From: Leah D Nixon
To: Archive; Shelly L Armstrong
Subject: Ferris Professor Seeks New Generation of Sunscreen
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Included below is a press release regarding skin cancer research by Ferris State University professor of Biology James Hoerter. May is Skin Cancer Awareness Month. Further information is available by contacting Leah Nixon, assistant director of News Services.

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Leah Nixon
Ferris State University
Assistant Director of News Services
leahnixon@ferris.edu, (231) 591-5604

Ferris professor seeks new generation of sunscreen

BIG RAPIDS – Ferris State University Biology professor James Hoerter is spending the month of May, which is Skin Care Awareness Month, in Dublin, Ireland, concentrating on research that could result in a new generation of sunscreen.

Hoerter is conducting his research at the Dublin Institute of Technology's FOCAS Institute/Radiation and Environmental Science Research Center through June while on a Fullbright fellowship that began in January.

Hoerter is especially interested in trying to unlock the mechanisms behind skin cancer. He is working with DIT scientists using nanotechnology to tag stem cells to discover if they are target cells for damaging rays of sunlight. Hoerter says that if the pigment stem cells (melanocytes) are damaged, the damage will be retained and passed on to each succeeding generation as new cells replace worn cells, which explains how severe sunburns in childhood can increase the chance for developing melanoma later in life.

"If it can be determined how normal cells react to sunlight, it might be possible to develop sunscreens that are more effective by increasing the ability of cells to naturally protect themselves," explained Hoerter. "We also continue to look for potential cell markers that could be used to predict how likely a person may develop melanoma. Many of us now think that melanoma may be the result of accumulated mutations in skin stem cells that occur over a lifetime of sunlight or tanning-bed exposure."

Hoerter is making use of the DIT's advanced research equipment, including a solar simulator that permits precise measurement of solar radiation. The simulator helps study how variations in solar intensity – caused by atmospheric conditions, time of day, seasonal changes and geographical location – influence how a cell responds to radiation.

"It was assumed that total solar dose, not its intensity, determined the extent of cellular damage and the how the cell turned on its defenses," said Hoerter. "Contrary to this belief, we showed that intensity makes a big difference."

Hoerter says that those research findings (being published this month in the *International Journal of Radiation Biology*) have important implications for evaluating the safety of tanning beds, "which deliver radiation from some segments of the solar spectrum that is up to three times the intensity of normal sunlight," he noted.

Leah Nixon
Assistant Director of News Services
University Advancement & Marketing
420 Oak Street, PRK 101
Ferris State University
Big Rapids, MI 49307-2031
(231) 591-5604 / fax (231) 591-2985