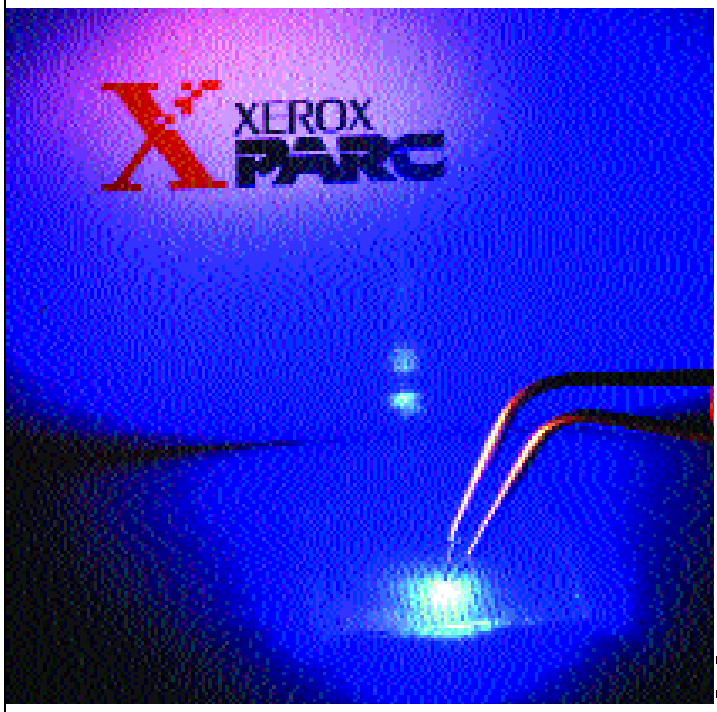
Wireless and Spacey

The AIP Corporate Associates Annual Meeting—to be held 26-27 October 1998 at HRL Laboratories, LLC, in Malibu, California—is shaping up to be a lively affair, with presentations and discussions of several timely subjects. On the first day of the two-day meeting, the theme session is on "Wireless and Space Communications" with speakers from HRL Laboratories, LLC, Hughes Electronics, Hughes Space & Communications Co., the University of California, the Jet Propulsion Laboratory, and the Mayo Clinic. Topics range from multimedia-data delivery to deep-space communications to wireless delivery of medical data. The session will be followed by tours of several of the labs at HRL Laboratories.



Tom Tracy

Day two begins with a panel session titled "Policy Issues on Wireless Telecommunications," during which speakers from industry, government, and a national observatory will address such issues as frequency and orbital-slot allocations, security, privacy, international cooperation, and the effect of wireless communications on radio astronomy. The meeting concludes with the annual "Frontiers in Physics" session, at which speakers this year will discuss the Mars Sojourner mission, quantum teleportation, sonoluminescence, and the moon as a mirror for global change.

Xerox PARC joins in

Xerox PARC became the newest Corporate Associate in late January this year. Its decision to join the AIP Corporate Associates is a logical extension of the center's long-standing involvement in advancing technology and its productive participation in professional societies and issues. "Xerox PARC has had a long-standing commitment to the development of materials and devices," says Neville Connell, manager of the electronic materials laboratory there. "This work has involved physics as one of the key disciplines, and many of our professional staff are active in the American Physical Society, the American Vacuum Society, and the Optical Society of America. We were, therefore, very pleased to have Xerox PARC become a Corporate Associate."

Since its formative years as the Haloid Co., Xerox has committed a substantial part of its annual revenues to fund both fundamental and applied research. The company opened the Palo Alto Research Center, one of Xerox's four worldwide research centers, in 1970, and gave it the charge to become the "architect of the information age." Since then, key devices, systems, processes, and computer languages vital to this technological revolution have flowed from the Palo Alto facility. These include laser printers, graphical-user interfaces, object-oriented programming languages, overlapping windows, and Ethernet, a local-area-network technology. The center

has also developed electronic components, embedded software, and architectures for Xerox copiers, printers, and systems.

The center has developed two-dimensional amorphous-silicon devices for use in image recording and as flat-panel displays. Used in the imaging process, these devices record X-rays for instant computer storage and reading or for almost simultaneous transmission to medical personnel located any place in the world. Digital enhancement of these images will improve the ability of physicians to detect medical problems such as tumors.

To further develop and market these and other new amorphous-silicon products, Xerox has created a Palo Alto–based spin-off company called dpiX (pronounced "depicts"). Under contract with the Defense Advanced Research Projects Agency, dpiX is creating portable battlefield units capable of displaying digital maps, real-time video, and other strategic and tactical information vital to field commanders and their troops.

Another current Xerox PARC project seeks to re-revolutionize printing and, quite possibly, other fields. Researchers there have developed blue-green light-emitting and laser diodes from an AlGaInN (aluminum-gallium-indium-nitride) alloy. These diodes are designed to produce higher-resolution and higher-quality color in laser printing. Current laser printers use red or infrared lasers. By switching to shorter-wavelength green or blue lasers, spot placement on the photoreceptors becomes more accurate and spot sizes can be reduced while the rest of the optical distances are kept the same. These lasers could also improve writing on film in such processes as photofinishing and offset lithography. The AlGaInN laser diodes cost less and are more efficient than the red, infrared, and argon-ion lasers currently used in these operations.

For more information on the AIP Corporate Associates, visit our Web site (www.aip.org/aip/corporate), or e-mail us at assoc@aip.org. Information on the 1998 meeting is posted on the Web site and is frequently revised.