The Curiosity rover represents two breakthroughs in one mission. First, with its "sky-crane" landing in August 2012, NASA proved it could safely deliver heavy payloads to Mars. Then, eight months later, Curiosity dug up evidence that ancient Mars flowed with fresh water, the main prerequisite for microbial life. James Erickson and Justin Maki, two of Earth’s foremost experts on Martian robotics, will discuss what’s next for the nuclear-powered, laser-armed robot.

James Erickson, Project Manager, Mars Science Laboratory
Justin Maki, Camera Engineer, Mars Science Laboratory
MOMERATOR: Tom Jones, Astronaut, Author, Planetary Scientist

Palmer Luckey is a modern American success story. A gaming enthusiast since boyhood, he became obsessed with the concept of virtual reality. Yet he was frustrated by the VR gear that was available. It was expensive, slow, and literally nauseating to use. So at the age of 19 he hacked together his own VR prototype, the Oculus Rift, then launched a company to produce it. Now Luckey’s company is busy creating one of the most anticipated new technologies in years. He’ll explore how virtual reality will transform gaming, military training, medicine, and more.

Palmer Luckey, Founder of Oculus VR
MOMERATOR: Joel Johnson, Technology Journalist

No technology has made the leap from science fiction to the public sphere as quickly as the autonomous vehicle. The Navy’s unmanned X-47 B jet landed on a moving aircraft carrier this past year. GM’s Super Cruise—enabled vehicles will bring automotive autonomy to American highways before the end of the decade. And engineers are teaching small drones to work together to perform tasks such as exploring and mapping hazardous environments in disaster zones. Three leaders in the field will examine just how ready humans are to flip the switch to autopilot.

John Capp, Director of Global Active Safety Electronics and Innovation at General Motors
Joseph Chody, Chief Engineer for the X-47B Unmanned Combat Air System
Vijay Kumar, Mechanical Engineer, University of Pennsylvania
MOMERATOR: Joe Pappalardo, Senior News Editor, Popular Mechanics

One of the most useful side effects of the explosion of smartphones over the past decade has been the commodification of sensors—accelerometers, magnetometers, gyrosopes, GPS antennas, and more. That’s spawned a quiet technological revolution that affects the fields of medicine, infrastructure, environmental science, transportation, robotics, and even agriculture—and the changes are just beginning.

Paul Bunje, Director of the Wendy Schmidt Ocean Health XPRIZE
Anita Goel, CEO of Nanobosyn and Winner of the Nokia Sensing XCHALLENGE
Michael Goldfarb, Co-inventor of the Indego Exoskeleton
Gerald Loeb, Co-inventor of the SynTouch Biomimetic Fingertip
MOMERATOR: Logan Ward, Contributing Editor, Popular Mechanics

Peter Diamandis plays the dual role of technological philosopher and innovation accelerator. Through the XPRIZE Foundation, he uses competition and cash prizes to jumpstart industries that could radically improve human life. His 2012 book, Abundance, foretells a near-term future where advances in technology eliminate scarcity and enable all humans to live safer, longer, and more fulfilling lives. He’ll talk with Popular Mechanics’ own techno-optimist, Editor-in-Chief Jim Meigs, about how we’ll solve big problems such as ocean acidification, pollution, and disease.

Peter Diamandis, Founder and CEO, XPRIZE Foundation
MOMERATOR: James B. Meigs, Editor-in-Chief, Popular Mechanics