

The Department of Cell Biology and Neuroscience presents:

Special Guest Seminar

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Department of Pathology

Division of Human Gene Therapy

Division of Molecular and Cellular Pathology

## Multifunctional Potential of Nanotechnology and Gene Therapy for Cancer



Development of novel therapies remains essential for treatment of cancer; in this regard, nanotechnology holds great promise. For example, tumor imaging opportunities have expanded by the development of quantum dots (QDs), and novel tumor treatment opportunities are exemplified by the use of gold nanoparticles (AuNPs). However, for all these applications of metal nanoparticles, selective tumor targeting is crucial for successful clinical application. Considering the progress made in targeting adenoviral (Ad) gene therapy vectors to tumors, we aim to couple metal nanoparticles to targeted Ad vectors to achieve selective tumor accumulation. We have demonstrated that metal nanoparticles such as QDs and AuNPs can indeed be coupled to Ad vectors, without compromising viral infectivity, retargeting ability or function of the nanoparticles. This innovative combination strategy is therefore expected to lead to the development of a unique methodology for cancer imaging, detection and treatment.

**Monday, June 30th, 2008 - 4:00 pm**  
**Chemistry/Biochemistry Bldg. Seminar Room**