

MEDICAL
BRIEFS

Mammography screen

Starfish Family Services is hosting the Karmanos Mobile Breast Detection Center at its administration building in Inkster 9 a.m. to 3 p.m. Friday, Aug. 24. Services provided on the mobile screening mammography which is read by a board-certified radiologist. Results are mailed to both the patient and her physician. Women covered by an HMO or other managed care health plan should seek a referral for this service from their primary care physicians or providers. Third party insurance plans including Medicare and Medicaid are accepted, although the office charge for the breast exam may not be covered. To make an appointment call (800) KARMANOS (627-8266) or Starfish (734) 728-3400.

MDA volunteers

Volunteers from throughout greater Detroit are needed to help with the Jerry Lewis MDA Telethon Sept. 2-3. Call MDA (810) 274-9000. Volunteers must be at least 16 years old.

PMS/PMDD study

A Farmington Hills physician is studying the use of a nasal spray to alleviate the symptoms of premenstrual syndrome and premenstrual dysphoric disorder. Dr. Ronald Rosenberg hopes the compound under investigation will bring relief to 40 percent of the women who seek treatments for the disorders. The investigational compound, PH80 is designed to stimulate nerve receptors located just inside the nasal passages. PH80 is being evaluated for its potential to act quickly and in minute dosages to relieve symptoms of PMS/PMDD.

Cancer study

Sixteen Michigan Hospitals have joined forces to take part in the Selenium and Vitamin E Chemoprevention Trial (SELECT). The study, funded by the National Cancer Institute, will include more than 32,000 healthy men to evaluate selenium (a micro-nutrient found in food and supplements) and Vitamin E (alpha-tocopherol) to determine their effectiveness in preventing prostate cancer. The study is seeking African-American men at least 50 years of age and men from other ethnic and racial groups that are at least 55 years of age. Men who join SELECT must not have had any other cancer, except non-melanoma skin cancer, in the last five years. They must also be in generally good health. Call (800) 4CANCER.

Cancer screenings

The Barbara Ann Karmanos Cancer Institute is offering low-cost and no-cost breast and cervical cancer screenings to uninsured and underinsured women ages 40-64 with low incomes. The Breast and Cervical Cancer Control Program services are provided at more than a dozen health care centers, including the Karmanos Cancer Institute, The Detroit Medical Center, Henry Ford Health System, Oakwood Hospital, St. John Health System, Garden City Hospital and several community health centers. Call (888) 242-2702 between 8 a.m. and 6 p.m. weekdays.

We want your health news

There are several ways you can reach the Observer Health & Fitness staff. The Sunday section provides numerous venues for you to offer newsworthy information including Medical Databases (upcoming calendar events), Medical Newsletters (appointments/new hires in the medical field) and Medical Briefs (medical advances, short news items from hospitals, physicians, companies). We also welcome newsworthy ideas for health and fitness related stories. To submit an item to our newspaper you can call, write, fax or e-mail us.

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Cutting-edge laboratory

Livonia professor leads biosensor research

BY MAUREEN MCGERTY
SPECIAL WRITER

The world's most amazing feats are no longer done with mirrors; today's magic is accomplished through a new order of sensors, specifically biosensors — a tour de force produced by "good science" to influence human health.

Leading biosensor research and development is Livonia resident Gregory W. Auner, professor of electrical and computer engineering and bioengineering in the College of Engineering at Wayne State University in Detroit.

Dr. Gregory Auner

While silicon has long been used as a primary conductive component in many types of sensors, advanced materials — wide-band gap materials — micro-machined with lasers by Auner are harder, stronger and mesh better with human tissue.

These wide-band gap materials, pioneered by Auner over the last decade, are used in creating "smart" chips that may one day revolutionize how blood is analyzed, how breast cancer is detected, and how blindness, particularly inherited retinal diseases like macular degeneration and retinitis pigmentosa, are treated by medical professionals.

"We develop these chips and encapsulate them in their bio-compatible material," said Auner, noting that biocompatible materials include platinum and iridium. "The integrated chips either deliver an electrical (or chemical) stimulation to tissue ... other applications of current interest are the development of aluminum nitride into surface acoustic wave devices for chemical and biological sensing applications."

What Auner initiated in 1991 as a one-lab program in WSU's College of Engineering has evolved into the nationally recognized Institute for Smart Sensors and Integrated Microsystems (SSIM) Laboratory — five connecting labs comprising a cen-



Progressive: Dr. Gregory Auner and Dr. Margarita Thompson, assistant professor-research, look at a silicon wafer.

tral facility currently undergoing another renovation. SSIM's expansion is being funded by a recent \$6.5 million donation in equipment by Delphi Automotive Systems.

Supporting sponsors

Major SSIM funding comes from a variety of sources: the National Science Foundation, National Institutes of Health, Karmanos Cancer Institute, Ford Motor Co., General Motors Corp. and the WSU Institute for Manufacturing Research.

"The lab as a whole is basically an atoms-to-man approach," said Auner. "We do everything from automotive, aerospace, communications and energy to biomedical, but about 80 percent of what we do is biomedical."

Topping SSIM's growing list of biomedical research projects is vision

restoration or artificial vision, among others such as cancer detection and blood analysis. Currently under development are retinal and cortical implants, two types of tiny devices embedded with an integrated circuit chip.

Multi-disciplinary teamwork among engineers, scientists, researchers and surgeons drives SSIM's ongoing innovative research and development. Other collaborative associations with the Kresge Eye Institute at the Detroit Medical Center and the Karmanos Cancer Institute move pure theory and research into realms that can ultimately improve life for the average person.

For example, as one of four directors of the Ligon Research Center of Vision, Auner collaborates with the center's director, Dr. Gary Abrams,

chair of ophthalmology at WSU's School of Medicine and director of the Kresge Eye Institute at the Detroit Medical Center; Dr. Raymond Iezzi, a retinal surgeon with a master's degree in biomedical engineering who directs the retinal implant project; and J. Patrick McAllister II, Ph.D., who directs the cortical implant project.

Paving the way

The Ligon Center is a matrix of about a dozen labs located in WSU's engineering and medical schools dedicated to the development of retinal and cortical implants. Named for Michigan businessman, inventor and philanthropist Robert Ligon, the center embodies his dream of finding a cure for blindness. His initial \$5 million contribution kick-started the research in 1997.

Prototypes of a retinal implant, still in a "primitive" stage of development, may one day aid people who suffer from inherited retinal diseases, such as retinitis pigmentosa and macular degeneration, as well as diabetes and trauma-induced blindness.

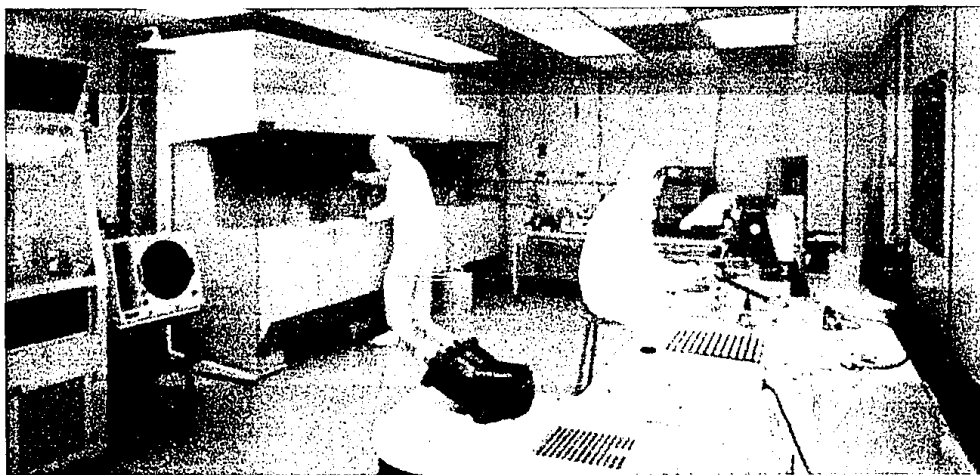
"Some patients inherited retinal diseases, such as retinitis pigmentosa or macular degeneration, could benefit from an implant — a tiny chip placed inside the eyeball that could stimulate the neurons of the retina that remain healthy in these diseases," Iezzi said.

"Many... involve the breakdown of only a subset of the cells in the retina. The retina is the structure in the eye that converts light into neuronal impulses that the brain can understand. So, the retina turns light into neuronal impulses that the brain can understand and in some ways it's like the film of a camera. It's in charge of taking a picture. The rest of the eye is in charge of focusing the light on the retina and controlling the amount of light and also orienting the eye to the correct position in the visual world."

The "smart" chip in the implant distributes electrical signals to an array of tiny electrodes imbedded in the device which, in turn, communicates via electrical impulses with the neurons in the eye and brain.

"These patients with retinal degeneration often times have only a small subset of [retinal] cells not functioning, which leaves other cells intact,"

Please see RESEARCH, D5



Environment: Students work in the clean room of the Smart Sensor Lab at Wayne State University.

Blood donations are always needed



BY ALICE ASHMORE
STAFF WRITER

What if you need a blood transfusion, but were not able to have it due to a shortage of blood?

That is the situation being faced by some patients in the Chicago area, and the dwindling blood supply could soon put patients in the metro Detroit area into the same dilemma. Julie Sproul, director of marketing

at St. Mary Mercy Hospital in Livonia, said the hospital received an urgent call from the American Red Cross regarding the blood supply.

"This information was shared because the trend for blood shortages usually moves across the country from west to east."

The Southeastern Michigan Red Cross is beginning to see the same trend in our area, Sproul said.

When supplies are low

Blood is typically in short supply during the summer months.

"During the summer there are more elective surgeries and more automobile accidents that require extra blood," said Sherri Fletcher, director of fund development and volunteer services at St. Mary Mercy.

Fletcher said that according to Red Cross statistics, southeast Michigan uses 250,000 pints of blood annually. "Only 200,000 of those are donated locally. We receive 20 percent of our blood from other sources," Fletcher said. "Donating makes a big difference."

To donate blood you must be at

least 17 years old, weigh at least 110 pounds and be in generally good health.

Fletcher said that only sterile, disposable equipment is used in the collection process.

"There is absolutely no chance of being infected with any blood related illness," she said.

St. Mary Mercy Hospital is holding a community blood drive 7 a.m. to 5:45 p.m. Thursday, Aug. 23, in the hospital's auditorium.

Please see DONATIONS, D5