

Detroit research team to expand imaging technology to guide cancer treatment

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A team of Wayne State University and Barbara Ann Karmanos Cancer Institute researchers recently received funding from the National Cancer Institute of the National Institutes of Health to expand the use of Positron Emission Tomography (PET) in cancer therapy.

treatment outcome. Their findings may help develop immunoPET, which, in turn, will guide patient treatment in a non-invasive way.

Provided by Wayne State University

PET imaging is a common tool used in cancer diagnosis. Wei-Zen Wei, Ph.D., the Herrick Chair of Cancer Research at the Barbara Ann Karmanos Cancer Institute and professor of oncology and immunology and microbiology in the School of Medicine at Wayne State University, along with Nerissa Viola-Villegas, Ph.D., assistant professor of oncology in Wayne State University's School of Medicine and the Karmanos Cancer Institute, plan to expand the use of this technology with the help of the two-year, \$368,445 grant, "Directing Cancer Immunotherapy and Real-Time ImmunoPET."

According to Wei, current immune-based therapies are effective in some patients with existing anti-tumor immunity, but most are not responsive, therefore revealing the need for immune priming and non-invasive monitoring strategies.

Wei and Viola-Villegas will expand PET imaging technology for cancer immunotherapy by imaging [dendritic cells](#)—the specialized [white blood cells](#) that can trigger tumor-fighting immunity. Cancer treatment that brings more dendritic cells into a tumor is more likely to cure cancer.

"Assessing if cancer treatments are effective is often invasive and difficult," said Joseph Dunbar, Ph.D., director of special operations in the Office of the Vice President for Research at Wayne State. "Drs. Wei and Viola-Villegas' method of using PET imaging will be a less invasive, strong indicator of whether cancer treatments are effective."

The research team will develop new imaging probes to detect dendritic cells in the tumor, which will measure the dendritic cells and predict

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