



## **BIOEN 509 – DEPARTMENTAL SEMINAR SERIES**

**Thursday, Feb. 25 2010, 12:30-1:20 PM**  
**Foege Bioengineering Building N130A**

# **Addressing the issue of kidney localization in the development of alpha particle-emitting therapeutic radiopharmaceuticals**

*Dr. Scott Wilbur*

*Professor, Department of Radiation Oncology*

Effective treatment of metastatic disease has been a major impediment to obtaining cures in cancer patients. The disseminated nature of metastatic disease makes it impossible to treat with external beam irradiation, and the cancer cell's ability to form resistance to chemotherapy has made that form of therapy ineffective. An alternative therapeutic approach, that of systemic delivery of targeted alpha particle-emitting radionuclides, appears to hold great potential to treat metastatic cancer. However to realize that potential, cancer targeting agents must be developed that are highly selective for localization on cancer cells without localization in normal organs, such as kidneys. In the development of alpha-emitting radiopharmaceuticals, our research group has had to address the issue of kidney localization of reagents being developed to target alpha-emitting radionuclides to cancer cells. In the presentation, approaches to decrease kidney localization of modified intact monoclonal antibodies, their Fab' fragments, streptavidin and biotin derivatives will be given.

*Dr. Wilbur received his B.S. in chemistry from Portland State University in 1973. Following that, he worked at the Oregon Graduate Center in Beaverton, Oregon on C-nucleoside chemistry through the summer 1974. He then attended graduate school at the UC-Irvine studying synthetic organic chemistry and mechanisms of ketene dimerizations. Dr. Wilbur received a Ph.D. in Chemistry from UCI in 1978. After obtaining the Ph.D., he was hired as a Staff Member in the Medical Radioisotope Research group at the Los Alamos National Lab in New Mexico. At LANL he worked on the development of new radiolabeling methods for introducing diagnostic and therapeutic radionuclides into biomolecules. He left LANL in 1984 to join a new start-up biotechnology company, NeoRx Corporation, in Seattle. At NeoRx he worked on the development and scale-up of methods for radiolabeling monoclonal antibodies for use in diagnosis and therapy of cancer. It was in NeoRx that he became interested in the potential for using alpha-emitting radionuclides for systemically delivered targeted radiotherapy of cancer. In 1990, Dr. Wilbur joined the UW Dept. of Radiation Oncology. At UW he has continued his studies on development of reagents for targeted radionuclide therapy, and has developed several collaborative efforts with investigators at the Fred Hutch. More recently his research has been primarily focused on the development of reagents for alpha-emitting radiopharmaceuticals.*



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