

Leading expert in telecommunications Anthony Acampora named Director of UCSD's Center for Wireless Communications

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Media Contact: Warren R. Froelich, (619) 534-8564

LEADING EXPERT IN TELECOMMUNICATIONS NAMED DIRECTOR OF UCSD'S CENTER FOR WIRELESS COMMUNICATIONS

Anthony Acampora, a leading national expert in telecommunications, has been named Director of the Center for Wireless Communications at the University of California, San Diego.

Acampora joined the UC San Diego School of Engineering this month from Columbia University, where he was professor of electrical engineering and Director of the Center for Telecommunications Research.

"What was appealing about UC San Diego was the fact that our Center is focused on wireless communications," he said. "Extending over the next 5-10 years, I see wireless communications as the most opportune topic for a focused research effort to be pursued by universities and industry.

"The need for wireless is right now. And the market is self-evident. This is where I want to be."

The Center for Wireless Communications officially opened at UC San Diego in late February and is dedicated to a major research and educational effort in the development of voice, data, image, and video through small personal communications devices.

This means the ability to transmit data, image and eventually video at any time, to any place, to anyone.

Funding for the center comes from annual "member" fees paid by companies with business interests in the field. To date, Fuji Electric Co., Hughes Network Systems Inc., Nokia, Pacific Sciences Inc. (PCSI), QUALCOMM Inc, Steinbrecher, Inc., and TRW Inc. have joined the center as full members.

"What we get from industry is guidance and advice as to the construction of a relevant research program," said Acampora. "We also get funding. Without industrial support, this Center does not exist."

Among company benefits, full members help guide the research focus of the center through representation as voting members on an Industrial Advisory Board, chaired by the dean of the School of Engineering. Other voting members of the Industrial Advisory Board are the center director and three faculty members appointed by the dean of the School of Engineering.

"What industry gets from us is the creation of a human resources pool trained at all levels--bachelor's, master's, Ph.D.--skilled in wireless communications systems technology. So they will have a human resource pool to draw upon.

"There's a critical manpower shortage in wireless communications today. And as an educational institution, we have to meet that need."

Acampora said that the Center will be multidisciplinary, drawing upon expertise in the School of Engineering's departments of electrical and computer engineering and computer science.

Areas of research focus will include:

*Radio frequency circuit and ASIC (application specific integrated circuit) design, needed for low-power electronic devices and power amplifiers.

"Wireless communications shouldn't be the kind of service where every 15 minutes you need the battery recharged," said Acampora. "So low-power circuitry is a key."

*Antenna design and propagation, which encompasses such things as fixed and mobile antenna arrays, for both indoor and outdoor uses.

"We have to be certain that the radio channel between the cellular phone and personal communicator back to the base station is of high quality," said Acampora.

*Communications theory, which involves various techniques for transmitting radio frequency signals in digital communications systems to support a large number of users.

"The amount of bandwidth set up to support these personal communications is limited by federal regulation," said Acampora. "What we've got to determine is how to share that bandwidth among a multiplicity of users."

*Communications networks, which include ways to route messages, including the meshing of wired (fiber) and wireless networks.

"It is important to establish systems architecture and management, and control strategies, so that the quality of wireless signals is at least as effective as wired signals," said Acampora.

*Multimedia applications, which incorporate techniques necessary to allow simultaneous wireless services of voice, data and video.

"We see ourselves as creating the knowledge base, the systems know-how and the underlying technologies, that would extend broadband network services to the wireless access domain," said Acampora. "That's the role we have identified and that's the role our industrial partners are supporting."

Before joining Columbia in 1988, Acampora served for 20 years at AT&T Bell Laboratories, much of his time devoted to basic research in radio and satellite communications, local and metropolitan area networks, packet switching, wireless access systems, and lightwave networks. While at Bell Labs, he served as Director of the Transmission Technology Laboratory where he was responsible for a wide range of projects including broadband networks, image communications, and digital signal processing.

Acampora received his Ph.D. in electrical engineering from the Polytechnic Institute of Brooklyn, is a Fellow of the IEEE, and a former member of the IEEE Communication Society Board of Governors. He has published more than 140 papers, holds 24 patents, and has authored a recently completed textbook, "An Introduction to Broadband Networks: MANs, ATM, BISDN, Self-Routing, Optical Networks, and Network Control for Voice, Data, Image, and HDTV."

He serves on numerous telecommunications advisory committees and frequently serves as a consultant to government and industry.

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