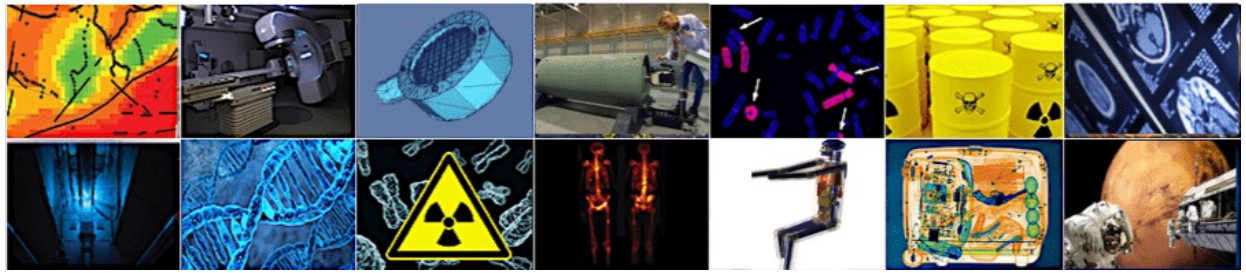
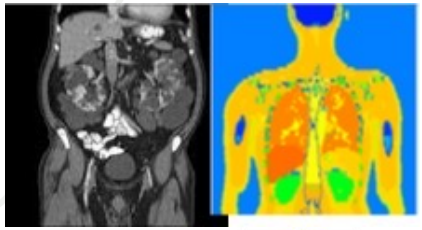
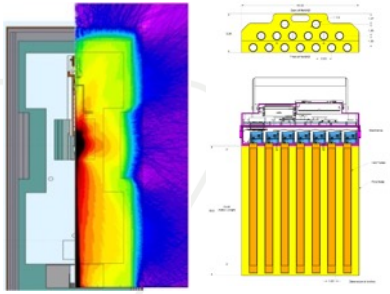
RED²

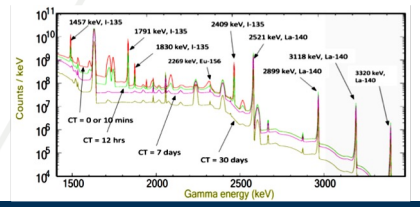
Radiological Engineering, Detection, and Dosimetry



Mission: The **Radiological Engineering, Detection, and Dosimetry (RED²) Laboratory**, led by **Dr. Shaheen Dewji**, conducts innovative, interdisciplinary research focusing on harnessing both computational capabilities in Monte Carlo radiation transport modeling and experimental measurements for applications in radiation detection, radiation protection and shielding, dosimetry, health physics, and nuclear materials accounting.

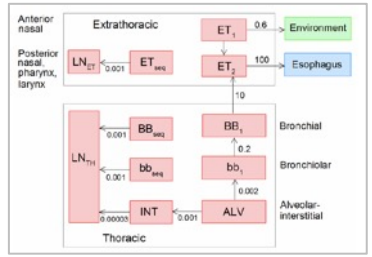






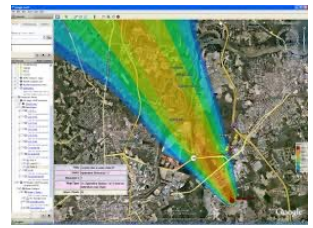
Computational Dosimetry and Shielding

- Development of dose coefficients and shielding design using Monte Carlo radiation transport codes
- Age/sex-specific anthropomorphic computational phantoms
- Radionuclide biokinetic models for emergency response and nuclear medicine



Radiation Detection

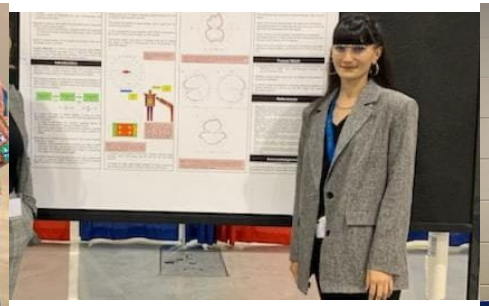
- Employment of validation and verification of gamma-ray spectroscopic detector responses
- Contaminated environmental media for environmental assessment and decommissioning
- Field triage of uptake during nuclear, radiological, and fission product release events

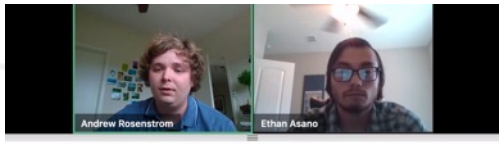


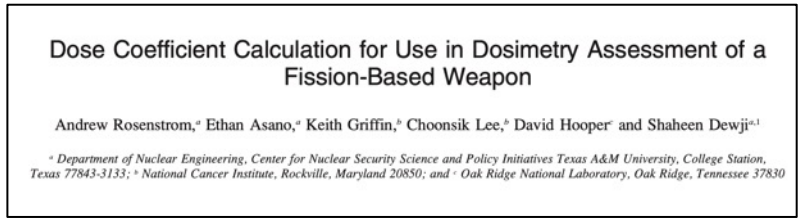
Nuclear Nonproliferation and 3S (Safety, Security & Safeguards)

- Nuclear materials control, accounting, and safeguards of SNM
- Gamma-ray spectroscopic analysis for safeguards by design of of advanced non-LWR reactors
- Neutron multiplicity counting for field search/detection and criticality safety

Georgia Tech






Dose Coefficient Calculation for Use in Dosimetry Assessment of a Fission-Based Weapon

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RED2
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Funding Agencies and Collaborators

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