

**DUKE RADIATION DOSIMETRY LABARATORY**  
**EQUIPMENT AVAILABLE FROM DUKE RADIATION SAFETY DIVISION**

Equipment	Utilization
NIST traceable neutron calibration source 5Ci AmBe $1.120 \times 10^7$ n/s (cal 9-11-2006)	For calibration of neutron monitors and detectors
Harshaw automatic TLD reader and TLD-100 chips	For R&D applications; human and animal dosimetry
Panasonic Automatic Reader model UD-710A, TL Badge System and Panasonic TLD badges	For environmental radiation monitoring
Dual Cs-137 calibration sources	Calibration of survey meters
MOSFET detector systems include AutoSense and mobile MOSFET systems (shared with DRDL)	Real-time radiation dosimetry; validation of Monte Carlo codes; small animal dosimetry, patient dosimetry, phantom dosimetry
Adult and pediatric anthropomorphic phantom (CIRS, Norfolk, VA) (Shared with DRDL)	Human dosimetry studies
Nal(Tl) thyroid counter	Thyroid bioassay program
Nal(Tl) whole body counter	Internal dosimetry
Various gamma and neutron survey meters; beta and alpha survey meters, ion chamber survey meters	Radiation protection surveys of gamma and neutrons
Packard Cobra Auto-Gamma counter	Assay of gamma emitters
Packard Tri-Carb LS Analyzer 2900TR	Assay of beta and gamma emitters
Various beta and gamma check sources	Calibration of counting equipment
JL Shepherd Mark I Cesium-137 irradiator	Small animal/cell culture irradiator applications
AGFA X-rad 320 orthovoltage irradiator	Small animal irradiator applications
Duke Bonner Spheres	Measurements of primary and scattered neutron spectra in room using "spectra unfolding" technique
Far West tissue equivalent counter	measures dose as function of LET
Far West twin ion chamber	separate neutron dose and gamma dose using two ionization chambers

Equipment	Utilization
Lecture recording system "DukeCapture"	The infrastructure exists for automated lecture and event capture across the Duke Campus. At the core of this program currently is a tool called <b>Lectopia</b> , a technology which allows for automatic publication to virtually any Duke delivery servers, including streaming and podcasting servers, Blackboard, and iTunes U. Events can be captured in audio, video, and VGA formats—or a combination of all
Liquid scintillation counter	To be used for health physics laboratory
Radiographic x-ray machine	To be used for radiology imaging laboratory
Gamma camera/SPECT unit	To be used for nuclear medicine physics/health physics laboratory training
Dose calibrator	To be used for nuclear medicine and health physics laboratory training
Ortec digiDART	Portable MCA
Mercuric Iodide detector, Constellation Technology	Nuclear counting, to be used with Ortec digiDART