

Prof. Chew brings music expertise to IMSC's research

Dr. Elaine Chew, a new IMSC investigator who brings music expertise to the Center's cross-disciplinary research program, is already involved in an unusual project, "Flying Sonics!" which promises a multichannel electro-acoustic musical extravaganza this spring.

New academy . . .

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and others, and has offered six part-time programs. Nearly 100 students have completed the course of study, and close to 80 percent found positions in the multimedia industry or are pursuing further education. This MUA curriculum is licensed by the newly created organization, the New Media University Academy.

Under a contract with the City of Los Angeles, the New Media University Academy has started a program at the city's Community Technology Education Center (CTEC), according to Mark Bielak, the MUA Director who is now President of the new for-profit academy. Bielak also continues to operate the training program for USC's Civic and Community Relations Office, which has a separate contract with the city's Housing Authority to train city residents who live in public housing. Both 20-week programs started last month with 18 students apiece.

The concert will feature compositions for two grand pianos and multichannel audio generated and controlled by computers.

Dr. Chew, an Assistant Professor in Industrial and Systems Engineering and a classical pianist, will perform on one of two nine-foot grand pianos on stage at the Alfred Newman Recital Hall. Dr. Dennis Thurmond, an Associate Professor of Keyboard Studies and Director of ElectroAcoustic Media at the Thornton School of Music, will play the other one.



Prof. Elaine Chew

As the pianists perform, Dr. Chris Kyriakakis, another IMSC investigator and Assistant Professor of Electrical Engineering-Systems, will use IMSC's multichannel Immersive Audio technology to generate accompanying sounds that will be dynamically placed in space throughout the hall.

Calling the show a "landmark performance art event," Dr. Chew said that it will "push the boundaries of an interactive technology-acoustic partnership in concert."

She said "the sounds we'll be producing on the pianos will interact

with the computer-controlled sounds that are darting and spiraling through space. The spatial dimension afforded by the multichannel technology will open up new musical realms for exploration."

She pointed out that new music will be composed for the performance that will exploit the 3D audio as a new parameter for musical expression and creativity.

A Faculty Collaboration Grant from the USC Arts Initiative will fund the performance. The concert will probably take place in mid-April and will be publicized across campus in advance.

Dr. Chew, who came to USC this past fall, said the "Flying Sonics!" project is an excellent example of the kind of interdisciplinary research that drew her to IMSC. "I really love the environment. There's an adventurous spirit at IMSC," she said.

"Music is the ideal domain for studying human perception and cognition, communication and creativity," she said, explaining that her goal is to apply the science of decision-making, called operations research, to the domain of music.

Dr. Chew combines her training as an operations researcher with her experience as a practicing musician to build efficient and cognitively viable

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Prof. Scholtz honored . . .

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Dr. Scholtz said the Allen test facility enables careful measurement of UWB signals in a controlled electromagnetic environment. He pointed out that the facility allows researchers to characterize UWB radio antennas without having to worry about the multipath effects and interference that normally occur in a laboratory environment.

Dr. Scholtz also strengthened IMSC's UWB research in 2001 when he led a team that won a three-year, \$3.6 million grant from the U.S. Army to investigate critical problems occurring in short-range UWB radio applications. In addition to researchers from USC, the team includes investigators from the University of California at Berkeley and the University of Massachusetts at Amherst.

In reflecting on his work at USC, Dr. Scholtz said he hopes a lasting contribution will be the building of a strong radio laboratory, the UltRa Lab.

"In the School of Engineering, we have a core of young faculty who are very good. I would like to help the School by continuing to build a radio laboratory and experimental radio program that will do the School proud," he said. Dr. Scholtz was Director of the School's Communication Sciences Institute from 1984 to 1989.

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Electrical Engineering, University of Strathclyde, Glasgow, Scotland; Jeff Gralnick, E-splision Consulting LLC, Weston, CT; Max Nikias, Dean of Engineering at USC and former IMSC Director; and Adam C. Powell III, McLean, VA.

Dr. Tescher said contributions are welcome for consideration and potential contributors should contact him at andytescher@attbi.com.

Potential topics include many categories of multimedia technologies, such as multimedia systems, relevance of standards, the role of multimedia in education, the convergence of computing and broadcast, hardware implementations, the impact on social issues, and multimedia and entertainment.

Prof. Chew . . .

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computer models for representing, analyzing, categorizing and comparing musical information.

She said these quantitative models will provide the means to attain her ultimate goal of explaining the role of decision-making in music performance.

In her doctoral research at the Massachusetts Institute of Technology (MIT), she came up with a 3D model for representing musical information that has been used successfully to develop real-time algorithms for music perception and cognition. The model enabled the design of an algorithm for key-finding

that performed more efficiently than current methods on a canonical test set.

Also, the model allowed the design of the first computationally viable algorithm for detecting key modulations. She said that key change is one important way to segment a piece of music.

Dr. Chew, who grew up in Singapore, was an award-winning pianist by the time she was in her teens. She earned her Bachelor's degree in Mathematical and Computational Sciences and Music from Stanford University and holds a Master's and Ph.D. in Operations Research from MIT.

Phillips, MacKenzie named to posts

Nichole Phillips has been appointed IMSC's Executive Administrative Director, replacing Susan Lewis, who was named Assistant Dean of Program Planning and Development of the School of Engineering.

Ms. Phillips has served as the Chief Financial Officer of the Center since its inception in 1996. Prior to that, she was the Research Coordinator for the School.

Victoria MacKenzie, who was a Contracts and Grants Administrator for the University, has been named IMSC's Business Manager. Ms. MacKenzie has also been a Contracts and Grants Administrator for the Information Sciences Institute.

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