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Education

UNIVERSITY OF MINNESOTA
Ph.D. in Aerospace Engineering and Mechanics 1992

UNIVERSITY OF MINNESOTA
B.S. in Aerospace Engineering and Mechanics 1988

WARSAW UNIVERSITY
Physics 1983 – 1986

Employment

RWTH AACHEN UNIVERSITY, AACHEN, GERMANY
DEPARTMENT OF MECHANICAL ENGINEERING
DEPARTMENT OF MATHEMATICS, INFORMATICS AND NATURAL SCIENCES
Professor, Chair for Comp. Analysis of Technical Systems Oct 2004 – present

AACHEN INSTITUTE FOR ADVANCED STUDY
IN COMPUTATIONAL ENGINEERING SCIENCE
Scientific Director Nov 2006 – present

RICE UNIVERSITY, HOUSTON, TX
DEPARTMENT OF CHEMICAL AND BIOMOLECULAR ENGINEERING
Adjunct Professor Jul 2005 – present

GERMAN RESEARCH SCHOOL FOR SIMULATION SCIENCES GMBH
President Aug 2010 – 2016
Vice-President Apr 2008 – Jul 2010

TECHNICAL UNIVERSITY OF MUNICH, GARCHING, GERMANY
DEPARTMENT OF MECHANICAL ENGINEERING
Deputy Head of Chair for Comp. Mechanics Aug 2003 – Sep 2004

RICE UNIVERSITY, HOUSTON, TX
DEPARTMENT OF MECHANICAL ENGINEERING AND MATERIALS SCIENCE
Assistant Professor Jul 1999 – Jun 2003

CHUO UNIVERSITY, TOKYO, JAPAN
GRADUATE SCHOOL OF SCIENCE AND ENGINEERING
Guest Professor Sep 2013, Apr 2016

UNIVERSITY OF MINNESOTA, MINNEAPOLIS, MN
ARMY HIGH PERFORMANCE COMPUTING RESEARCH CENTER
Research Assistant Professor Oct 1994 – Jul 1999

UNIVERSITY OF MINNESOTA, MINNEAPOLIS, MN
ARMY HIGH PERFORMANCE COMPUTING RESEARCH CENTER
Research Associate Nov 1992 – Sep 1994

Honors and Awards Plenary Speaker at the 12th World Congress on Computational Mechanics in Seoul, July 2016.

Fellow of the International Association for Computational Mechanics, July 2014.

Scientific Prize of the City of Freising, July 2011.

Personal Information Born July 13, 1965 in Warsaw, Poland.
Citizen of the U.S.

Publications Journal Articles:

1. M. Brüderlin, N. Hosters, and M. Behr, “Robust Active Control of a Winglet with Elastic Suspension at Transonic Flow”, to appear in *Journal of Guidance Control and Dynamics* (2017).
2. V. Karyofylli, M. Frings, S. Elgeti, and M. Behr, “Simplex Space-Time Meshes in Two-Phase Flow Simulations”, to appear in *Journal of Non-Newtonian Fluid Mechanics* (2017).
3. B. Keith, P. Knechtges, N.V. Roberts, S. Elgeti, M. Behr, and L. Demkowicz, “An Ultra-weak DPG Method for Viscoelastic Fluids”, to appear in *Journal of Non-Newtonian Fluid Mechanics* (2017).
4. L. Pauli and M. Behr, “On Stabilized Space-Time FEM for Anisotropic Meshes: Incompressible Navier-Stokes Equations and Applications to Blood Flow in Medical Devices”, to appear in *International Journal for Numerical Methods in Fluids* (2017).
5. F. Zwicke, P. Knechtges, M. Behr and S. Elgeti, “Automatic Implementation of Material Laws: Jacobian Calculation in a Finite Element Code with TAPENADE”, *Computers and Mathematics with Applications*, **72** (2016) 2808–2822.
6. A. Stavrev, L.H. Nguyen, R. Shen, V. Varduhn, M. Behr, S. Elgeti and D. Schillinger, “Geometrically Accurate, Efficient, and Flexible Quadrature Techniques for the Tetrahedral Finite Cell Method”, *Computer Methods in Applied Mechanics and Engineering*, **310** (2016) 646–673.
7. L. Gesenhues, L. Pauli and M. Behr, “Strain-Based Blood Damage Estimation for Computational Design of Ventricular Assist Devices”, *The International Journal of Artificial Organs*, **39** (2016) 166–170.
8. S. Frauholz, B. Reinartz, S. Müller and M. Behr, “Transition Prediction for Scramjet Intakes Using the γ - Re_{θ_t} Model Coupled to Two Turbulence Models”, *Journal of Propulsion and Power*, **31** (2015) 1404–1422.
9. R. Siegbert, N. Yesildag, M. Frings, F. Schmidt, S. Elgeti, H. Sauerland, M. Behr, C. Windeck, C. Hopmann, Y. Queudeville, U. Vroomen, and A. Bührig-Polaczek, “Individualized Production in Die-Based Manufacturing Processes Using Numerical Optimization”, *International Journal of Advanced Manufacturing Technology*, **80** (2015) 851–858.
10. L. Pauli, J. Both and M. Behr, “Stabilized Finite Element Method for Flows with Multiple Reference Frames”, *International Journal for Numerical Methods in Fluids* **78** (2015) 657–669.
11. P. Knechtges, M. Behr and S. Elgeti, “Fully-Implicit Log-Conformation Formulation of Constitutive Laws”, *Journal of Non-Newtonian Fluid Mechanics*, **214** (2014) 78–87.
12. S. Frauholz, A. Bosco, B.U. Reinartz, S. Müller and M. Behr, “Investigation of Hypersonic Intakes Using Reynolds Stress Modeling and Wavelet-Based Adaptation”, *AIAA Journal*, **52** (2014) 2765–2781.
13. A. Püttmann, M. Nicolai, M. Behr and E. von Lieres, “Stabilized Space-Time Finite Elements for High-Definition Simulation of Packed-Bed Chromatography”, *Finite Elements in Analysis and Design*, **86** (2014) 1–11.
14. F. Vitale, J. Nam, L. Turchetti, M. Behr, R. Raphael, M.C. Annesini and M. Pasquali, “A Multiscale Biophysical Model of Flow-Induced Red Blood Cell Damage”, *AICHE Journal*, **60** (2014) 1509–1516.
15. A. Marsden, Y. Bazilevs, C.C. Long and M. Behr, “Recent Advances in Computational Methodology for Simulation of Mechanical Circulatory Assist Devices”, *Wiley Interdisciplinary Reviews: Systems Biology and Medicine*, **6** (2014) 169–188.

16. R. Siegbert, S. Elgeti, M. Behr, K. Kurth, C. Windeck and Ch. Hopmann, "Design Criteria in the Numerical Design of Profile Extrusion Dies", *Key Engineering Materials*, **554–557** (2013) 794–800.
17. N. Hosters, M. Klaus, G. Schieffer, M. Behr and H.-G. Reimerdes, "Application of a Partitioned Field Approach to Transient Aerothermal Problems in Rocket Nozzles", *Computers & Fluids*, **88** (2013) 795–803.
18. L. Pauli, J. Nam, M. Pasquali and M. Behr, "Transient Stress-Based and Strain-Based Hemolysis Estimation in a Simplified Blood Pump", *International Journal for Numerical Methods in Biomedical Engineering*, **29** (2013) 1148–1160.
19. E. Schlauch, M. Ernst, R. Seto, H. Briesen, M. Sommerfeld and M. Behr, "Comparison of Three Simulation Methods for Colloidal Aggregates in Stokes Flow: Finite Elements, Lattice Boltzmann and Stokesian Dynamics", *Computers & Fluids*, **86** (2013) 199–209.
20. L. Pauli, M. Behr and S. Elgeti, "Towards Shape Optimization of Profile Extrusion Dies with Respect to Homogeneous Die Swell", *Journal of Non-Newtonian Fluid Mechanics*, **200** (2013) 79–87.
21. T. Nguyen, M. Behr, B. Reinartz, O. Hohn and A. Gülhan "Effects of Sidewall Compression and Relaminarization in a Scramjet Inlet", *Journal of Propulsion and Power*, **29** (2013) 628–638.
22. T. Nguyen, M. Vukovic, M. Behr and B. Reinartz, "Numerical Simulations of Successive Distortions in Supersonic Turbulent Flow", *AIAA Journal*, **50** (2012) 2365–2375.
23. S. Elgeti, M. Probst, C. Windeck, M. Behr, W. Michaeli and C. Hopmann, "Numerical Shape Optimization as an Approach to Extrusion Die Design", *Finite Elements in Analysis and Design*, **61** (2012) 35–43.
24. S. Elgeti, H. Sauerland, L. Pauli and M. Behr, "On the Usage of NURBS as Interface Representation in Free-Surface Flows", *International Journal for Numerical Methods in Fluids*, **69** (2012) 73–87.
25. J. Nam, M. Behr and M. Pasquali, "Space-time Least-Squares Finite Element Method for Convection-Reaction System with Transformed Variables", *Computer Methods in Applied Mechanics and Engineering*, **200** (2011) 2562–2576.
26. M. Hormes, R. Borchardt, I. Mager, T. Schmitz-Rode, M. Behr and U. Steinseifer, "A Validated CFD Model to Predict O₂ and CO₂ Transfer Within Hollow Fiber Membrane Oxygenators", *International Journal of Artificial Organs*, **34** (2011) 317–325.
27. D. Papadopoulos, M. Herty, V. Rath and M. Behr, "Identification of Uncertainties in the Shape of Geophysical Objects with Level Sets and the Adjoint Method", *Computational Geosciences*, **15** (2011) 737–753.
28. M. Probst, M. Lülfsmann, M. Nicolai, M. Bücken, M. Behr and C. Bischof, "Sensitivity of Optimal Shapes for Artificial Grafts with Respect to Flow Parameters", *Computer Methods in Applied Mechanics and Engineering*, **199** (2010) 997–1005.
29. M. Probst, M. Lülfsmann, M. Bücken, M. Behr and C. Bischof, "Sensitivity of Shear Rate in Artificial Grafts Using Automatic Differentiation", *International Journal for Numerical Methods in Fluids*, **62** (2010) 1047–1062.
30. V. Becker, E. Schlauch, M. Behr and H. Briesen, "Restructuring of Colloidal Aggregates in Shear Flows and Limitations of the Free-Draining Approximation", *Journal of Colloid & Interface Science*, **339** (2009) 362–372.
31. T. Finocchiaro, S. Heinke, M. Behbahani, M. Leßmann, M. Laumen, U. Steinseifer, T. Schmitz-Rode, S. Leonhardt, M. Behr and K. Hameyer, "Methods of Design, Simulation, and Control for the Development of New VAD/TAH Concepts", *Biomedical Engineering*, **54** (2009) 269–281.
32. W. Michaeli, M. Behr, S. Elgeti, M. Probst, M. Nicolai, B. Fink and C. Windeck, "Die Design: Automatically Optimizing Profile Dies", *Kunststoffe International*, **7** (2009) 28–30.
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40. M. Behr, D. Arora, O. Coronado and M. Pasquali, "Models and Finite Element Techniques for Blood Flow Simulation", *International Journal of Computational Fluid Dynamics*, **20** (2006) 175–181.
41. F. Abraham, M. Behr and M. Heinkenschloss, "Shape Optimization in Unsteady Blood Flow: A Numerical Study of Non-Newtonian Effects", *Computer Methods in Biomechanics and Biomedical Engineering*, **8** (2005) 201–212.
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46. M. Behr, "On the Application of Slip Boundary Condition on Curved Boundaries", *International Journal for Numerical Methods in Fluids*, **45** (2004) 43–51.
47. M. Behr and D. Arora, "Shear-Slip Mesh Update Method: Implementation and Applications", *Computer Methods in Biomechanics and Biomedical Engineering*, **6** (2003) 113–123.
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49. M. Behr and D. Arora, "Computational Analysis of Blood Flow in Ventricular Assist Devices", *Acta of Bioengineering and Biomechanics*, **4** (2002) 546–547.
50. M. Behr, "Stabilized Space-Time Finite Element Formulations for Free-Surface Flows", *Communications in Numerical Methods in Engineering*, **11** (2001) 813–819.
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53. M. Behr and T.E. Tezduyar, "Shear-Slip Mesh Update Method", *Computer Methods in Applied Mechanics and Engineering*, **174** (1999) 261–274.
54. I. Güler, M. Behr and T.E. Tezduyar, "Parallel Finite-Element Computation of Free-Surface Flows", *Computational Mechanics*, **23** (1999) 117–123.
55. K. Kashiyama, Y. Ohba, T. Takagi, M. Behr and T.E. Tezduyar, "Parallel Finite Element Method Utilizing the Mode Splitting and Sigma Coordinate for Shallow Water Flows", *Computational Mechanics*, **23** (1999) 144–150.

56. T.E. Tezduyar, S. Aliabadi and M. Behr, "Enhanced-Discretization Interface-Capturing Technique (EDICT) for Computation of Unsteady Flows with Interfaces", *Computer Methods in Applied Mechanics and Engineering*, **155** (1998) 235–248.
57. K. Kashiyama, K. Saitoh, M. Behr and T.E. Tezduyar, "Parallel Finite Element Methods for Large-Scale Computation of Storm Surges and Tidal Flows", *International Journal for Numerical Methods in Fluids*, **24** (1997) 1371–1389.
58. T. Tezduyar, S. Aliabadi, M. Behr, A. Johnson, V. Kalro and M. Litke, "Flow Simulation and High Performance Computing", *Computational Mechanics*, **18** (1996) 397–412.
59. K. Kashiyama, H. Ito, M. Behr and T.E. Tezduyar, "Three-Step Explicit Finite Element Computation of Shallow Water Flows on a Massively Parallel Computer", *International Journal for Numerical Methods in Fluids*, **21** (1995) 885–900.
60. M. Behr, D. Hastreiter, S. Mittal and T.E. Tezduyar, "Incompressible Flow Past a Circular Cylinder: Dependence of the Computed Flow Field on the Location of the Lateral Boundaries", *Computer Methods in Applied Mechanics and Engineering*, **123** (1995) 309–316.
61. J.G. Kennedy, M. Behr, V. Kalro, and T.E. Tezduyar, "Implementation of Implicit Finite Element Methods for Incompressible Flows on the CM-5", *Computer Methods in Applied Mechanics and Engineering*, **119** (1994) 95–111.
62. T.E. Tezduyar, S.K. Aliabadi, M. Behr and S. Mittal, "Massively Parallel Finite Element Computation of Compressible and Incompressible Flows", *Computer Methods in Applied Mechanics and Engineering*, **119** (1994) 157–177.
63. M. Behr and T.E. Tezduyar, "Finite Element Solution Strategies for Large-Scale Flow Simulations", *Computer Methods in Applied Mechanics and Engineering*, **112** (1994) 3–24.
64. T. Tezduyar, S. Aliabadi, M. Behr, A. Johnson, and S. Mittal, "Parallel Finite-Element Computation of 3D Flows", *IEEE Computer*, **26** October (1993) 27–36.
65. M. Behr, A. Johnson, J. Kennedy, S. Mittal, and T.E. Tezduyar, "Computation of Incompressible Flows with Implicit Finite Element Implementations on the Connection Machine", *Computer Methods in Applied Mechanics and Engineering*, **108** (1993) 99–118.
66. M. Behr, L.P. Franca, and T.E. Tezduyar, "Stabilized Finite Element Methods for the Velocity-Pressure-Stress Formulation of Incompressible Flows", *Computer Methods in Applied Mechanics and Engineering*, **104** (1993) 31–48.
67. T.E. Tezduyar, M. Behr, S.K. Aliabadi, S. Mittal, and S.E. Ray, "A New Mixed Preconditioning Method for Finite Element Computations", *Computer Methods in Applied Mechanics and Engineering*, **99** (1992) 27–42.
68. T.E. Tezduyar, M. Behr, S. Mittal, and J. Liou, "A New Strategy for Finite Element Computations Involving Moving Boundaries and Interfaces – The Deforming-Spatial-Domain/Space-Time Procedure: II. Computation of Free-Surface Flows, Two-Liquid Flows, and Flows with Drifting Cylinders", *Computer Methods in Applied Mechanics and Engineering*, **94** (1992) 353–371.
69. T.E. Tezduyar, M. Behr, and J. Liou, "A New Strategy for Finite Element Computations Involving Moving Boundaries and Interfaces – The Deforming-Spatial-Domain/Space-Time Procedure: I. The Concept and the Preliminary Tests", *Computer Methods in Applied Mechanics and Engineering*, **94** (1992) 339–351.
70. M. Behr, T.E. Tezduyar, and H. Higuchi, "Wake Interference Behind Two Flat Plates Normal to the Flow: A Finite-Element Study", *Theoretical and Computational Fluid Mechanics*, **2** (1991) 223–250.
71. M. Behr, J. Liou, R. Shih, and T.E. Tezduyar, "Vorticity-Stream Function Formulation of Unsteady Incompressible Flow Past a Cylinder: Sensitivity of the Computed Flow Field to the Location of the Outflow Boundary", *International Journal for Numerical Methods in Fluids*, **12** (1991) 323–342.
72. T.E. Tezduyar, J. Liou, D.K. Ganjoo, and M. Behr, "Solution Techniques for the Vorticity-Stream Function Formulation of Two-Dimensional Incompressible Flows", *International Journal for Numerical Methods in Fluids*, **11** (1990) 515–539.

Conference Papers:

73. Ch. Hopmann, M. Behr, R. Siegbert, S. Elgeti, K. Kurth and C. Windeck, "Improving the Automated Optimization of Profile Extrusion Dies by Applying Appropriate Optimization Areas and Strategies", in *Proceedings of the Polymer Processing Society 29th Annual Meeting PPS-29*, Nuremberg, Germany, (2014).
74. R. Siegbert, J. Kitschke, H. Djelassi, M. Behr and S. Elgeti, "Comparing Optimization Algorithms for Shape Optimization of Extrusion Dies", in *Proceedings in Applied Mathematics and Mechanics*, **14** (2014) 789–794.
75. M. Brüderlin, B. Stickan, B. Schulze and M. Behr, "Numerical Simulation of the Aero-Structural Dynamics of Airplane Wings with a CFD-CSM Coupling in the FlowSimulator Environment and Validation with Experimental Data from the Transfer Project ASDMAD", STAB Symposium, Munich, Germany, (2014).
76. M. Brüderlin, N. Hosters, B.-H. Chen, A. Boucke, J. Ballmann and M. Behr, "Numerical Prediction and Post-Test Numerical Analysis of the ASDMAD Wind Tunnel Tests in ETW", in *International Forum on Aeroelasticity & Structural Dynamics 2013*, Bristol, UK, (2013).
77. N. Hosters, M. Klaus, G. Schieffer, M. Behr and H.-G. Reimerdes, "Towards Aerothermoelastic Simulations of Supersonic Flow Through Nozzles", in *Progress in Propulsion Physics 4*, EUCASS Proceedings Series, St. Petersburg, Russia, (2013).
78. S. Frauholz, M. Behr, B.U. Reinartz and S. Müller, "Numerical Simulation of Hypersonic Air Intake Flow in Scramjet Propulsion Using a Mesh-Adaptive Approach", Paper AIAA 2012-5976, in *Proceedings of the 18th AIAA/3AF International Space Planes and Hypersonic Systems and Technologies Conference*, Tours France, (2012).
79. J. Ballmann, A. Boucke, B.-H. Chen, L.Reimer, M. Behr, A. Dafnis, C. Buxel, S. Buesing, H.-G. Reimerdes, K.-H. Brakhage, H. Olivier, M. Kordt, J. Brink-Spalink, F. Theurich and A. Büscher, "Aero-Structural Wind Tunnel Experiments with Elastic Wing Models at High Reynolds Numbers (HIRENASD - ASDMAD)", AIAA Paper 2011-0882, *Proceedings of 49th Aerospace Sciences Meeting*, Orlando, Florida, (2011).
80. T. Nguyen, M. Behr and B. Reinartz, "Near-Wall Extension of a Non-Equilibrium Omega-Based Reynolds Stress Model", in *Proceedings of the 13th European Turbulence Conference (ETC13)*, *Journal of Physics: Conference Series*, **318** (2011).
81. T.T.Q. Nguyen, B. Reinartz, M. Behr, O. Hohn and A. Gülhan, "Numerical Investigations of the Effects of Sidewall Compression and Relaminarization in 3D Scramjet Inlet", AIAA Paper 2011-2256, in *Proceedings of the 17th AIAA International Space Plane and Hypersonic Systems and Technologies Conference*, San Francisco, USA, (2011).
82. B.-H. Chen, L. Reimer, M. Behr and J. Ballmann, "Influence of a Static and Dynamic Actuated Winglet Control Surface in Preparation for New Aero-Structural Dynamic Experiments in ETW", in *High-Performance Computing in Science and Engineering '10*, Stuttgart, Germany, (2010).
83. B. Reinartz and M. Behr, "Computational Design Study of a 3D Hypersonic Intake for Scramjet Demonstrator Testing", in *High-Performance Computing in Science and Engineering '10*, Stuttgart, Germany, (2010).
84. M. Krause, B. Reinartz and M. Behr, "Numerical Analysis of Transition Effects in 3D Hypersonic Intake Flows", in *High-Performance Computing in Science and Engineering '09*, Stuttgart, Germany, (2010).
85. B.-H. Chen, L. Reimer, M. Behr and J. Ballmann, "Pre-Investigations of a Redesigned HIRENASD Wing Model in Preparation for New Aero-Structural Dynamic Experiments in ETW", in *High-Performance Computing in Science and Engineering '09*, Stuttgart, Germany, (2010).
86. G. Schieffer, J. Ballmann and M. Behr, "Validation of advanced turbulence models in QUADFLOW", in *Heat and Mass Transfer 6*, Begell House Inc., (2009).
87. B. Reinartz and M. Behr, "Influence of Sidewall Compression on Hypersonic Intake Performance", AIAA Paper 2009-7351, *Proceedings of 16th AIAA/DLR/DGLR International Space Planes and Hypersonic Systems and Technologies Conference*, Bremen, Germany, (2009).
88. T.T.Q. Nguyen, B. Reinartz and M. Behr, "Numerical Investigation of Compressible Turbulent Boundary Layer Over Expansion Corners", AIAA Paper 2009-7371, *Proceedings of the 16th AIAA/DLR/DGLR International Space Plane and Hypersonic Systems and Technologies Conference*, Bremen, Germany, (2009).

89. L. Reimer, A. Boucke, J. Ballmann and M. Behr, "Computational Analysis of High Reynolds Number Aero-Structural Dynamics (HIRENASD) Experiments", in International Forum on Aeroelasticity and Structural Dynamics 2009, Paper IFASD-2009-130, Seattle, Washington, (2009).
90. B.-H. Chen, K.-H. Brakhage, M. Behr and J. Ballmann, "Numerical Simulations for Preparing New Aero-Structural Dynamic Experiments in Etw With a Modified HIRENASD Wing Model", in International Forum on Aeroelasticity and Structural Dynamics 2009, Paper IFASD-2009-131, Seattle, Washington, (2009).
91. M. Krause, M. Behr and J. Ballmann, "Modeling of Transition Effects in Hypersonic Intake Flows Using a Correlation-Based Intermittency Model", Paper AIAA 2008-2598, *Proceedings of 15th AIAA International Space Planes and Hypersonic Systems and Technologies Conference*, Dayton, Ohio, (2008).
92. B. Reinartz and M. Behr, "Computational Analysis of a 3D Hypersonic Intake for Experimental Testing at Mach 8", Paper AIAA 2008-2633, *Proceedings of 15th AIAA International Space Planes and Hypersonic Systems and Technologies Conference*, Dayton, Ohio, (2008).
93. M. Behbahani, M. Behr, M. Nicolai and M. Probst, "Towards Shape Optimization for Ventricular Assist Devices Using Parallel Stabilized FEM", *Proceedings of the NIC Symposium 2008*, Jülich, Germany, (2008).
94. M. Behr, M. Nicolai and M. Probst, "Efficient Parallel Simulations in Support of Medical Device Design", *Parallel Computing: Architectures, Algorithms and Applications*, Jülich, Germany, (2007).
95. M. Behr, D. Arora, O. Coronado-Matutti and M. Pasquali, "GLS-type Finite Element Methods for Viscoelastic Fluid Flow Simulation", *Proceedings of the Third MIT Conference on Computational Fluid and Solid Mechanics*, Cambridge, Massachusetts, (2005).
96. D. Arora, M. Behr, O. Coronado-Matutti and M. Pasquali, "Estimation of Hemolysis in Centrifugal Blood Pumps Using Morphology Tensor Approach", *Proceedings of the Third MIT Conference on Computational Fluid and Solid Mechanics*, Cambridge, Massachusetts, (2005).
97. M. Behr, "Free-surface Flow Modeling and Unstructured Space-time Meshes", *Oberwolfach Reports 8/2005*, Oberwolfach, Germany, (2005).
98. M. Behr, D. Arora, O. Coronado-Matutti and M. Pasquali, "Stabilized Finite Element Methods of GLS Type for Maxwell-B and Oldroyd-B Viscoelastic Fluids", *Proceedings of the European Congress on Applied Sciences and Engineering ECCOMAS 2004*, Jyväskylä, Finland, (2004).
99. D. Arora, M. Behr and M. Pasquali, "Blood Damage Measures for Ventricular Assist Device Modeling", *Proceedings of 7th International Conference on Computational Modelling of Free and Moving Boundary Problems*, Santa Fe, New Mexico, (2003).
100. M. Behr, D. Arora and M. Pasquali, "Tracking Strain in Ventricular Assist Devices", *Proceedings of the 2nd Joint Meeting of IEEE Engineering in Medicine and Biology Society and Biomedical Engineering Society*, Houston, Texas, (2002).
101. M. Behr and P. Briggs, "Parallel Implementation of Computational Fluid Dynamics Codes on Emerging Architectures", *SCI 2002 Proceedings*, Orlando, Florida, (2002).
102. M. Behr and F. Abraham, "On Delaying the Breakdown of Continuum Models in Flow Simulations in Deforming Domains", in H.A. Mang, F.G. Rammensdorfer and J. Eberhardsteiner, editors, *Proceedings of the 5th World Congress on Computational Mechanics*, Vienna University of Technology, Vienna, Austria, (2002).
103. M. Behr, D. Arora and S. Schulte-Eistrup, "Prediction of Flow Features in Centrifugal Blood Pumps", *Proceedings of the 2nd European Conference on Computational Mechanics*, Cracow University of Technology, Cracow, Poland, (2001).
104. H.L. Edge, J. Sahu, W. Sturek, J. Clarke, D. Pressel, M. Behr, K.R. Heavey, P. Weinacht, C. Zoltani and C. Nietubicz, "ZNSFlow CFD CHSSI Software", AIAA Paper 2001-0595, *Proceedings of the AIAA 39th Aerospace Sciences Meeting*, Reno, Nevada, (2001).
105. M. Behr, "Stabilized space-time FEM and its applications to free-surface flows", *Proceedings of the Conference on Computational Engineering and Science*, Vol.5, JSCES, Tokyo, Japan, (2000).

106. M. Behr and T.E. Tezduyar, "Shear-slip mesh update method in 3D computation of complex flow problems with rotating mechanical components", in J.L. Tassoulas, editor, *Engineering Mechanics 2000*, CD-ROM, University of Texas, Austin, Texas, (2000).
107. D.M. Pressel, M. Behr and S. Thompson, "The True Limitations of Shared Memory Programming", *Proceedings of 1999 International Conference on Parallel and Distributed Processing Techniques and Applications*, Las Vegas, Nevada (1999).
108. H. Edge, J. Sahu, W. Sturek, J. Clarke, D. Pressel, M. Behr, K. Heavey, P. Weinacht and C. Zoltani, "CFD Computations with ZNSFlow CHSSI Software", *Proceedings of 1999 DoD HPCMO User's Group Conference*, Monterey, California (1999).
109. K. Kashiyama, S. Sugano, M. Behr and T.E. Tezduyar, "Space-time finite element method for shallow water flows considering moving boundaries", *Proceedings of the 3rd ASME/JSME Joint Fluids Engineering Conference*, ASME, San Francisco, California, (1999).
110. M. Behr and T.E. Tezduyar, "Shear-Slip Mesh Update Method for Computation of Flow Problems with Spinning Geometries", in S. Idelsohn, E. Oñate and E. Dvorkin, editors, *Computational Mechanics – New Trends and Applications*, CD-ROM, (1998).
111. W. Sturek, D.M. Pressel and M. Behr, "Comments on CFD Code Performance on Scaleable Architectures", in *Proceedings of the 4th Japan-US Symposium on Finite Element Methods in Large-Scale Computational Fluid Dynamics*, Tokyo, Japan, (1998).
112. T.E. Tezduyar, S. Aliabadi, M. Behr and I. Güler, "Finite element formulations for unsteady flows with interfaces", in M. Hafez and J.C. Heinrich, editors, *Proceedings of the Tenth International Conference on Finite Elements in Fluids*, Tucson, Arizona, (1998).
113. M. Behr and T.E. Tezduyar, "A note on Shear-Slip Mesh Update Method", *Lecture Notes of the Workshop on Parallel Computing in Applied Fluid Mechanics*, Associazione Amici Scuola Normale Superiore, Pisa, Italy, (1997).
114. T.E. Tezduyar, S. Aliabadi, M. Behr, I. Güler, A. Howard and M. Ellis, "Parallel computing methods for free-surface flows", *Proceedings of the 7th International Conference on Computing in Civil and Building Engineering*, Seoul, Korea, (1997).
115. T.E. Tezduyar, S. Aliabadi and M. Behr, "Enhanced-Discretization Interface-Capturing Technique", in Y. Matsumoto and A. Prosperetti, editors, *Proceedings of the ISAC '97 High Performance Computing on Multiphase Flows*, Japan Society of Mechanical Engineers, Tokyo, Japan, (1997).
116. T.E. Tezduyar, S. Aliabadi, M. Behr, A. Johnson, V. Kalro and M. Litke, "High performance computing in flow simulation", in L. Dekker, W. Smit and J.C. Zuidervart, editors, *Eurosim '96 HPCN Challenges in Telecomp and Telecom: Parallel Simulation of Complex Systems and Large-Scale Applications*, North Holland, (1996) 27–34.
117. K. Kashiyama, S. Yoshikawa, M. Behr and T.E. Tezduyar, "Massively parallel finite element computation of storm surge", *Lecture Notes on Finite Element Simulation of Flow Problems*, Japan Society of Computational Fluid Dynamics, Tokyo, Japan, (1995).
118. T.E. Tezduyar, S. Aliabadi, M. Behr, A. Johnson, V. Kalro and C. Waters, "3D simulation of flow problems with parallel finite element computations on the Cray T3D", *Computational Mechanics '95, Proceedings of International Conference on Computational Engineering Science*, Mauna Lani, Hawaii, (1995).
119. T. Tezduyar, S. Aliabadi, M. Behr, A. Johnson, and S. Mittal, "Massively parallel finite element computation of 3D flows – mesh update strategies in computation of moving boundaries and interfaces", in A. Ecer, J. Hauser, P. Leca and J. Periaux, editors, *Parallel Computational Fluid Dynamics – New Trends and Advances*, Elsevier, (1995).
120. K. Kashiyama, H. Ito, M. Behr and T. Tezduyar, "Massively parallel finite element strategies for large-scale computation of shallow water flows and contaminant transport", *Extended Abstracts of the Second Japan-US Symposium on Finite Element Methods in Large-Scale Computational Fluid Dynamics*, Tokyo, Japan, (1994).
121. K. Kashiyama, H. Ito, M. Behr and T. Tezduyar, "Massively parallel finite element method for large-scale computation of shallow water flows", *Extended Abstracts of the Third World Congress on Computational Mechanics*, IACM, Chiba, Japan, (1994).
122. K. Kashiyama, M. Behr and T.E. Tezduyar, "Massively parallel finite element computation of shallow water flows and contaminant transport", in A. Peters *et al*, editors, *Computational Methods in Water Resources X*, Kluwer Academic Publishers, Paris, France, (1994).

123. J.G. Kennedy, V. Kalro, M. Behr, and T.E. Tezduyar, “A strategy for implementing implicit finite element methods for incompressible fluids on the CM-5”, *Extended Abstracts of the Second Japan-US Symposium on Finite Element Methods in Large-Scale Computational Fluid Dynamics*, Tokyo, Japan, (1994).
124. T. Tezduyar, S. Aliabadi, M. Behr, A. Johnson, and S. Mittal, “Massively parallel finite element computation of three-dimensional flow problems”, in *Proceedings of the 6th Japan Numerical Fluid Dynamics Symposium*, Tokyo, Japan, (1992).
125. M. Behr and T. Tezduyar, “Galerkin/least-squares space-time finite element method for deforming domains – recent developments”, in J.J.H. Miller, editor, *BAIL VI Proceedings of the Sixth International Conference on Boundary and Interiors Layers – Computational and Asymptotic Methods*, Front Range Press, Copper Mountain, Colorado, (1992).

Book Chapters:

126. L. Pauli and M. Behr, “On the Significance of Exposure Time in Computational Blood Damage Estimation”, in *High-Performance Scientific Computing*, Lecture Notes in Computer Science, Volume 10164 (2017) 24–6.
127. V. Bürger, E. Schlauch, V. Becker, R. Seto, M. Behr and H. Briesen, “Simulating the Restructuring of Colloidal Aggregates”, in M. Kind et al., editors, *Colloid Process Engineering*, Springer, (2015) 145–173.
128. G. Wellmer, L. Reimer, H. Flister, M. Behr and J. Ballmann, “A Comparison of Fluid-/Structure Coupling Methods for Reduced Structural Models”, in B. Eisfeld et al., editors, *Management and Minimisation of Uncertainties and Errors in Numerical Aerodynamics*, Notes on Numerical Fluid Mechanics and Multidisciplinary Design, Springer, **122** (2013) 181–218.
129. G. Schieffer, S. Ray, F.D. Bramkamp, M. Behr and J. Ballmann, “An Adaptive Implicit Finite Volume Scheme for Compressible Turbulent Flows about Elastic Configurations”, in W. Schröder, editor, *Summary of Flow Modulation and Fluid-Structure Interaction Findings*, Notes on Numerical Fluid Mechanics and Multidisciplinary Design, Springer, **109** (2010) 25–52.
130. L. Reimer, C. Braun, G. Wellmer, M. Behr and J. Ballmann, “Development of a Modular Method for Computational Aero-structural Analysis of Aircraft”, in W. Schröder, editor, *Summary of Flow Modulation and Fluid-Structure Interaction Findings*, Notes on Numerical Fluid Mechanics and Multidisciplinary Design, Springer, **109** (2010) 205–238.
131. J. Ballmann, M. Behr, K. Brix, W. Dahmen, C. Hohn, R. Massjung, S. Melian, S. Müller and G. Schieffer, “Parallel and Adaptive Methods for Fluid-Structure-Interactions”, in W. Schröder, editor, *Summary of Flow Modulation and Fluid-Structure Interaction Findings*, Notes on Numerical Fluid Mechanics and Multidisciplinary Design, Springer, **109** (2010) 265–294.
132. M. Behr, “Biofluid Simulations on Linux Clusters”, in K. Matsuno, A. Ecer, J. Periaux, N. Satofuka and P. Fox, editors, *Parallel Computational Fluid Dynamics—New Frontiers and Multi-Disciplinary Applications*, Elsevier, (2003) 451–458.
133. T.E. Tezduyar, S. Aliabadi and M. Behr, “Parallel finite element computing methods for unsteady flows with interfaces”, in M. Hafez and K. Oshima, editors, *Computational Fluid Dynamics Review 1998*, World Scientific, (1998) 643–667.
134. T.E. Tezduyar, S. Aliabadi, M. Behr, A. Johnson and M. Litke, “Parallel 3D finite element computation of contaminant dispersion”, in S.N. Atluri and G. Yagawa, editors, *Advances in Computational Engineering Science*, Tech Science Press, (1997) 1002–1008.
135. T.E. Tezduyar, S. Aliabadi, M. Behr, A. Johnson, V. Kalro and M. Litke, “High performance computing techniques for flow simulations”, in M. Papadrakakis, editor, *Parallel Solution Methods in Computational Mechanics*, Wiley, (1996) 363–398.
136. T.E. Tezduyar, M. Behr and T.J.R. Hughes, “Finite element methods”, Section 19.3 in J.A. Schetz and A.E. Fuhs, editors, *Handbook of Fluid Dynamics and Fluid Machinery*, Wiley, (1996) 1272–1282.
137. T.E. Tezduyar, M. Behr and T.J.R. Hughes, “High-performance finite element computation of fluid dynamics problems”, in M. Hafez and K. Oshima, editors, *Computational Fluid Dynamics Review 1995*, Wiley, (1995) 300–321.

138. T.E. Tezduyar, M. Behr, S.K. Aliabadi, S. Mittal, and S.E. Ray, “A new mixed preconditioning method based on the clustered element-by-element preconditioners”, in *Domain Decomposition Methods in Science and Engineering, Contemporary Mathematics* Vol.157, American Mathematical Society, (1994) 215–222.
139. T.E. Tezduyar, M. Behr, S. Mittal, and A.A. Johnson, “Computation of unsteady incompressible flows with the finite element methods – space-time formulations, iterative strategies and massively parallel implementations”, in P. Smolinski, W.K. Liu, G. Hulbert, and K. Tamma, editors, *New Methods in Transient Analysis*, AMD Vol.143, ASME, (1992) 7–24.
140. T.E. Tezduyar, J. Liou, D.K. Ganjoo, M. Behr, and R. Glowinski, “Unsteady incompressible flow computations with the finite element method”, in T.J. Chung, editor, *Finite Elements in Fluids*, Vol.8, Hemisphere Publishing, (1992) 177–209.
141. H. Higuchi, J. Liou, M. Behr, and T.E. Tezduyar, “Finite element computations and experimental studies of flow past an array of plates”, in W.K. Liu et al., editor, *Computational Experiments*, PVP Vol.176, ASME, New York, (1989) 45–54.

Presentations

Invited Presentations:

1. Graduation address of the SimTech study program, Stuttgart, Germany, June 2017.
2. Coupled Problems, Rhodos, Greece, June 2017.
3. Computational & Mathematical Biomedical Engineering, Pittsburgh, USA, April 2017.
4. 4th Japanese-German Workshop on Computational Mechanics, Sendai, Japan, March 2017.
5. MFO Workshop on Space-Time Methods, Oberwolfach, Germany, March 2017.
6. 6th Munich Vascular Conference, Munich, Germany, December 2016.
7. RICAM Special Semester, Linz, Austria, November 2016.
8. TechNet Alliance Fall Meeting, Tabiano Castello, Italy, October 2016.
9. 12th World Congress on Computational Mechanics (plenary), Seoul, Korea, July 2016.
10. University of Pavia Seminar, Pavia, Italy, May 2016.
11. Graduate School CE Seminar, Darmstadt, Germany, April 2016.
12. SIAM Parallel Processing 2016, Paris, France, April 2016.
13. Japan Society of Civil Engineers Seminar, Tokyo, Japan, April 2016.
14. University of Tokyo Seminar, Tokyo, Japan, April 2016.
15. Chuo University Seminar, Tokyo, Japan, April 2016.
16. Variational Multiscale and Stabilized Methods 2016, Magdeburg, Germany, March 2016.
17. University of Luxembourg Seminar, Luxembourg, February 2016.
18. University of Greifswald Seminar, Greifswald, Germany, December 2015.
19. Basque Center for Applied Mathematics Seminar, Bilbao, Spain, November 2015.
20. Intl Workshops on Advances in Computational Mechanics III, Tokyo, Japan, October 2015.
21. University of Texas at Austin Seminar, Austin, Texas, September 2015.
22. Old Dominion University Seminar, Norfolk, Virginia, July 2015.
23. 13th US Congress on Comp. Mechanics, San Diego, California, July 2015.
24. 4th Intl Conference on Comp. & Math. Biomedical Eng., Cachan, France, June 2015.
25. 1st Pan-American Congress on Comp. Mechanics, Buenos Aires, Argentina, April 2015.
26. 3rd German-Japanese Workshop on Comp. Mechanics, Munich, Germany, March 2015.
27. Institute for Mathematical Sciences Workshop, Singapore, March 2015.
28. 11th World Congress on Computational Mechanics, Barcelona, Spain, July 2014.
29. 3rd Workshop on Parallel-in-Time Integration, Jülich, Germany, May 2014.
30. COMPSAFE 2014 (keynote), Sendai, Japan, April 2014.
31. SPP 1273 Colloquium, Karlsruhe, Germany, January 2014.
32. BBE SIPD Fall School, Milan, Italy, November 2013.

33. VMS 2013, Barcelona, Spain, November 2013.
34. Hokkaido University Seminar, Sapporo, Japan, September 2013.
35. Chuo University Seminars, Tokyo, Japan, September 2013 (3).
38. 12th US National Congress on Comp. Mechanics, Raleigh, North Carolina, July 2013.
39. ECCOMAS Coupled Problems 2013 (keynote), Ibiza, Spain, June 2013.
40. NRW Academy of Sciences and Arts, Düsseldorf, Germany, April 2013.
41. Polish Academy of Sciences Seminar, Warsaw, Poland, March 2013.
42. Finite Elements in Flow Problems FEF13, San Diego, California, February 2013.
43. IIT-Kanpur Institute Lecture, Kanpur, India, November 2012.
44. 6th ECCOMAS Congress, Vienna, Austria, September 2012.
45. 24th Parallel CFD (plenary), Atlanta, Georgia, May 2012.
46. Workshop on Large-Scale Computer Simulation, Oak Ridge, Tennessee, April 2012.
47. 32nd Israel Symposium on Comp. Mechanics (keynote), Tel Aviv, Israel, March 2012.
48. Technion Biomechanics Seminar, Haifa, Israel, March 2012.
49. Schlumberger Seminar, Houston, Texas, November 2011.
50. Rice University CAAM Seminar, Houston, Texas, November 2011.
51. ESAO (keynote), Porto, Portugal, October 2011.
52. 4th GACM Colloquium on Comp. Mec. (plenary), Dresden, Germany, September 2011.
53. 11th US National Congress on Comp. Mechanics, Minneapolis, Minnesota, July 2011.
54. 25th German-Israeli Umbrella Symposium, Aachen, Germany, June 2011.
55. Finite Elements in Flow Problems FEF11 (plenary), Munich, Germany, March 2011.
56. CNRS Seminar, Toulouse, France, March 2011.
57. Texas Heart Institute Seminar, Houston, Texas, March 2011.
58. SIAM Computational Science and Engineering, Reno, Nevada, March 2011.
59. DLR Colloquium, Braunschweig, Germany, November 2010.
60. Calibration of Viscosity Models for Turbulent Flows, Göttingen, Germany, October 2010.
61. Fresenius Medical Care Seminar, Bad Homburg, Germany, August 2010.
62. 9th World Congress on Computational Mechanics, Sydney, Australia, July 2010.
63. 4th Intl Symposium on Modeling of Physiological Flows, Chia, Italy, June 2010.
64. CECAM Trends in Computational Hemodynamics, Lausanne, Switzerland, May 2010.
65. Intl Workshop on Advances in Computational Mechanics, Yokohama, Japan, March 2010.
66. German-Japanese Workshop on Computational Mechanics, Yokohama, Japan, March 2010.
67. Bridging the Gaps Workshop, QMUL, London, UK, March 2010.
68. 24th German-Israeli Umbrella Symposium, Jülich, Germany, January 2010.
69. TU Graz Seminar, Graz, Austria, November 2009.
70. Max Planck Institute for Iron Research, Düsseldorf, Germany, August 2009.
71. US National Congress on Computational Mechanics, Columbus, Ohio, July 2009.
72. Finite Elements in Flow Problems FEF09 (incl. keynote), Tokyo, Japan, April 2009 (2).
74. MIT AICES Spring School on Methods and Tools for CE, Aachen, Germany, March 2009.
75. Mesosoft, Jülich, Germany, March 2009.
76. SIAM Computational Science and Engineering, Miami, Florida, March 2009 (2).
78. Chuo University Seminars, Tokyo, Japan, September 2008 (3).
81. 8th World Congress on Computational Mechanics, Venice, Italy, July 2008.
82. SIAM Conference on Optimization, Boston, Massachusetts, April 2008.
83. INRIA Blood and Air Flow Modeling Workshop, Rocquencourt, France, March 2008.
84. NIC Symposium 2008, Jülich, Germany, January 2008.

85. Blood Modeling 2007 Workshop, Aachen, Germany, September 2007.
86. ENUMATH 2007, Graz, Austria, September 2007.
87. Parallel Computing 2007 Plenary, Jülich, Germany, September 2007.
88. U.S. National Congress on Computational Mechanics, San Francisco, California, July 2007.
89. Workshop on Two-phase Incompressible Flows, Aachen, Germany, June 2007.
90. International Conference on Computational Mechanics, Hiroshima, Japan, April 2007.
91. Chuo University Seminar, Tokyo, Japan, April 2007.
92. Finite Elements in Flow Problems, Santa Fe, New Mexico, March 2007.
93. SIAM Computational Science and Engineering, Costa Mesa, California, February 2007.
94. Workshop on VMS Methods and Stabilized FE, Lausanne, Switzerland, February 2007.
95. ECCOMAS Conference on CFD, Egmond aan Zee, The Netherlands, September 2006.
96. 7th World Congress on Computational Mechanics, Los Angeles, California, July 2006.
97. Intl Workshop on Mesoscale and Multiscale Description of Complex Fluids, Prato, Italy, July 2006.
98. Sun HPC 2006 Workshop, Aachen, Germany, March 2006.
99. SIAM Parallel Processing for Sci. Computing, San Francisco, California, February 2006.
100. Gieserei Institut/ACCESS Seminar, Aachen, Germany, December 2005.
101. Workshop on VMS Methods and Stabilized FE, Heidelberg, Germany, December 2005.
102. University of Göttingen Seminar, Göttingen, Germany, November 2005.
103. RICAM Workshop “Control of Complex Fluids”, Linz, Austria, October 2005.
104. 8th U.S. National Congress on Computational Mechanics, Austin, Texas, July 2005 (2).
106. Institut für Regelungstechnik Seminar, Aachen, Germany, June 2005.
107. Institut für Gesteinshüttenkunde Seminar, Aachen, Germany, June 2005.
108. Third MIT Conference on Computational Fluid and Solid Mechanics (incl. keynote), Cambridge, Massachusetts, June 2005 (2).
110. XIVth Intl Workshop on Num. Meth. for Non-Newtonian Flows, Santa Fe, New Mexico, June 2005.
111. ECCOMAS Coupled Problems 2005, Santorini, Greece, May 2005.
112. 2nd NAFEMS CFD Seminar, Wiesbaden, Germany, April 2005.
113. Thirteenth Conference on Finite Elements for Flow Problems, Swansea, Wales, April 2005.
114. ASIM Workshop, Wuppertal, Germany, March 2005.
115. Workshop on Interface Problems in CFD, Oberwolfach, Germany, February 2005.
116. IGPM Seminar, Aachen, Germany, January 2005.
117. University of Magdeburg Seminar, Magdeburg, Germany, December 2004.
118. Tag der Informatik, Aachen, Germany, December 2004.
119. Chuo University Seminar, Tokyo, Japan, November 2004.
120. Intl Workshop on Advances in Computational Mechanics, Tokyo, Japan, November 2004.
121. Paralleles Kolloquium, Aachen, Germany, October 2004.
122. 6th World Congress on Computational Mechanics, Beijing, China, September 2004.
123. EPFL Seminar, Lausanne, Switzerland, August 2004.
124. ECCOMAS 2004, Jyväskylä, Finland, July 2004.
125. SIAM Parallel Processing for Sci. Computing, San Francisco, California, February 2004.
126. FE im Schnee 9, Söllerhaus, Kleinwalsertal, Austria, January 2004.
127. TUM Colloquium, München, Germany, November 2003.
128. Dräger Medical Seminar, Lübeck, Germany, November 2003.
129. 11th Annual Meeting of the Intl Society for Rotary Blood Pumps, Bad Oeynhausen, Germany, September 2003.

130. Sandia National Laboratories Seminar, Albuquerque, New Mexico, August 2003.
131. 7th U.S. Natl Congress on Comp. Mechanics (keynote), Albuquerque, New Mexico, July 2003.
132. RWTH Colloquium, Aachen, Germany, May 2003.
133. University of Stuttgart Colloquium, Stuttgart, Germany, May 2003.
134. University of Hawaii at Manoa Seminar, Honolulu, Hawaii, April 2003.
135. University of Vermont Seminar, Burlington, Vermont, April 2003.
136. Finite Elements in Fluids 2003 Keynote, Nagoya, Japan, April 2003.
137. Chuo University Seminar, Tokyo, Japan, March 2003.
138. SIAM Computational Science & Engrg CSE03, San Diego, California, February 2003 (2).
140. Rice University CITI Seminar, Houston, Texas, October 2002.
141. Max-Planck Institute Seminar, Greifswald, Germany, September 2002.
142. Systemics, Cybernetics and Informatics 2002, Orlando, Florida, July 2002.
143. 5th World Congress on Computational Mechanics, Vienna, Austria, July 2002.
144. Chuo University Seminar, Tokyo, Japan, May 2002.
145. Parallel CFD 2002, Nara, Japan, May 2002.
146. Sandia National Laboratories Seminar, Albuquerque, New Mexico, March 2002.
147. 6th U.S. Natl Congress on Computational Mechanics, Dearborn, Michigan, August 2001 (2).
149. Rice University Mechanics of Materials Group Meeting, Houston, Texas, June 2001.
150. Waterways Experiment Station Seminar, Vicksburg, Mississippi, August 2000.
151. Kyushu University Seminar, Fukuoka, Japan, June 2000.
152. University of Tokyo Seminar, Tokyo, Japan, June 2000.
153. 5th Japan National Congress on Computational Mechanics, Tokyo, Japan, May 2000.
154. Chuo University Seminars, Tokyo, Japan, May 2000 (3 seminars).
157. Stanford University Lecture, Stanford, California, April 2000.
158. 5th U.S.-Japan Symposium on Flow Simulation and Modeling, Houston, Texas, March 2000.
159. NASA Ames Research Center Seminar, Moffett Field, California, November 1999.
160. Rice University Seminar, Houston, Texas, April 1999.
161. Worcester Polytechnic Institute Seminar, Worcester, Massachusetts, February 1999.
162. University of Florida GERC Seminar, Shalimar, Florida, January 1999.
163. First HPC, Application and Training Workshop, Atlanta, Georgia, March 1998.
164. Workshop on Parallel Computing in Applied Fluid Mechanics, Pisa, Italy, September 1997.
165. AHPCRC 1997 Infrastructure Support Workshop, Vicksburg, Mississippi, February 1997.
166. Army Research Lab CFD6 CHSSI Meeting, Aberdeen, Maryland, August 1996.
167. AHPCRC Infrastructure Support Workshop, Aberdeen, Maryland, February 1996.
168. AHPCRC-ARL Joint Conference on CFD and CSM, Aberdeen, Maryland, December 1994.
169. Symposium on Parallel FE Computations, Minneapolis, Minnesota, October 1993.
170. 2nd U.S. National Congress on Computational Mechanics, Washington, D.C., August 1993.
171. U.S.-Japan Symp. on FEM in Large-Scale CFD, Minneapolis, Minnesota, October 1992.
172. 6th Intl Conference on Boundary and Interior Layers, Copper Mtn, Colorado, August 1992.

Contributed Presentations:

173. ECCOMAS Coupled Problems 2009, Ischia, Italy, June 2009.
174. ECCOMAS Coupled Problems 2007, Ibiza, Spain, May 2007.
175. 13th Conf. of the European Society of Biomechanics, Wroclaw, Poland, September 2002.
176. 5th European Conference on Computational Mechanics, Krakow, Poland, June 2001.
177. Finite Element in Fluids 2000, Austin, Texas, May 2000.

Teaching Experience

Undergraduate/Graduate

Simulation Methods in Engineering
www.cats.rwth-aachen.de/teaching/simtech

Finite Elements in Fluids
www.cats.rwth-aachen.de/teaching/fef

Engng Mechanics: Statics and Dynamics
www.cats.rwth-aachen.de/teaching/cm1

Graduate

Parallel Computing Methods in Comput. Mech.
www.cats.rwth-aachen.de/teaching/para

Numerical Methods in Engineering
(Rice University elective)

Shear Stress and Hemolysis in VADs
(compact course at Politecnico di Milano)

Service

Editorial Board:

Computer and Mathematics with Applications (Elsevier, since 2012)

Lecture Notes in Applied Mathematics and Mechanics (Springer, since 2012)

Advisory Board:

International Journal for Numerical Methods in Fluids (Wiley, since 2005)

Vice-President:

German Association for Computational Mechanics (2017–2021)

General Council Member:

International Association for Computational Mechanics (since 2013)

Scientific Board:

Maison de la Simulation, Paris-Saclay, France (since 2012)

Michael Stifel Center Jena for Data-Driven and Simulation Science (since 2015)

Journal Referee:

Advances in Water Resources, Annals of Biomedical Engineering, ASCE Journal of Engineering Mechanics, ASME Journal of Applied Mechanics, Central European Journal of Mathematics, Communications in Numerical Methods in Engineering, Computational Mechanics, Computer Methods in Applied Mechanics and Engineering, Computers & Fluids, Computers and Mathematics with Applications, IEEE Computational Science & Engineering, International Journal for Numerical Methods in Engineering, International Journal for Numerical Methods in Fluids, International Journal of Applied Science and Computations, International Journal of Computational Fluid Dynamics, International Journal of Engineering Science, International Journal of Thermal Sciences, Journal of Biomechanics, Journal of Computational Physics, Journal of Engineering Design, Journal of Heat Transfer, Journal of Visualization, Optimization and Engineering, Parallel Computing, Physics of Fluids, SIAM Journal on Scientific Computing, Langmuir

Chairman:

Board of Examinations (Prüfungsausschuss), Computational Engineering Science study program (Bachelor and Master), RWTH Aachen University

Board of Examinations, Master in Simulation Sciences non-consecutive study program, RWTH Aachen University and Forschungszentrum Jülich

Lichtenberg High Performance Computing Facility Advisory Board, Technical University of Darmstadt

Proposal Referee:

European Research Council Starting, Consolidator, and Advanced Grant program; German Research Foundation; German-Israeli Foundation for Scientific Research and Development; Volkswagen Stiftung; National Science Foundation; US-Israel Binational Science Foundation; Petroleum Research Fund; Fonds Wetenschappelijk Onderzoek – Vlaanderen

Professional Affiliations:

1995–present International Association of Computational Mechanics IACM

1995–present U.S. Association of Computational Mechanics USACM

2003–present German Association of Computational Mechanics GACM

2011–present Gesellschaft für Angewandte Mathematik und Mechanik GAMM

2000–2003 American Institute of Aeronautics and Astronautics

2001–2003 American Society of Engineering Education

Miscellaneous:

Accreditation coordinator for Simulation Sciences Master Study Program of RWTH Aachen University and Forschungszentrum Jülich (ASIIN accreditation issued in 2009 and reissued in 2015).

Member of the Steering Committee of the Profile Area *Computational Science and Engineering* at RWTH Aachen.

Member of the Supporting Committee of the 3rd ECCOMAS Young Investigators Conference and 6th GACM Colloquium on Computational Mechanics in Aachen 2015.

Member of the CFD Committee of the ECCOMAS Congress in Crete 2016.

Member of the International Scientific Committee of the 12th World Congress on Computational Mechanics in Seoul 2016.

Member of the Panel “Stärkung der Wettbewerbsfähigkeit niedersächsischer Hochschulstandorte”, Volkswagen Stiftung 2012 and 2016.

Member of the Evaluation Panel “Elitenetzwerk Bayern”, State of Bavaria 2015.

Member of the Program Committee of the 5th International Conference on Computational and Mathematical Biomedical Engineering in Pittsburgh 2017.

Member of the Scientific Organizing Committee of the 13th World Congress on Computational Mechanics in New York City 2018.

**Doctoral
Advising**

Feby Abraham (Rice 2004), Dhruv Arora (Rice 2005), Mehdi Behbahani, Stefanie Elgeti, Marcus Hormes, Dimitrios Papadopoulos (RWTH 2011), Mike Nicolai (RWTH 2012), Gero Schieffer, Marcus Probst (RWTH 2013), Bae-Hong Chen, Georg Wellmer (RWTH 2014), Eva Schlauch (RWTH 2015), Eric Borrmann, Lutz Pauli (RWTH 2016), Kerstin Brandes, Manuel Brüderlin, Metin Cakircali, Max von Danwitz, Stefan Haßler, Norbert Hosters, Violeta Karyofylli, Michel Make, Emre Öngüt, Lars Reimer, Loïc Wendling (RWTH current)

**Doctoral
Co-Advising**

Oscar Coronado (Rice 2008), Martin Krause (RWTH 2010), Arianna Bosco, Kwok-Wah Chen, Tue Nguyen (RWTH 2011), Safdar Abbas, Alaskar Alizada (RWTH 2012), Henning Sauerland (RWTH 2013), Malak Baydoun, Andreas Püttmann, Christian Windisch (RWTH 2014), Sarah Frauholz (RWTH 2015), Atanas Stavrev, Niko Weber (RWTH 2016), Sebastian Eusterholz, Markus Frings, Jan Helmig, Fabian Key, Philipp Knechtges, Roland Siegbert, Florian Zwicke (RWTH current)