

**WALT GRAY
CURRICULUM VITAE**

B.S. in Aerospace Engineering, U.S. Naval Academy, 1978
M.E. in Mechanical Engineering, University of Virginia, 1987
MBA Our Lady of the Lake University, 1991
M.S. in Geology, University of Texas at San Antonio, 2000
Ph.D. in Geology, University of North Carolina, 2003

1978-1983: Commanding Officer, Battery K, 1st Battalion, 10th Marines, Camp Lejeune, NC. During 1982 and 1983 served as the Military Liaison to the Lebanese, French and Italian contingents of the Multi-National Force in Lebanon.

1983-1987: Design Engineer, Babcock & Wilcox, Naval Nuclear Fuel Division, Lynchburg, VA. Responsible for conducting mechanical and thermal analysis of various shipboard nuclear reactor components. Also worked in the areas of ceramic processing, technical marketing of ceramic-based products, and supervision of various subcontractors.

1987-2000: Senior Research Engineer, Southwest Research Institute, San Antonio, TX. Managed and conducted numerous analytical and experimental programs in the areas of ballistics, explosives, armor and gun systems, as well as the safety and hazards associated with flammable and detonable materials.

2000-2003: Ph.D. candidate and Teaching Assistant, Department of Geological Sciences, University of North Carolina at Chapel Hill. Taught laboratory courses in igneous and metamorphic petrology, and physical and optical mineralogy. Worked in isotope geochemistry laboratory conducting whole rock Pb, Sr and, Nd analysis, as well as U-Pb zircon geochronology. The analyses were performed utilizing ion exchange chromatography and thermal ionization mass spectrometry (TIMS). Conducted numerous mineral and whole rock chemistry studies using electron microprobe, DCP spectrometry, ICP-MS spectrometry, and X-ray diffractometry techniques.

2003-Present: Principal Engineer, Southwest Research Institute, San Antonio, TX. Program Manager responsible for management and conduct of experimental programs aimed at understanding the large-deformation response of large composite structures to blast and impact loadings. Developed and used numerical simulation programs (finite element and hydrocodes) to analyze response of space shuttle thermal tiles to impacts from ice and other debris.

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LIST OF PUBLICATIONS

Papers & Reports:

- Gray, W.** and Lankford, J., 1989, Composite Armor: in Concise Encyclopedia of Composite Materials, A. Kelly, Editor, Pergamon Press, Oxford.
- Gray, W.**, Mullin, S.A., Couque, H. and Blaylock, N., 1990, Heavy metal fragment effects with light armor: AFATL-TR-90-91, Eglin AFB, FL.
- Gray, W.** 2000, The petrogenesis and chemical evolution of the Kingsland Intrusive Center, Llano Uplift, Central Texas, [M.S. Thesis]: San Antonio, University of Texas at San Antonio, 239 p.
- Gray, W.**, 2003, Chemical and thermal evolution of the Late Cretaceous Tuolumne Intrusive Suite, Yosemite National Park, California, [Ph.D. Dissertation]: Chapel Hill, University of North Carolina, 202 p.
- Glazner, A.F., Bartley, J.M., Coleman, D.S., **Gray, W.** and Taylor R.Z., 2004, Are plutons assembled over millions of years by amalgamation from small magma chambers?: GSA Today, v. 14, no. 4/5, p. 4-11.
- Coleman, D.S., **Gray, W.** and Glazner, A.F., 2004, Rethinking the emplacement and evolution of zoned plutons: geochronologic evidence for incremental assembly of the Tuolumne Intrusive Suite, California: Geology, v. 32, p. 433-436.
- Walker, J. D., Chocron, S. and **Gray, W.** , 2007, Analytical models and hydrocode computations for debris impacting Space Shuttle thermal tiles: submitted to International. Journal of. Impact Engineering.
- Walker, J., Chocron, S., and **Gray, W.**, 2008, Modeling debris impacts into Space Shuttle thermal tiles: NASA Report JSC-64059, xxx p.

Presentations:

- Tullos, R.J., **Gray, W.** and Mullin, S.A., 1989, A hypervelocity launcher for simulated large fragment space debris impacts at 10 km/s: 30th Structures, Structural Dynamics and Materials Conference, (AIAA, ASME, ASCE) Mobile, AL.
- Gray, W.** and Saenz, O., 1995, Shock and impact sensitivity of neat and iron/nitric acid contaminated liquid propellant XM46: 32nd JANNAF Combustion Subcommittee Meeting, October 1995.
- Gray, W.** and Smith, R.K., 2000, The Kingsland intrusive center, Llano Uplift, Texas; a Mesoproterozoic A type granite (yes), anorogenic (probably not): Geological Society of America, Abstracts with programs, v. 32, no. 7, p. 454.
- Coleman, D.S., **Gray, W.** and Glazner, A.F., 2002, U-Pb geochronological evidence for incremental filling of the Tuolumne Intrusive Suite magma chamber: Geological Society of America, Abstracts with Programs, v. 34, no. 6 p. 269.
- Glazner, A.F., Taylor R.Z., Bartley, J.M. and **Gray, W.** 2002, Dike assembly of the Tuolumne Intrusive Suite, Yosemite National Park, California: Geological Society of America, Abstracts with Programs, v. 34, no. 6, p. 269.

- Gray, W.**, Glazner, A.F. and Coleman, D.S., 2003, Geochemical evidence for incremental emplacement of the Cretaceous Half Dome Granodiorite, Yosemite National Park, California: Geological Society of America, Abstracts with Programs, v. 35, no. 4, p. 18.
- Chocron, S., **W. Gray** and J. D. Walker, 2005, CTH simulations of foam and ice impacts into the Space Shuttle thermal protection system tiles: 22nd International Symposium on Ballistics, p. 1204-1211.
- Walker, J. D., Chocron, S., and **Gray, W.**, 2005, Analytical models for foam, ice and ablator impacts into the Space Shuttle thermal tiles: 22nd International Symposium on Ballistics, p. 1196-1203.
- Walker, J. D., Chocron, S., and **Gray, W.**, 2006, Computational and analytical modeling of foam, ice, and ablator materials impacting Space Shuttle thermal tiles: 47th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, May 2005, AIAA Paper 2006-179, 13 p.
- Gray, W.**, Sponsel, W. E., Weiss, C. E., 2008, Lens displacement mechanisms in dynamic blunt trauma events: Association of Research in Vision and Ophthalmology (ARVO) Annual Meeting 2008.
- Sponsel, W.E., **Gray, W.**, Bonvitch, A., Nicolella, D, Walker, J., and Scribbick, F, 2008, Paintball trauma: Mathematical models to assess blunt periocular injury reveal likely mechanism for optic nerve traction/avulsion: Association of Research in Vision and Ophthalmology (ARVO) Annual Meeting 2008.
- Gray, W.**, Smith, R.K., Gibbs, T.R., 2008a. Modeling fractional crystallization in the Mesoproterozoic Lone Grove batholith, Llano Uplift, central Texas. Geol. Soc. Am. Abstracts with Programs, 145-13.