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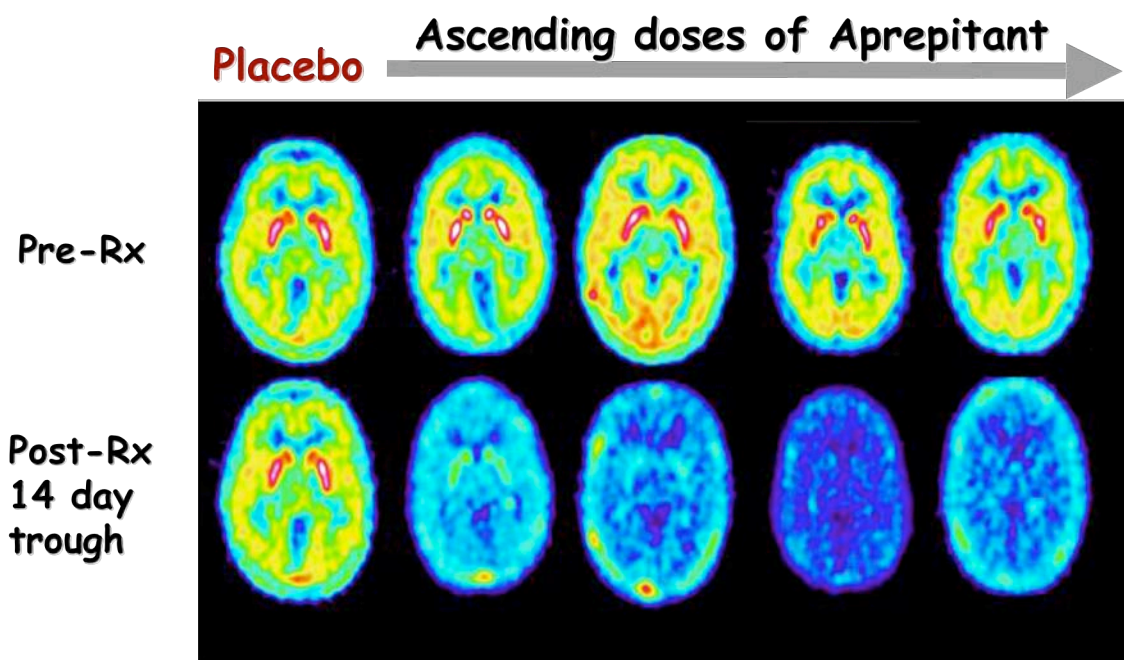
**Seminar Series**

# Imaging in Drug Discovery and Development

**Raymond Gibson**

*Senior Investigator*

*Merck, Sharp and Dohme Research Laboratories*



$[^{18}\text{F}]$ SPARQ as tracer

**4pm, Wed, Sep. 26, 2007**

**Auditorium of the Center for Imaging Science**

**[www.cis.rit.edu/seminar](http://www.cis.rit.edu/seminar)**

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## **Abstract**

With the desire to develop novel drugs faster and more cost-effectively, drug companies are searching for clear strategies to manage the complex drug discovery process in terms of balancing costs, time, product value and possibility of success. To this end positron emission tomography (PET) is being utilized to aid in optimizing the decision making process. PET is a non-invasive imaging technique that provides a means to obtain information on drug effects and/or behavior during development (i.e. radiotracer delivery, occupancy etc). Once the occupancy/kinetics of the successful first generation drug have been characterized via imaging, imaging can be used to demonstrate that a second generation drug exhibits occupancy and kinetics which are similar to or better than the primary drug.

The Imaging Department at Merck currently has the capability of utilizing a variety of imaging modalities to facilitate drug discover and development: PET and microPET, SPECT and microSPECT, MRI/MRS, HiRes Ultrasound and CT. The presentation will focus primarily on the uses of PET in drug research and development in both small (rodent) and large animal (non-human primate) models and examined some of the principal issues that PET is being used to address in terms of developing novel drugs.

## **Speaker Bio**

Raymond Gibson is a Senior Investigator at Merck/MSDRL. While his primary effort over his career has been in the development and use of novel radiotracers for nuclear imaging, over the past several years, several new imaging modalities have been brought into the company including microCT (e.g., the GE Locus Ultra) and high-resolution ultra-sound, both of which came under his direction to demonstrate their utility for drug development. In 1991, several within MRL decided that a meeting on the applications of imaging to drug discovery and development might be of interest/value to investigators in the industry and academia. At that time, many of the issues important to pharmaceutical companies were not appreciated in academic institutions, and many scientists in the industry did not know how best to use imaging in their development programs. This first meeting eventually led to the founding of the Society for Non-Invasive Imaging in Drug Development (SNIDD), a society for which he is a co-founder. SNIDD is now a part of the Academy for Molecular Imaging. His current interest lies in the development of the careers of those he works with. His background and experience are extensive and he feels it important to spread that knowledge to colleagues as one of his primary purposes.