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Hawaii Center for Advanced Communications

BY CARRIE MATSUZAKI WITH MAGDY ISKANDER



WHAT DO YOU WANT TO KNOW about micro and pico-cell wireless communications? How about phased antenna array with electronic beam steering? Maybe you're interested in indoor/outdoor communications or site planning for a wireless communication network? Or are you a middle school teacher interested in knowing what teachers at Kawanakoa, Dole, and Keauu are doing to develop science and math programs related to wireless communications technology? Where do you turn to find answers to these questions?

... to HCAC, the Hawaii Center for Advanced Communications. HCAC was established with major funding from the Hawaii State Legislature and approved by the Board of Regents in 2000. A Center in Advanced Communication was the vision of **Shu Lin**, Professor Emeritus of the Department of Electrical Engineering at UH

Mānoa, IEEE Fellow, and internationally renown in the area Error Control Coding.

The Center's goal is to “be the leading Center for multidisciplinary research in the telecommunication technology with joint research and educational activities that promote national and international collaboration and partnership with industry.” HCAC has begun to fulfill its mission with research and educational activities currently underway.

Since joining HCAC in 2002 as its director, **Magdy Iskander**, Professor of Electrical Engineering, has organized two IEEE international wireless communication conferences in Honolulu. The Center is presently preparing for a major conference, the IEEE Antennas and Propagation International Symposium to be held in June of 2007, which anticipates an attendance of 1500. Dr. Iskander is a Fellow of IEEE, former NSF Program Director in the

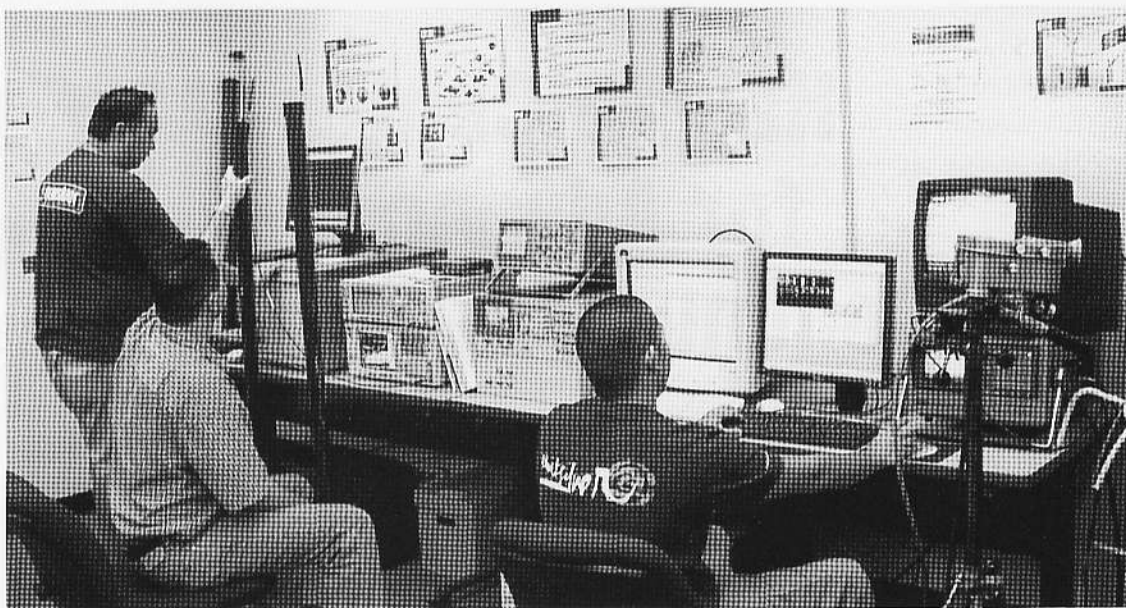
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Electrical and Communications Systems, and his research is in the area of integrating propagation modeling and smart antennas designs in developing next generation wireless communication systems.

Although only a few years old, HCAC has attracted over \$1.4 million in extramural funding this year alone. The Center research sponsors include the National Science Foundation, Army Research Office, Office of the Navy, and five major corporate sponsors. HCAC is working on innovative simulation and RF design projects with Raytheon, Motorola, Kyocera Wireless, Corning and BAE Systems. The Center is a partner in the NSF

wireless communications test bed, and a microwave test and measurement laboratory. "It has been extremely satisfying to work with such dedicated and experienced science teachers. They have been able to quickly learn, apply and infuse communication technology effectively into their programs. The result has been motivated and excited students. Creating that enthusiasm is a critical step in maintaining a student's interest in math and science and hopefully will carry them forward to studies in engineering," stated Iskander.

Additionally, the Center is launching a distance learning graduate program in communications. In collaboration with the Pacific Asian Center for Entrepreneurship



Industry/University Collaborative Research Center in telecommunications "Connection One" with the University of Arizona, Arizona State, and Rensselaer Polytechnic.

HCAC's outreach activities with the community include working with three middle school teachers to establish a "wireless curriculum". These efforts are funded in large part by the National Science Foundation. The teachers with the assistance of HCAC graduate students have implemented wireless communications into their science enrichment programs and curriculum. Both teachers and students have also been to UH observing HCAC experiments, touring state-of-the-art facilities including an indoor antenna range,

& E-Business in the College of Business, HCAC is developing a distance learning graduate certificate in telecommunications and entrepreneurship.

"This is an exciting time for Hawaii to be participating and contributing in the area of Advanced Communications. We look forward to working closely with the academic, industry, and education communities to keep Hawaii at the forefront of innovation and opportunities," remarked Iskander.

If you have additional questions about telecommunications, please access HCAC's web site at <http://hcac.hawaii.edu> or contact Magdy Iskander at 956-3434. ☐