Reducing Patient Radiation Exposure

The project tested a promising technique to reduce radiation dose during CT scans.

**Description:** Though CT scans have revolutionized the practice of medicine in the past 40 years, there is growing concern over the radiation exposure, especially for coronary and pediatric patients. **Computed Tomography (CT) with Reduced Radiation Dose Using Prior Image, Constrained Compressed Sensing (PICCS) Reconstruction** tested the PICCS technique, invented at the UW School of Medicine and Public Health, which could reduce the radiation dose needed for CT scans by 90 percent or more.

**Results:** The scope of research was expanded when the PICCS technique was introduced into the virtual colonoscopy program to reduce the radiation dose from that procedure. Investigators have also applied PICCS to improve the image quality of low-dose chest CT scans. Initial results in applying the low-radiation technique have been promising.


**Next Steps:** Project leaders are refining the PICCS algorithm and demonstrating its ability to provide images of equal diagnostic quality with much less radiation than with current reconstruction methods.

**Computed Tomography (CT) with Reduced Radiation Dose Using Prior Image, Constrained Compressed Sensing (PICCS) Reconstruction**

*Principal Investigator:* Christopher Francois, MD, Radiology, SMPH

*Grant Program:* New Investigator

*Award:* $90,000 over two years