

**Michael J. Taylor**

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Michael Taylor received a Bachelors of Science degree in Mechanical Engineering from the University of South Carolina in 1974 and a Masters of Science in Mechanical Engineering from the University of Tennessee in 1986. Additionally, he has completed post-graduate studies in finite-element computational mechanics and fluid mechanics, advanced natural convection heat transfer, analytical mechanics, and solution thermodynamics. Mr. Taylor joined the Oak Ridge National Laboratory (ORNL) in 1975 and is currently a Development Staff Member within the Computational Sciences and Engineering Division (CSED) with technical and program development responsibilities. Mr. Taylor's area of experience is applied scientific computing; that is, integrating basic sciences and their appropriate numerical methods with individual problem physics to produce numerical solutions for a wide variety of scientific, engineering, and operational problems. His principle research interest is the application of numerical heat conduction (NHC) and computational fluid dynamics (CFD), with special emphasis on coupled NHC/CFD/thermodynamic analyses. Scientific expertise includes numerical heat conduction, inverse heat conduction, enclosure radiation heat transfer, computational fluid dynamics with solidification, engineering thermodynamics, numerical optimization, process heat transfer with boiling and condensation, as well as deterministic and probabilistic economic analyses. Mr. Taylor has applied this expertise to the development of numerical solutions for an extremely diverse set of applications including gaseous diffusion uranium enrichment heat rejection systems, sensible- and latent-heat thermal energy storage systems, nuclear and coal-fired power plants, research reactor fuel systems, vacuum induction melting and casting, advanced military weapon systems, and the interdiction of smuggled nuclear materials. He has authored approximately 50 articles and technical publications, and has received two DOE Awards of Excellence for materials research modeling studies. Mr. Taylor's current activity is Business Development (BD) and Program Management (PM) for selected DOE and DoD projects within the CSED Modeling and Simulation Group (MSG). Responsibilities include concept development for all physics-based-modeling and systems-simulation capabilities within MSG, defining and coordinating development of software resources needed to support MSG's strategic BD goals, preparation of concept-specific briefing materials, initial customer contact, proposal preparation, and coordination of the problem-definition phase of new research. Once new work has begun, Mr. Taylor will frequently function as PM to maintain contact with the customer and coordinate with technical staff to insure the as-promised delivery of research results.