Pole teaches.

Continued from page 1

The object of the theory is to understand and predict the response of any type of detector to any type of radiation, Waligorski said.

A detector is anything that changes form or appearance when exposed to radiation. Biological detectors, like human cells, are detectors because cells die when exposed to radiation. Physical detectors include chemical compounds that glow when exposed to radiation. A photographic emulsion that is exposed by radiation is an example.

"There is no conceptual difference between biological detectors and physical detectors," Waligorski said. "It's just that biological detectors are more complicated."

Using track theory, Katz and Waligorski are attempting to explain how each detector works and how each detector's response is related to the type of radiation, he

Track theory important

Track theory is important in the treatment of cancer because different types of radiation effect cancer cells differently.

"In treating cancer cells, you want to use a type of radiation that will 'kill'-that is damage so the cell can't reproduce-about 50% of the cancer cells. You also want to know how far below the skin the radiation will have its greatest killing effect," he explained.

For example, if a tumor is five inches below the skin, radiation that kills the greatest number of cells five inches

after it enters the body would be the best radiation for treatment.

Katz and Waligorski are studying heavy ion radiation because they think it would allow precise treatment of a tumor when combined with the predictions of track

Predictions accurate

Last fall tests were conduted by a research group at the Lawrence Berkeley Laboratory in Berkeley, Cal., to determine the number and depth at which human kidney cells were killed by carbon ion, neon ion, and argon ion radiation. Using track theory, Katz was able to accurately predict the outcome of the tests, Waligorski said.

Katz based his predictions on four variables: the radius of the kidney cell nucleus, the number of "sensitive targets" in the nucleus, the sensitivity of those targets to radiation, and the radius of the target.

Katz said the sensitivity targets correspond to genes within the nucleus of the cell that, when damaged by radiation, interfere with the cell's reproduction.

"The results were excellent," Katz said. "There was an excellent correspondence between the theoretical predictions and the experimental findings."

Waligorski said that work on physical detectors also is promising, because it may be possible to produce detectors that simulate biological detectors. Tests with physical detectors would save time and money because tests with biological detectors such as kidney cells are lengthy and costly.

Smoother traffic flow goal of major changes

Major changes in procedures are in effect to ease traffic movement (before and after) UNL basket-ball games at the Bob Devaney Sports Center, according to Capt, Clifton Koch of the Lincoln

"The purpose will be to even out the flow of traffic along major arterial streets leading to the Sports Center to reduce the risk of bottlenecks and tie-ups," he said,

Koch also said the success of the new procedures depends on driver behavior more than any-

Motorists are urged to promptly obey instructions from officers directing traffic, he said.

"The officer is reacting to a problem ahead and out of sight of the driver but known to the officer through radio communication," he said.

Fans are encouraged not to park on streets. particularly where prohibited by signs. Police will ticket violating vehicles and will impound vehicles which interfere with traffic, he said.

Koch urges fans to "plan" their routes from the Sports Center, based on where they park.

Principal streets to and from the complex are 14th, 17th and 27th, Each of these streets permits access to major arterials leading to all points in Lincoln, to Omaha, and to western Nebraska.

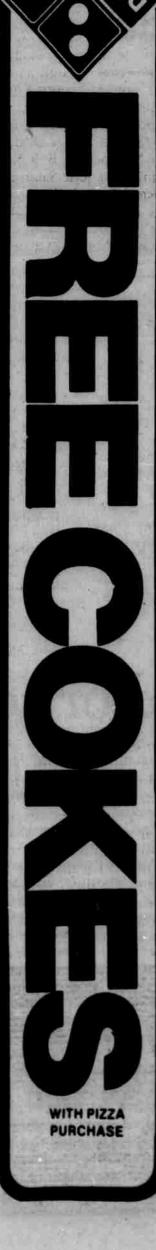
Assistant Police Chief John Miller said the department has had few problems this year with game traffic control. "The success," Miller explained, "is because of new procedural changes, as well as improved weather conditions."

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