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## Elaine Chew: Making Music

By HeatherWells

When musicians want to perform together, being in the same location is usually a necessity. But if Elaine Chew has her way, musicians having to travel to other cities, states and even countries to work with colleagues could be a thing of the past.

Chew, an assistant professor in the Epstein Department of Industrial and Systems Engineering at the University of Southern California's Viterbi School of Engineering, worked with other researchers to develop Distributed Immersive Performance (DIP), a computer program that enables musicians to collaborate and perform synchronously over the Internet and allows for live, interactive musical performances where participants, including musicians, conductors and audience members, are in different physical locations.

Born in Buffalo, NY and raised in Singapore by second-generation Singaporean and Malaysian parents, Chew grew up on the Nanyang University campus, where her father was a mathematics professor. She says it was this upbringing that helped her determine a career path and instilled in her the desire to carry on her family's tradition of emigrating.

"It fostered a healthy sense of adventure in me," she says. "These experiences have cultivated a keen appreciation for and ease of straddling different cultural contexts. My work today allows me to concurrently dwell in the artistic world of music and the analytical sphere of science and engineering."

Chew returned to the United States for college, graduating from Stanford University with majors in music and mathematical and computational sciences. She went on to earn her masters and doctoral degrees in operations research from the Massachusetts Institute of Technology.

Chew, now 34, currently teaches an undergraduate class in operations research and a graduate level course in Web

technology at USC and is a senior investigator at the university's Integrated Media Systems Center. She also works on multiple projects pertaining to the use of computers in modeling aspects of the mind's understanding of music.

One such project is the Expression Synthesis Project (ESP), of which Chew is the advisor and project leader. She says ESP will turn musical interpretation, which has normally been the field of expert musicians, into something non-experts can achieve.

"ESP aims to create a driving interface that makes expressive performance accessible to non-expert musicians," she says. "It will also allow musicians to experiment with expressive choices without having to first master all the notes in a piece."

James Moore II, professor and chair of the Industrial and Systems Engineering department, describes Chew, a recent National Science Foundation Career Award winner, as a "born scientist and scholar."

"She presents a new standard that can't help but force any thinking member of the faculty to rethink and re-evaluate the scope and relevance of his or her own contribution," Moore says.

More important though is Chew's dedication to her students. He says she has created unique courses and teaches in nontraditional ways. "She is supremely committed to the quality of her students' experience," Moore adds.

Chew considers her job more than just work. It is also a hobby and a way to spend time with her French husband, Alex, a computer scientist and collaborator on several projects. "Each project has its quirks and its own special rewards, and every discovery gives me happiness and brings a smile to my face," she says. "I do what I most enjoy every day. The distinction between work and play ceases to matter when that is the case."