

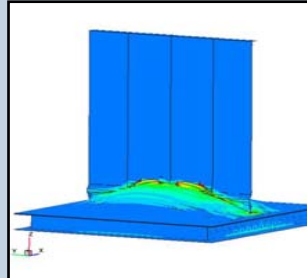
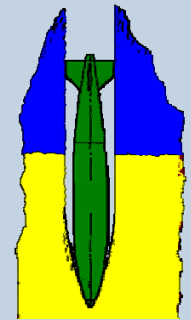
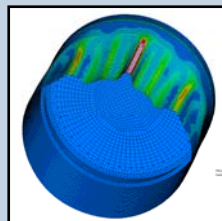
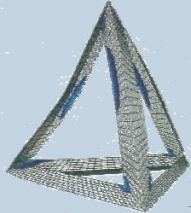


AREAS OF CONCENTRATION

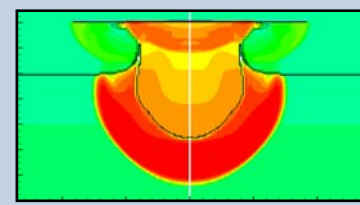
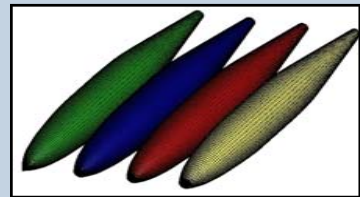
- ◆ Explosive Effects and Target Vulnerability
- ◆ Shock Physics
- ◆ Aero-Hydro Ballistics/ Supercavitation
- ◆ Structures/Mechanisms Dynamic Response
- ◆ Mines and Mine Countermeasures
- ◆ Underwater Weapon Design
- ◆ Advanced ASW Warheads
- ◆ Gun and Munition Design
- ◆ Reliability, Safety, and Effectiveness Studies
- ◆ Test Planning/ Direction and Data Analysis

ANALYSIS TOOLS

- ◆ DYNA3D and ANSYS Static and Dynamic Response
- ◆ DYSMAS, Advanced Coupled Eulerian/ Lagrangian
- ◆ CTH Eulerian Hydrocode
- ◆ 72 Processor Computer Cluster
- ◆ HPC Access
- ◆ SolidWorks
- ◆ Femap



$$P = \int k \left(\frac{W}{R} \right)^{\frac{1}{3}} \alpha$$

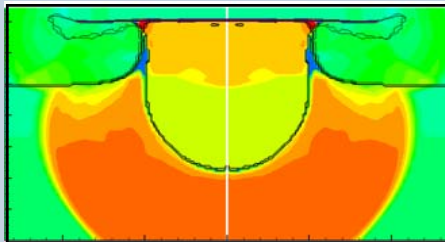
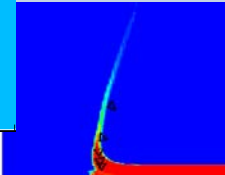
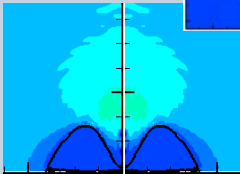
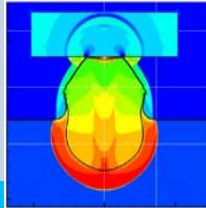
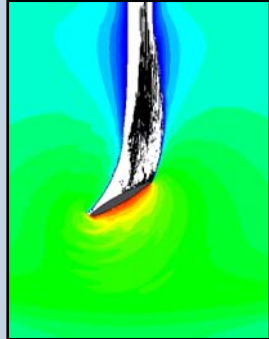


THE STAFF

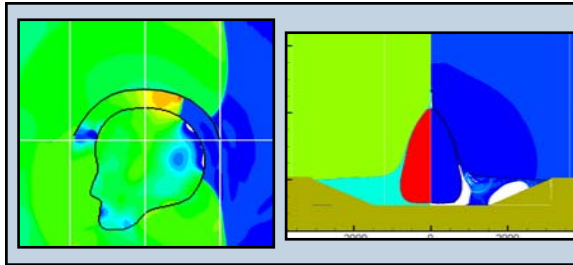
- ◆ **Dr. Jacques E. Goeller**, Chief Scientist, is a recognized national and international expert in the design and analysis of ordnance systems with specific expertise in systems engineering, aero-hydro ballistics, shock physics, structural analysis, warhead design and lethality assessment of weapons. He holds a BS, MS, and Ph.D. in Mechanical Engineering. He has fifty years of experience working in the design and analysis of surface launched and underwater weapon systems, and is Co-holder of the patent on the 30 mm Hydroballistic Armor Piercing Discarding Sabot (HAPDS) projectile used in the Rapid Airborne Mine Neutralization System (RAMICS) currently under acquisition development.
- ◆ **Dr. Andrew Wardlaw**, Principal Engineer, has 35 years experience at NSWC, specializing in CFD/hydrocode development and aerodynamics testing. He has developed widely used software such as ENTRY (water impact loads), ZEUS (missile aerodynamics) and GEMINI/ DYSMAS (UNDEX ship damage assessment). Andrew is the author of numerous journal articles and technical reports and holds a BS, MS and Ph.D. in Mechanical Engineering as well as a Masters degree in computer science from Johns Hopkins University.
- ◆ The Modeling and Simulation Group also employ a variety of highly qualified engineers who vary in background and possess unique qualifications. Collaboratively, they combine their different expertise to provide quality modeling and simulation services.



SAMPLE ANALYSIS DISPLAYS



MODELING AND SIMULATION GROUP



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