President Chameau Announces 2012 Commencement Speaker, Elon Musk

It is my great pleasure to announce that technology entrepreneur Elon Musk will be the speaker for our 118th annual commencement ceremony.

Musk is a visionary business leader and innovator who is spearheading revolutionary ideas in three global industries--automobiles, energy, and space exploration. He is a powerful proponent of science and technology, and will share with our graduates his perspective on how their brilliant, big ideas can, and will, have a positive impact. The ceremony is at 10:00 a.m. and will take place in front of Beckman Auditorium on June 15.

Musk is the founder and chief executive officer of Space Exploration Technologies (SpaceX) and Tesla Motors, and the chairman of Solar City. He is most well known for helping to make mass production of electric vehicles viable and for pioneering commercial space flight through the Hawthorne-based SpaceX, which will send the world's first commercial spacecraft to dock with the International Space Station in February. Prior to his more recent ventures in energy and space travel, Musk cofounded PayPal, the world's leading Internet payment system, and served as the company's chairman and CEO.

In February 2011, Musk was recognized by Forbes as one of "America's 20 Most Powerful CEOs 40 and Under." In 2010, the Kitty Hawk Foundation honored him as a Living Legend in Aviation for creating the Falcon 9 rocket and Dragon spacecraft.

That same year, Musk became the youngest recipient of the Auto Executive of the Year Innovator Award for his work at Tesla Motors and was named to the Time 100 in 2010. Earlier honors include being recognized for his work by R&D magazine in 2007, and receiving the National Space Society's 2009 Von Braun Trophy, given for leadership of the most significant achievement in space.

Elon Musk has fostered a successful, impactful career by ardently pursuing technological solutions to address some of the world's most important problems. He has demonstrated how talent, intelligence, and active leadership--notable traits that each of our graduates also share--is vital to shaping the future of our world.

I look forward to seeing you at commencement in June. I am confident that the ceremony will once again be an exciting and meaningful event for the entire Caltech family.

Yours in discovery,

Jean-Lou Chameau
President Chameau Receives Lamme Award

Jean-Lou Chameau, president of Caltech and professor of civil engineering, environmental science and engineering, and mechanical engineering, has been selected by the American Society for Engineering Education (ASEE) to receive its Benjamin Carver Lamme Award "for his sustained and exemplary leadership in developing and promoting innovative and engaging environments for engineering education."

The award citation goes on to state that "his contributions reflect his vision for creating discovery-based and interdisciplinary contexts for engineering education and research, as well as his ability to remove barriers to success in engineering degree programs and careers in academia. He has demonstrated his leadership skills at highly regarded engineering programs, large and small, where he routinely engaged a diverse talent base to find solutions for the complex challenges facing those institutions."

Prior to joining Caltech he served as provost and vice president for academic affairs at the Georgia Institute of Technology, where he was Hightower Professor, a Georgia Research Alliance Eminent Scholar, and former dean of the Georgia Tech College of Engineering. He became Caltech's eighth president in September 2006.

Moore Foundation Awards $6 Million for Earthquake Early Warning System Research

The Gordon and Betty Moore Foundation has awarded $6 million to three West Coast universities to create a prototype earthquake early warning system for the Pacific Coast of the United States.

The grant will allow seismologists at the University of California, Berkeley, the California Institute of Technology (Caltech), and University of Washington, Seattle, in collaboration with the U.S. Geological Survey, to learn about the science of earthquakes and the best way to capture and analyze seismic data in order to give schools, utilities, industries and the general public as much time as possible—most likely seconds to several minutes—before the ground begins to shake.

"The Gordon and Betty Moore Foundation is funding this basic, fundamental science to yield an earthquake early warning prototype that we hope will pave the way for a fully functioning system in the Western U.S.,” said Cyndi Atherton, program director for science programs at the foundation.

Continued on page 3....
President Chameau Inaugurates Huffington Post’s Science Serving Society Section

As president of the California Institute of Technology (Caltech), where science and technology are our raison d’etre, I applaud the Huffington Post on its launch of a section dedicated to advancing science in our society. Serving society through science and technology was important when the modern Caltech was formed in 1920, and we believe it is even more important today as our nation and our world face new and complex challenges. That’s why it’s important to have forums for discussing policy, highlighting innovation, and breaking new science and technology news.

**Science engages society.** About two years ago, my wife, Carol, was in a taxicab in the south of France. As is typical in Europe, the taxi driver struck up a conversation with her. As soon as he discovered she was from Caltech, he said, "Oh, I am so sorry about your rover." He went on to explain how he and his family had been following the final steps of Spirit -- one of the two NASA rovers sent to Mars by the Jet Propulsion Laboratory (JPL), which is managed by Caltech. Spirit had recently become stuck on the soft soil of the red planet after seven years of continuous operations that were supposed to last only three months, and people around the world were fascinated by its plight.

**Science enhances our lives and our economy.** Space exploration has led to discoveries -- from robotic surgery to food production, from hazard prevention to national security, from cell phones to GPS systems -- that go far beyond the food production, from hazard prevention to national security, exploration has led to discoveries -- from robotic surgery to food production, from hazard prevention to national security, from cell phones to GPS systems -- that go far beyond the study of space itself. As with other scientific disciplines, these discoveries were not the primary purpose -- or even the recognized secondary benefit -- of the original pursuit. This is one of the things that make science so exhilarating -- the way it routinely expands our fundamental understanding of the world around us and challenges scientists and engineers to accomplish feats previously only dreamed about. If we provide consistent support for scientific pursuits, we will continue to realize these ideas and inventions, and to take advantage of their associated jobs and wealth creation.

**Science is addressing the tough problems.** In his 2011 State of the Union address, President Obama mentioned energy science research conducted at Caltech and the Lawrence Berkeley National Laboratory as an example of research that could lead to game-changing technologies. Our efforts to develop artificial photosynthesis or create ultra-efficient solar cells or batteries are an investment in the future -- one that is receiving support from the federal government, philanthropists, and industry. But these types of successful public-private partnerships are not unique to Caltech. Such game-changing research is taking place at research universities and national laboratories in all the disciplines of science, and most often at the interface of these disciplines. As long as science remains an investment in our future, there will be extraordinary people who will address the difficult problems our world is facing.

And that is why I thank the Huffington Post for providing this forum for scientists, engineers, students, entrepreneurs -- and even university presidents -- to explore what science means to society, and to imagine all that we may create and discover as we move to invent our future.

Continued from page 2...

**Moore Foundation Grant**

“A warning system has the potential to save thousands of lives and millions of dollars in the event of an earthquake, and we feel it is important to resolve any scientific questions that could stand in the way of implementing such a system.”

“The technology and scientific expertise exist to create a sophisticated West Coast earthquake early warning system even more advanced than Japan’s now four-year-old system, which functioned well after the magnitude 9.0 Tohoku quake earlier this year,” said Richard Allen, director of the Berkeley Seismological Laboratory and a UC Berkeley professor of earth and planetary science.

ShakeAlert, the current version of an early warning system now being tested by Caltech and UC Berkeley in collaboration with the Southern California Earthquake Center, ETH Zurich and the USGS, opens a pop-up alert on a recipient’s computer in the event of a major earthquake, listing quake location and magnitude and the estimated time before shaking should be felt. While people living near the epicenter of a quake will not have much warning; those farther from a large quake could have seconds or tens of seconds of notice before the ground shakes.

All three universities will utilize their regional seismic networks to improve accurate assessment of earthquakes as they occur, especially large earthquakes. Current EEW systems, for example, act as if quakes rupture at only one point, when in fact, in larger earthquakes, fault ruptures can extend over hundreds of kilometers.

“The Foundation’s grant is a huge contribution to moving forward the science of earthquake early warning systems,” said Thomas Heaton, director of the Earthquake Engineering Research Laboratory and professor of geophysics and of civil engineering at Caltech.

**Rock ‘n’ Roll Pasadena Half Marathon on Feb. 19**

The first ever Rock ‘n’ Roll Pasadena Half Marathon benefitting CureMito will debut on Sunday, Feb. 19. Live bands and cheerleaders will entertain participants along every mile of the course, which starts and ends at the iconic Rose Bowl. Along the way, runners will go past Caltech along South Wilson Avenue, where there will be live music on the Beckman Institute Lawn. Details about the event and the Health & Fitness Expo preceding the race can be found at the http://runrocknroll.competitor.com/pasadena website.
FORMER CALTECH PUBLIC RELATIONS VICE PRESIDENT DIES

Bob O'Rourke, of Pasadena, the former vice president for public relations at the California Institute of Technology, died Dec. 27 of complications following a lung transplant. He was 72.

O'Rourke led Caltech's Office of Public Relations from 1986 to 2009, first as director, then as Caltech's first assistant vice president for PR, and finally as vice president for PR. Since 2009 he had been senior advisor for external affairs to Caltech president Jean-Lou Chameau.

O'Rourke involved Caltech in community activities and brought the public to campus in myriad ways. He established Caltech's first visitor's center and developed the Caltech edition of KPCC radio's popular "AirTalk" show. He was also the force behind "The Loh Down on Science," a syndicated science radio minute heard on KPCC and in nearly 200 countries; Curious, an award-winning four-part public television program that included Caltech research; the Institute's annual Biology Forum; and the DuBridge Distinguished Lecture Series, which brought to campus such notables as Walter Cronkite, Warren Buffett, and Nobel Peace Prize–recipient John Hume.

Diagnosed with idiopathic pulmonary fibrosis in 2006, O'Rourke found little information about the disease until he discovered the Coalition for Pulmonary Fibrosis (CPF). The Culver City–based organization provided him with resources to cope with the disease. He, in turn, helped increase awareness of the illness that was responsible for the deaths of Marlon Brando, Evel Knievel, and Robert Goulet. IPF kills as many people a year (40,000) as breast cancer.

Current Caltech president Chameau remarked, "Bob came to visit with me in Atlanta as soon as I was announced as the new president. I quickly realized that his love and excitement for Caltech was infectious. His energy and Irish charm played a big role in spreading the word about Caltech over the past 20 years. Everybody I met in Pasadena and LA knew Bob and associated Caltech with him. He was the Caltech Ambassador Extraordinaire."