain knowledge about how humans and robots will work together during future surface missions.

1:35 PM - 3:05 PM
Pedagogical Follow-up: “Exploration Mars: More Robotic Programming!”
Brad Blue and Julie Ferriss
Learning Outcome:
• Using previously acquired iconic language, learners will program a robot to perform specific tasks and functions in a simulated Mars mission setting.

3:05 PM - 3:15 PM
Mid-afternoon Break

3:15 PM - 4:30 PM
Pedagogical Follow-up: Mars Education Overview and Marsbound
Sheri Klug
Learning Outcomes:
• The learner will gain knowledge of the resources available from the NASA Mars Program.
• The learner will gain knowledge about methods of teaching science, mathematics, and technology using real-world space-science applications.

4:30 PM - 5:00 PM
Post-evaluation form
Perception Feedback Survey
Raffle for prizes
Flavio Mendez, NSTA
Standards Addressed:

Professional Development Standard B
   Knowledge of Science Teaching
      - Address teachers’ needs as learners and build on their current knowledge of science content, teaching, and learning.
      
      - Use inquiry, reflection, interpretation of research, modeling and guided practice to build understanding and skill in science teaching.

Content Standard A
   Abilities Necessary to do Scientific Inquiry
      - Use appropriate tools and techniques to gather, analyze, and interpret data.

Content Standard E
   Abilities of Technological Design
      - Communicate the process of technological design.

Content Standard F
   Science and Technology In Society
      - Science and technology have contributed enormously to economic growth and productivity among societies and groups within societies.