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UCSB Media Arts and Technology Scholar Receives Harold J. Plous Award

Theodore Kim, Academy Award-winning assistant professor in the Department of Media Arts and Technology at UC Santa Barbara, has received the 2013-14 Harold J. Plous Award.

One of the university's most prestigious faculty honors, the award is presented annually by the College of Letters and Science to recognize an assistant professor from the humanities, social sciences, or natural sciences who has shown exceptional achievement in research, teaching, and service to the university. The award was established in 1957 to honor the memory of Harold J. Plous, an assistant professor of economics.

Kim will showcase his research when he delivers the annual Plous Lecture next spring.

"The Plous Award is a prestigious peer recognition of our exceptional colleagues," said UCSB Chancellor Henry T. Yang. "I am delighted to see this honor bestowed on Professor Kim for his exemplary contributions to the field of computer graphics, animation and simulation, and fluid turbulence, as well as for his outstanding record of research, teaching, and service since joining our UCSB faculty. We look forward to his exciting Plous Lecture next spring."

Said David Marshall, Michael Douglas Dean of Humanities and Fine Arts: "Ted Kim has been a great addition to the Media Arts and Technology Program, which exemplifies our campus commitment to interdisciplinary research and teaching by bringing together art and engineering."

Noted Curtis Roads, chair and professor of Media Arts and Technology: "Professor Kim's research focuses on computationally intensive physics-based models of natural phenomena that are optimized by sophisticated techniques to make them practical. He brings the physics of reality to the virtual world."

Kim, who came to UCSB from the University of Saskatchewan in 2011, completed his doctoral degree in computer science at the University of North Carolina, Chapel Hill. Before joining the faculty at the University of Saskatchewan, he held postdoctoral research positions at Cornell University and at IBM's Thomas J. Watson Research Center.

Kim's research investigates the multi-sensory phenomena that arise from the numerical simulation of physical system. His current interests include the patterns that emerge from fluid turbulence, and the characteristic deformations that arise during human motion. Nearly a dozen recent feature films have made use of Kim's research, and he received a 2013 Academy Award for scientific and technical achievement in recognition of the Wavelet Turbulence software he developed with colleagues Nils Thuerey of effects studio ScanlineVFX, Markus Gross of the Swiss Federal Institute of Technology (ETH Zurich), and Doug James of Cornell University. The software allows for rapid creation of highly detailed gas simulation, which gives artists greater ease in controlling the appearance of these effects in the final image.

More recently, Kim was the recipient of a prestigious CAREER Award from the National Science Foundation (NSF). The Faculty Early Career Development (CAREER) Program offers the NSF's most prestigious awards in support of the early career development of teacher-scholars deemed most likely to become the academic leaders of the 21st century. The awards provide a financial stipend to support research activity for a period of five years.

Kim received a five-year, \$508,658 grant for his proposal, "Enabling Efficient Non-Linearities in Biomechanical Simulations." Hoping to make simulations more realistic via the introduction of non-linear effects, Kim's team is looking to a technique called "model reduction" to drastically speed up simulation times. Potential applications for

the work include virtual humans, for use in everything from movies and video games to surgical simulations, and in blood flow simulations advanced enough to run virtual experiments that may aid other research. An integral part of the grant is Kim's pledge to release all of his source code into the public domain.

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