Enabling Personalized Therapies to Fight Cancer

This grant project explored new ways to measure cancer tumor progression.

Description: The Positron Emission Tomography Imaging of Tumor Angiogenesis project investigated noninvasive positron emission tomography (PET) scan markers that will allow clinicians to personalize cancer therapy.

Relevance: PET scans can help identify cancer patients who will benefit from a particular type of therapy, guide the administration of the right drug at the right time and show doctors whether the therapy is working. This “personalized medicine” approach will also have applications in other diseases such as heart attack and stroke.

Results: The project worked on optimizing the radiochemistry for labeling cancer-binding peptoids, in addition to creating several new tracers for PET imaging of tumor growth and cancer progression. These tracers can specifically bind to receptors that are overexpressed on tumor vessels, such as CD105 and VEGFR, which are known to correlate with poor survival of cancer patients. The principal investigator has secured $2.4 million in research grants, and several major grants are pending. The PI has published 16 articles related to this grant and is teaching a dedicated course (Medical Physics 719) on molecular imaging at UW-Madison, a unique undertaking that has been well reviewed.

Published articles: