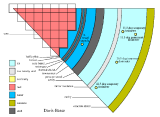
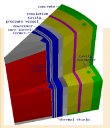
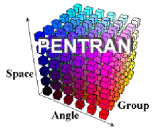
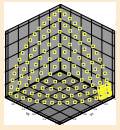
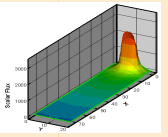
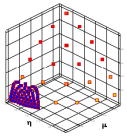
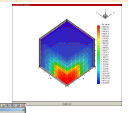
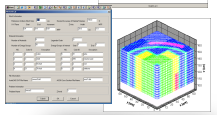
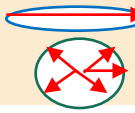
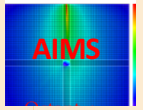
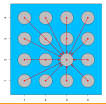
VT^{3}G Milestones & Contributing Current/Former Students (1986-2015)

1986-1989	• Vector computing of 1-D Sn spherical geometry algorithm • Development an adjoint methodology for simulation TMI-2 reactor	Prof. Haghighat
1989-1992	• Vector and parallel processing of 2-D Sn algorithms • Simulation of Reactor Pressure Vessel (RPV)	Prof. R. Mattis, Pitt. Prof. B. Petrovic, GT 
1992-1994	• Parallel processing of 2-D Sn algorithms & Acceleration methods • Determination of uncertainties in the RPV transport calculations	Dr. M. Hunter, W Prof. B. Petrovic, GT
1994-1995	• 3-D parallel Sn Cartesian algorithms • Monte Carlo for Reactor Pressure Vessel (RPV) benchmark using Weight-window generator; deterministic benchmarking of power reactors	Dr. G. Sjoden, DOD Dr. J. Wagner, ORNL 
1995-1997	• Directional Theta Weight (DTW) differencing formulation • PENTRAN (Parallel Environment Neutral Particle TRANsport) code system • CADIS (Consistent Adjoint Driven Importance Sampling) formulation for Monte Carlo Variance Reduction • A^{3}MCNP (Automated Adjoint Accelerate MCNP)	Prof. B. Petrovic Dr. G. Sjoden, DOD Dr. J. Wagner, ORNL 
1997-2001	• Parallel Angular & Spatial Multigrid acceleration methods for Sn transport • Hybrid algorithm for PGNNA device • PENMSH & PENINP for mesh and input generation of PENTRAN • Ordinate Splitting (OS) technique for modeling a x-ray CT machine 	Dr. V. Kucukboyaci, V Dr. B. Petrovi, GT Prof. Haghighat Prof. Hgahighat 
2001-2004	• Simplified Sn Even Parity (SSn-EP) algorithm for acceleration of the Sn method • RAR (Regional Angular Refinement) formulation • Pn-Tn angular quadrature set • FAST (Flux Acceleration Simplified Transport) • PENXMSH, An AutoCad driven PENMSH with automated meshing and parallel decomposition • CPXSD (Contributon Point-wise cross-section Driven) for generation of multigroup libraries 	)r. G. Longoni, PNNL)r. A. Patchimpattapong, AEA)r. A. Alpan, .Vestinghouse  
2004-2007	• TITAN hybrid parallel transport code system & a new version of PENMSH called PENMSHXP • ADIES (Angular-dependent Adjoint Driven Electron-photon Importance Sampling) code system 	Dr. C. Yi, GT Dr. B. Dionne, ANL 
2007-2011	• INSPCT-S (Inspection of Nuclear Spent fuel-Pool Calculation Tool ver. Spreadsheet), a MRT algorithm • TITAN fictitious quadrature set and ray-tracing for SPECT (Single Photon Emission Computed Tomography) • FMBMC-ICEU (Fission Matrix Based Monte Carlo with Initial source and Controlled Elements and Uncertainties)	W. Walters, PhD Cand. Dr. C. Yi, GT Dr. M. Wenner, Westinghouse 
2011-2013	• New WCOS (Weighted Circular Ordinated Splitting) Technique for the TITAN SPECT Formulation • Adaptive Collision Source (ACS) for Sn transport incorporated into TITAN • AIMS (Active Interrogation for Monitoring Special-nuclear-materials), a MRT algorithm 	K. Royston, PhD Cand. W. Walters, PhD Cand. 
2014-2015	• TITAN-SDM - includes Subgroup Decomposition Method for multigroup transport calculation • TITAN-IR - TITAN with iterative image Reconstruction for SPECT • RAPID - Real-time Analysis for spent fuel Pool *in situ* detection 	N. Roskoff, PhD Stud. Dr. K. Royston Dr. W. Walters