



# Intercom

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**NO TOW TRUCKS NEED APPLY**—In spite of clearly-marked signs, some people insist on parking just about anywhere they please. But when they've got a big chain and a small vehicle, there's not much anyone, including tow truck operators and bicycle pirates, can do about it. (Photo by David Williamson)

## Dr. Huang Links Low Dosage Microwave and Cell Damage

By David Williamson

A medical center researcher has found strong laboratory evidence that low dosages of microwave radiation, the kind emitted by microwave ovens and radar equipment, may be a health hazard.

His experiments utilized a dosage level of only one-half the maximum safe dosage allowed by Federal law.

While scientists have known for several years that high dosages of the radiation are dangerous, especially when coupled with heat, the study conducted here demonstrates that low microwave levels are harmful to blood cells as well, according to Dr. Andrew Huang, the project's principal investigator.

Dosages of less than 10 milliwatts per square centimeter have been generally considered harmless, a level permissible under federal law dating from the mid-1950s.

Huang's experiments used five milliwatts per square centimeter, a level he said is lower than the amount workers at radar installations are constantly exposed to.

Working with cells taken from hamsters which had been exposed to microwave radiation, Huang, a member of the Department of Medicine, found two abnormalities which he termed "significant."

The first of these, he said, is that certain white blood cells (lymphocytes) taken from the experimental animals showed a large decline in their ability to respond to immunological challenges. Their response is vital as one of the natural defenses higher organisms have against disease agents, Huang said.

The second abnormality also involves the same white cells. After irradiation with microwaves, these disease fighters became what researchers describe as "turned on." That is, they grew larger and appeared in a form similar to the form they assume before multiplication.

"Our goal was to determine if low levels of microwave radiation damage mammalian cells," Huang said. "We were especially looking to see if the radiation damages chromosomes and the genetic apparatus of cells."

The scientist said no chromosomal damage was observed.

Huang's work is being sponsored by a \$45,000 grant from the Environmental Protection Agency. The EPA is interested in gathering information so that it may establish safe guidelines for radar operation, he said. Other government agencies, such as the Bureau of Radiologic Health, also may use the results of the research to establish safe guidelines for the manufacture of microwave ovens.

Microwaves are electromagnetic waves of very high frequency and

short wave length. They differ from ionizing radiation such as X-rays and gamma rays in that the latter kind of radiation is of much higher energy and produces positively or negatively charged sub-atomic particles in matter.

The dangers of ionizing radiation are well known, especially in the case of direct personal exposure and atomic fallout.

"We've found these abnormalities," the scientist said, "and now a lot more research is needed to determine exactly what they mean. Currently, we're analyzing our results from a biochemical point of view."

"Microwaves will find increasing use in the years ahead, particularly in homes," Huang said. "It's important for us to know what is safe and what isn't before we encourage wider use of it."

## Scientists Attend Symposium Here

Four researchers from Duke and UNC will discuss possible ties between hormones, viruses and cancer at a symposium here tomorrow (Oct. 25).

The symposium, sponsored by the Southeastern Section of the Society for Experimental Biology and Medicine, begins at 9 a.m. in Room 147 of MS 1 (the Nanaline H. Duke Building).

Some 40 doctors are expected to attend the meeting, according to one of its co-chairmen, Dr. Kenneth S. McCarty, professor of biochemistry and a faculty member of the Duke Comprehensive Cancer Center. McCarty organized the symposium with Dr. F. Stephen Vogel, a professor of pathology.

Speakers and their topics are: 9 a.m.—Dr. Thomas C. Vanaman, associate professor of pathology—"The Role of Calcium in Regulating Cyclic Nucleotide Metabolism in Transformed Cells,"

9:50 a.m.—Dr. Harold E. Lebovitz, professor of endocrinology—"Hormone Control of Cartilage Metabolism,"

10:50 a.m.—Dr. E. Lee Tyrey, assistant professor of ob-gyn—"Hypothalamus Regulation of Gonadotropic Hormone Secretion from the Pituitary," and

11:40 a.m.—Dr. Joseph S. Pagano, director of the Cancer Research Center at UNC—"Epstein-Barr Virus Genome and Malignancy."

## Four Named Full Prof

Four faculty members in the School of Medicine have received promotions to full professor.

Provost Frederic Cleaveland said four other physicians have received promotions to other faculty ranks.

The new full professors are Dr. James T. T. Chen in the Department of Radiology and Drs. Patrick A. McKee, Harold R. Silberman and John P. Tindall in the Department of Medicine.

Chen, 51, a native of Shantung, China, earned his M.D. degree in

1950 at the National Defense Medical Center in Taipei, China. He came to Duke as associate in radiology in 1965 and received promotions to assistant professor in 1968 and to associate professor in 1971.

McKee, 38, of Tulsa, received his M.D. degree in 1962 at the University of Oklahoma. He came to Duke first as an intern in 1962 and then served a research fellowship and residency. Returning to Duke in 1969 as associate in medicine, he received promotions to assistant and associate professorships in 1970 and 1972, respectively. McKee also holds an appointment in biochemistry.

Silberman, 44, from Newark, N.J., received his M.D. in 1956 at Washington University in St. Louis. His internship and residency were at Duke, and he was a clinical associate at the National Cancer Institute. Appointed to the faculty as assistant professor in 1965, he was promoted to associate professor in 1969.

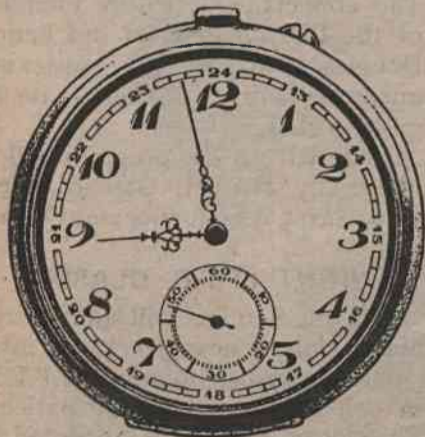
Tindall, 41, was born in Kissimmee, Fla., and earned his M.D. degree at Duke in 1959. He served his residency in dermatology at Duke and was appointed to the faculty as assistant professor in dermatology in 1967. He was promoted to associate professor in 1970.

Other promotions included: —Dr. Marcos J. Pupkin, to associate professor of obstetrics and gynecology.

—Dr. Jay S. Skyler, to assistant professor of medicine.

—Dr. Ingeborg H. Talton, to associate professor of anesthesiology.

—Dr. Redford B. Williams, to associate professor of psychiatry.



## Regular Time Begins Sunday

Eastern Standard Time will commence on Sunday, Oct. 26, at 2 a.m. University clocks will be turned back one hour then to reflect the new time standard.

Employees who don't want to show up an hour early for work on Monday morning should remember to set their own clocks back as well.

