Bios for Ultimate Mars Challenge

Paula Apsell

Senior Executive Producer, NOVA,
and Director of the WGBH Science Unit

As Director of the WGBH Science Unit and Senior Executive Producer of the PBS science series NOVA, now in its 39th season, Paula S. Apsell has overseen the production of hundreds of acclaimed science documentaries, including such distinguished miniseries as *The Fabric of the Cosmos* with Brian Greene, *Making Stuff: Stronger, Smaller, Cleaner, Smarter*, hosted by *New York Times* technology reporter David Pogue, *Origins*, and *Evolution*. In 2005, Apsell introduced a spinoff in NOVA scienceNOW, a critically acclaimed science magazine series. Today, NOVA is the most watched primetime science series on American television and has won every major broadcasting award, including the Emmy, the Peabody, and the duPont-Columbia Gold Baton. Apsell has been recognized with numerous individual awards, including the New York Hall of Science's Distinguished Service Award for Public Understanding of Science and the Carl Sagan Award given by the Council of Scientific Society Presidents. She has served on several boards, including that of the Smithsonian's National Museum of Natural History and Brandeis University's Science Advisory Council. She is also a trustee of the International Documentary Association.

Rob Manning

Project Chief Engineer for the
Mars Science Laboratory Mission

Rob Manning is the Project Chief Engineer for the Mars Science Laboratory (MSL) mission: a new, ambitiously large rover named *Curiosity*, set to land on Mars on August 5, 2012.

Manning has been designing, testing and operating robotic spacecraft and rovers for over 30 years at Jet Propulsion Laboratory (JPL). His career has allowed him to live through some of JPL's most exciting and harrowing robotic moments.

Manning started out as an electronics engineer, designing and testing on-board computers for missions including Galileo to Jupiter, Magellan to Venus and the Cassini mission to Saturn. In the 1990s, he became the chief engineer for a project called Mars Pathfinder, which became the first to send a little rover (named Sojourner) to Mars. In the process, he learned from the past masters of the Apollo and Viking era what it took to safely land robots on another planet in an intricate process called "EDL" or Entry, Descent and Landing. Afterward he co-conspired the idea to modify Pathfinder and Sojourner to become the Spirit and Opportunity "Mars Exploration Rovers" or MER. He led the system engineering team for the two rovers as well as the Entry, Descent and Landing teams. After MER he became the Mars Program Chief Engineer and also spent time on the Mars Reconnaissance Orbiter and the Phoenix EDL teams prior to joining the Mars Science Laboratory team.

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Manning has received two NASA medals and is in the Aviation Week Magazine Space Laureate Hall of Fame in the Smithsonian Air and Space Museum. In 2004, “SpaceNews” magazine named him one of 100 people who made a difference in civil, commercial, and military space since 1989.

Manning is a graduate of Caltech and Whitman College, where he studied math, physics, computer science, and control systems. He makes his home in La Canada with his wife Dominique and their daughter, Caline.

Dr. Ashwin Vasavada

Deputy Project Scientist on the Mars Science Laboratory Mission

Dr. Ashwin Vasavada is a planetary scientist at the Jet Propulsion Laboratory in Pasadena, California. He is the Deputy Project Scientist on the Mars Science Laboratory mission, with its rover, Curiosity, and helps lead the international team of scientists on that mission. His research interests include the climate history of Mars, the weather on Jupiter and Saturn, and the possibility of ice at the poles of the Moon and Mercury. He has participated in the operation and analysis of data from several NASA spacecraft missions, including the Galileo mission to Jupiter and the Cassini mission to Saturn. He holds a B.S. in Geophysics from UCLA and a Ph.D. in Planetary Science from Caltech.

Dr. Michael Watkins

Mission Manager of the Mars Science Laboratory Mission

Dr. Michael Watkins is the Mission Manager of the Mars Science Laboratory Project, managing all aspects of flight operations development, along with Mission Design and Navigation, prior to launch, and leading development of surface operations prior to landing. Previously, he was the Mars Exploration Program Advanced Program Manager, overseeing all aspects of the development of future robotic Mars missions.

Watkins is also active as a scientist, serving as the Project Scientist for the GRACE, GRACE Follow-On and GRAIL Earth and lunar gravity mapping missions, insuring development of all required science analysis algorithms and leading scientific interpretation of the data, with a specialty in climate change research based on GRACE and GRACE Follow-On global water cycle observations.

Previously, he managed the Navigation and Mission Design section at JPL, which is responsible for providing trajectory design, mission planning, mission engineering, and navigation for all NASA deep space missions. Prior to that, he managed the Tracking Systems and Applications section at JPL, which develops hardware, software, and science applications for advanced tracking systems, including the Global Positioning System, Very Long Baseline Radio Interferometry, GRACE K-band ranging, Autonomous Formation Flying, and others.

Prior to joining JPL, Dr. Watkins was a senior research staff member at the University of Texas at Austin Center for Space Research, from which he received his Ph.D. in Aerospace Engineering. He also teaches at Caltech and is a member of several Earth and planetary mission science teams. He has been an author or co-author of over 200 scientific publications, serves or served on the boards of numerous international scientific and engineering societies, and has been the recipient of numerous NASA and other awards, including JPL›s highest technical honor, being named a Fellow of the Lab, in 2010.

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Gail Willumsen

Director and Producer, *Ultimate Mars Challenge*

Gail Willumsen produces, writes, and directs documentary films and non-fiction programs for PBS, cable, and network broadcast. Her work has been recognized with three Emmys, a Peabody Award, and many international accolades.

Based in Los Angeles, Willumsen has chased down stories around the world. With a personal interest in archaeology and anthropology, Willumsen has produced films about mummies, ancient shipwrecks, and the prehistoric monument Stonehenge. Her projects have also explored global health issues, wildlife conservation, and space exploration. In 2010, Willumsen directed and produced NOVA's *Secrets of Stonehenge*.

Willumsen founded Gemini Productions with producer and director Jill Shinefield in 1990. Prior to co-founding Gemini Productions, she produced shows for National Geographic, including *30 Years of National Geographic Specials*, *Volcano!*, *The Noble Horse*, and *Lost Ships of the Mediterranean.*