NJIT®

New Jersey's Science & Technology University

THE EDGE IN KNOWLEDGE IN WIRELESS TELECOMMUNICATIONS

Targeted for national prominence by NJIT's strategic plan, the university's programs in wireless telecommunications are at the forefront of 3rd and 4th generation wireless technology, which will provide voice, data and streamed multimedia on an "anytime, anywhere" basis.

- **Yeheskel Bar-Ness**, director of NJIT's Center for Communications and Signal Processing Research, was honored by the R&D Council of New Jersey for his contributions to technologies to enable the next generation of wireless digital communications. He received the 2008 Thomas Alva Edison Patent Award in the University Technology Transfer category.
- During the past year, Bar-Ness has been awarded five patents in collaboration with his former PhD students for such technologies as **MIMO** (multiple input/multiple output) which uses antenna arrays to increase the bit-rate of wireless communications; **OFDM** (Orthogonal Frequency Division Multiplexing), a technology that transmits multiple signals simultaneously over a single transmission path; and **UWB** (ultra-wide band), a radio technology that can be used at very low energy levels for short-range high-bandwidth communications.
- **Alexander Haimovich**, professor of electrical and computer engineering, is studying geolocation in collaboration with Princeton University with a grant from the U.S. Army. The study is aimed at improving the ability to localize radio sources. The ability to geolocate radio emitters would be of value in search and rescue operations and situational awareness, as well as in the delivery of wireless 911 emergency services.
- NJIT's SmartCampus team continues its efforts to develop a national prototype of a mobile, wireless campus community system along with the software and protocols to support a wide range of location-based computing services. The team developed the 'MarkIt' picture-phone game to help address the challenge of place description for the mobile social computing test-bed. Released and tested among several hundred students, MarkIt was a big hit on campus and a step forward for the SmartCampus project.

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