Development of a deep water oil reservoir is a multi-billion dollar investment. A significant part of that cost is building the subsea production systems (wells, pipelines, and export infrastructure). Maintaining flow (Flow Assurance) of the well fluids (oil, gas, water) is crucial to business case. This seminar discusses current aspects of Flow Assurance focusing on the modelling of multiphase flows and the uncertainties associated with these flows. The challenges being presented offer research opportunities for the academic world.

Lee Rhynes
Flow Assurance Team
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Lee is a member of Chevron’s Flow Assurance Team located in Houston, Texas. He grew up in Pennsylvania and obtained his B.S. Degree from Ursinus College. He obtained his Ph.D. in the field of Organic Chemistry from the University of North Carolina. He joined Getty Oil Company in 1980 in Houston, Texas and has resided there ever since. His career spans three oil companies, two mergers, and many research activities within the oil business. He has worked in the areas of enhanced oil recovery, production chemistry, scientific and database programming, and multiphase flow engineering. The last 20 years of his career have been using and developing 1, 2 and 3D simulators for multiphase flows. Lee currently works with a team of highly talented Flow Assurance experts who combine specialized knowledge in the areas of hydrates, wax, fluid properties, multiphase flow, CFD, and engineering to provide design support and R&D for major capital projects such as offshore field development, detailed design of production facilities, and LNG plant engineering.