FOR IMMEDIATE RELEASE
April 16, 2014

Contact: Delores Lencioni
805-756-2186; dlencion@calpoly.edu

Two Cal Poly Engineering Faculty Members Named Distinguished Scholarship Award Winners

SAN LUIS OBISPO — Cal Poly has named two College of Engineering professors to receive the university's Distinguished Scholarship Award for 2013-14: Stephen Klisch in the Mechanical Engineering Department and David Marshall in Aerospace Engineering.

Klisch is a recognized pioneer in the theoretical biomechanical computer modeling of the growth and remodeling of cartilage. He has developed theoretical, analytical and experimental methods in biomechanical engineering to explore the prevention and treatment of osteoarthritis, a leading cause of disability in the United States. Klisch's innovative approaches to understanding cartilage growth and computer modeling have the potential to reduce individuals' suffering and the associated economic cost to society.

Klisch's work has been funded by such entities as the National Science Foundation and the National Institutes of Health. He integrates his research into his teaching, taking his students' development seriously. He co-founded the joint Cal Poly-UC San Diego Undergraduate Research Program in Articular Cartilage Mechanobiology, in which two to four Cal Poly undergraduates spend summers in San Diego working with advanced researchers and one or two UCSD undergraduates. He also involves students in summer research opportunities at Cal Poly, with lab work that helps students bridge the gap between theory and application.

Klisch has been teaching at Cal Poly since 2001. He earned Bachelor of Science and Master of Science degrees at the University of Virginia and a doctorate at UC Berkeley.

Marshall's main research focus is on improved modeling techniques to design quieter and more fuel-efficient aircraft.

"Marshall combines rigorous expertise in computational fluid dynamics with phenomenal teaching and team-building skills that have stellar impacts on students, colleagues, the aerospace industry, and the reputation of Cal Poly," said Brett Bodemer, chair of the Academic Senate Distinguished Scholarship Awards Committee.

Marshall is credited with numerous achievements. Perhaps none has such far-reaching implications as serving as principal investigator for a NASA-sponsored project named AMELIA (Advanced Model for Extreme Lift and Improved Aeroacoustics). The project's stunning results could have the potential to transform commercial air transportation.

In leading the AMELIA project, Marshall collaborated with colleagues and students at Cal Poly and colleagues at Georgia Tech to design and execute a $4.7 million wind-tunnel study. The team outperformed similar and more costly projects run by Boeing, USC and Massachusetts Institute of Technology. The AMELIA project was awarded a NASA Group Achievement Award, and two graduate students won the

prestigious NASA Aeronautics Research Mission Directorate Associate Administrator High Potential Award.

The potential benefits of the research Marshall and his team conducted are enormous. The team was the first ever to implement tests to measure how powered-lift aircraft might achieve quicker lift-off while also measuring the sonic implications of that lift-off. Quicker, quieter lift-off means the possibility of shorter runways, holding the potential to improve the convenience of air travel, reduce fuel burn and environmental impact, alleviate air traffic congestion, and increase transportation network capacity.

Marshall has taught at Cal Poly for nine years. He earned a Bachelor of Science degree from Worcester Polytechnic and master's and doctorate degrees from Georgia Institute of Technology.
In announcing the Distinguished Scholarship Award winners, committee chairman Bodemer noted that naming two professors from a single college is a departure from precedent that was clearly warranted in this case. "The Distinguished Scholarship Awards Committee is truly pleased to be able to recommend these two faculty members whose outstanding work so wonderfully exemplifies the Teacher-Scholar model," Bodemer said.

The Distinguished Scholarship Award was established in 2003 to recognize faculty achievements in research, creative work, and other professional development activities. The award supports research and other creative endeavors and encourages professional growth of Cal Poly faculty members.

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