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## **Report on the GRS Master's Program "Simulation Sciences"**

### **Abstract**

One challenge in graduate computational science and engineering education is dealing with diverse profiles of incoming students, with Bachelor degrees in engineering, natural sciences, computer science or mathematics. Depending on the desired graduate profile, a significant amount of curriculum flexibility may be necessary in order to harmonize the various skill sets. In addition, integrative instruction elements that combine various components of computational science and engineering are called for, ranging from modifications to existing single-discipline courses to custom-designed laboratory modules and projects.

### **Biosketch**

Marek Behr, Professor of Mechanical Engineering at the RWTH Aachen University in Germany has received his B.S. and Ph.D. from the University of Minnesota in 1988 and 1992, respectively. Since then, he has held academic positions at the University of Minnesota, Rice University, and the Technical University of Munich, before establishing the Chair for Computational Analysis of Technical Systems at the RWTH Aachen in October 2004.

Dr. Behr's research centers on developing numerical methods for computational fluid dynamics applications. His particular areas of interest include stabilized space-time finite element formulations for fluid flows involving moving boundaries and interfaces, mixed formulations for analysis of viscoelastic flows, parallel computing and aspects of scientific visualization. He is a member of the United States and German Associations for Computational Mechanics and a member of the advisory board of the International Journal for Numerical Methods in Fluids, among others. He is also an Adjunct Professor at the Department of Chemical and Biomolecular Engineering at Rice University in Houston, Texas.

Current and past research funding sources include the National Science Foundation, the U.S. Army Research Office, the German Research Foundation and the German Federal Ministries of Research and Environment. Dr. Behr's research group includes 12 doctoral students and two postdoctoral associates. Since 2010, he is also the President of the German Research School for Simulation Sciences, a joint venture of the RWTH Aachen University and the Forschungszentrum Jülich.