CHARBEL FARHAT

Vivian Church Hoff Professor of Aircraft Structures
James and Anna Marie Spilker Chair of Aeronautics and Astronautics
Professor, Institute for Computational and Mathematical Engineering
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RESEARCH INTERESTS

Acoustic Scattering, Aeroelasticity, Aerothermodynamics, Bayesian Optimization, Computational Fluid Dynamics, Computational Structural Dynamics, Computational Science and Engineering, Coupled Field Problems, Digital Twinning, Dynamic Data-Driven Systems, Finite Element Approximation, Fluid-Structure Interaction, High Performance Computing, Implosion, Physics-Based Machine Learning, Model Reduction, Multidisciplinary Design Analysis and Optimization, Multiscale Analysis, Numerical Analysis, Real-Time Computing, Uncertainty Quantification

EDUCATION

Ph.D. (1986)	University of California, Berkeley, Civil Engineering
M.S. (1986)	University of California, Berkeley, Electrical Engineering and Computer Sciences
M.S. (1984)	University of California, Berkeley, Structural Engineering and Structural Mechanics
M.S. (1983)	Université de Paris VI, France, Applied Mechanics
B.S. (1983)	Ecole Centrale des Arts et Manufactures, France, Diploma of Engineering

ACADEMIC EXPERIENCE

2022-2023	**James and Anna Marie Spilker Chair of the Department of Aeronautics and Astronautics**, Inaugural Holder, Stanford University
2014–	**Director**, King Abdulaziz City for Science and Technology Center of Excellence for Aeronautics and Astronautics, Stanford University
2014-2016	**Representative**, Forty-Seventh Faculty Senate, Stanford University
2008-2023	**Chairman**, Department of Aeronautics and Astronautics, Stanford University

2008–	**Vivian Church Hoff Professor of Aircraft Structures**, Stanford University
2007-2018	**Director**, Army High Performance Computing Research Center, Stanford University
2004–	**Professor**, Institute for Computational and Mathematical Engineering, Stanford University
2004-2023	**Professor**, Department of Mechanical Engineering, Stanford University
2000-2004	**Chairman**, Department of Aerospace Engineering Sciences, University of Colorado at Boulder
1999-2000	**Interim Chair**, Department of Aerospace Engineering Sciences, University of Colorado at Boulder
1996-2004	**Director**, Center for Aerospace Structures, University of Colorado at Boulder
1995-2004	**Professor**, Department of Aerospace Engineering Sciences, Center for Aerospace Structures, and Center for Applied Parallel Processing, University of Colorado at Boulder
1990-1995	**Associate Professor**, Department of Aerospace Engineering Sciences, Center for Aerospace Structures, Center for Space Construction, and Center for Applied Parallel Processing, University of Colorado at Boulder
1987-1990	**Assistant Professor**, Department of Aerospace Engineering Sciences, Center for Space Structures and Controls, Center for Space Construction, and Center for Applied Parallel Processing, University of Colorado at Boulder

HONORS AND AWARDS

National and International Recognitions

- Vannevar Bush Faculty Fellowship, The Department of Defense (2023)
- Appointed to the Space Technology Industry-Government-University Roundtable (2017)
- Appointed to the United States Air Force Scientific Advisory Board (2015)
- Designated as a Primary Key-Influencer and Flown by the Blue Angels during Fleet Week (2014)
- Knighted by the Prime Minister of France in the Order of Academic Palms, Chevalier dans l'Ordre des Palmes Académiques (2011)
- FNRS Fellow, Belgian National Science Foundation (1993)
- The Presidential Young Investigator Award, The National Science Foundation and The White House (1989)

Memberships in Academies

- New York Academy of Sciences (2021)

- Lebanese Academy of Sciences (2017)
- Royal Academy of Engineering, UK (2016)
- National Academy of Engineering (2013)

Honorary Degrees

- Docteur Honoris Causa, Ecole Nationale Supérieure d'Arts et Métiers, Paris, France (2022)
- Docteur Honoris Causa, Ecole Normale Supérieure Paris-Saclay, France (2017)
- Docteur Honoris Causa, Ecole Centrale de Nantes, France (2017)

Professional Society Fellowships

- Fellow of the Society of Engineering Science (2024)
- Fellow of the Society of Industrial and Applied Mathematics (2011)
- Fellow of the American Society of Mechanical Engineers (2003)
- Fellow of the International Association of Computational Mechanics (2002)
- Fellow of the World Innovation Foundation (2001)
- Fellow of the United States Association of Computational Mechanics (2001)
- Fellow of the American Institute of Aeronautics and Astronautics (1999)

Major Professional Society Awards

- The Spirit of St Louis Medal, The American Society of Mechanical Engineers Aerospace Division (2017)
- The Japan Society for Computational Engineering and Science (JSCES) Grand Prize (2017)
- The AIAA Ashley Award for Aeroelasticity, The American Institute of Aeronautics and Astronautics (2017)
- The Gauss-Newton Medal, The International Association of Computational Mechanics (2014)
- The IACM Award, The International Association of Computational Mechanics (2012)
- Lifetime Achievement Award, The American Society of Mechanical Engineers Computers and Information in Engineering Division (2011)
- The Structures, Structural Dynamics and Materials Award, The American Institute of Aeronautics and Astronautics (2010)
- The John von Neumann Medal, The United States Association of Computational Mechanics (2009)
- The Gordon Bell Prize, The Institute of Electrical and Electronics Engineers Computer Society (2002)
- The Computational Mechanics Award, The International Association of Computational Mechanics (2002)
- The Computational and Applied Sciences Medal, The United States Association of Computational Mechanics (2001)

- The Sidney Fernbach Award, The Institute of Electrical and Electronics Engineers Computer Society (1997)

Other Significant Awards

- The Olof B. Widlund Prize, Domain Decomposition Methods (2024)
- The Commander's Public Service Award, Department of the Air Force (2019)
- Outstanding Professor in Aeronautics and Astronautics, Stanford University (2010)
- Designated as an ISI Highly Cited Author in Engineering by the ISI Web of Knowledge, Thomson Scientific Company (2009)
- The Subaru Educator Spotlight (2003)
- Engineer of the Year, The American Institute of Aeronautics and Astronautics Rocky Mountain Section (2001)
- The Department of Defense Modeling and Simulation Award (2001)
- The International Association of Computational Mechanics Young Investigator Award (1998)
- The R. H. Gallagher Special Achievement Award, The United States Association of Computational Mechanics (1997)
- The College of Engineering & Applied Sciences Research Award, The University of Colorado (1996)
- The IBM Sup'Prize Achievement Award (1995)
- The Arch T. Colwell Merit Award, The Society of Automotive Engineering (1993)
- Research Featured in Yearbook of Science and the Future by Encyclopaedia Britannica (1992)
- CRAY Research Gigaflop Performance Award (1990)
- TRW Fellow (1989-1992)
- CRAY Research Award (1989)
- The Junior Faculty Development Award, University of Colorado (1988)
- The Control Data Corporation PACER Fellowship (1987-1989)

Best Paper Awards

- 2023 Collier Aerospace HyperX/AIAA Structures Best Paper Award, The American Institute of Aeronautics and Astronautics (2024)
- February JCISE Best Paper Award and Spotlight Talk, The American Society of Mechanical Engineers (2023)
- 2021 AIAA Multidisciplinary Design Optimization Best Paper Award, The American Institute of Aeronautics and Astronautics (2022)
- Winning Paper of Robert J. Melosh Medal (co-author), Duke University (2008)
- Winning Paper of Robert J. Melosh Medal, Duke University (2002)
- The American Society of Mechanical Engineers Aerospace Structures and Materials Best Paper Award (1994)

Major Distinguished Lectures

- The Edison Lecture, University of Notre Dame (2019)
- Public Lecture, Lebanese Academy of Sciences, Beirut, Lebanon, November 28 (2018)
- The Ted Belytschko Lecture, Nortwestern University (2016)
- The Liviu Librescu Memorial Lecture, Virginia Tech (2015)
- The MIT Den Hartog Lecture in Mechanics, The Massachusetts Institute of Technology, (2015)
- The Structures, Structural Dynamics and Materials Lecture, The American Institute of Aeronautics and Astronautics (2011)
- AGARD Lecturer (1988, 1991, 1993, 1995)

Who's Who Listings

- Who's Who in Higher Education Engineering (2006)
- Who's Who in Computational Science and Engineering (2005)

VISITING PROFESSOR/SCIENTIST APPOINTMENTS

- Visiting Professor, Mathématiques Appliquées de Bordeaux, Université de Bordeaux I, France, June 1-30 (2000)
- Visiting Professor, LM2S, Ecole Normale Superieure de Cachan, France, December 1-30 (1997)
- Visiting Professor, CNRS/IUST/Université de Provence, France, June 15-July 15 (1996)
- Visiting Professor, Université de Paris VI, France, and Ecole Normale Superieure de Cachan, France, September 1-October 7 (1995)
- Visiting Professor, ICASE, NASA Langley Research Center, Hampton, Virginia, October 3-10 (1995)
- Visiting Professor, LTAS, Université de Liège, Belgium, June 1-30 (1993)
- Visiting Professor, Institut National de Recherche en Informatique et en Automatique (INRIA), Sophia-Antipolis, France, July 23 - August 23 (1990)
- Visiting Scientist, ECSEC (IBM Rome), Italy, September 1-30 (1989)

SHORT COURSES TAUGHT

- CISM, Course on "Computational Fluid-Structure Interaction," Udine, Italy, June 27 - July 1 (2016)

- CISM, Course on "Computational Fluid-Structure Interaction," Udine, Italy, September 6-10 (2010)
- ECCOMAS School, Course on "Advanced Computational Methods for Fluid/Structure Interaction," Ibiza, Spain, May 3-7 (2006)
- Promuval Short Course on "Multidisciplinary Modeling, Simulation and Validation in Aeronautics," Barcelona, Spain, June 28-29 (2004)
- Ecole d'Eté EDF-CEA-INRIA, "Multiphysics Couplings and Multidomain Methods," Saint-Lambert-des-Bois, France, June 14-24 (2004)
- "Domain Decomposition Methods for Structural Mechanics and Acoustic Scattering," Post-Conference Short Course, Fifth U.S. National Congress on Computational Mechanics, Boulder, Colorado, August 4-6 (1999)
- "Strategies and Tools for Parallelising Large Computational Mechanics Codes for Structural, Fluids, Electromagnetics and Multiphysics Analysis," London, The United Kingdom, November 11-12 (1996)
- Ecole d'Eté CEMRACS sur les "Méthodes de Couplage Fluide/Structure," Orsay, France, July 14-21 (1996)
- Troisième Ecole d'Eté GUT-CET sur la "Modélisation Numérique en Thermique," Ile de Porquerolles, France, July 1-6 (1996)
- "Couplage Fluide-Structure," Ecole Polytechnique de Tunis, La Marsa, Tunisia, March 27-29 (1996)
- "Parallelising Large CFD and Structures Codes," AIRPORT European Consortium, Maison des Polytechniciens, Paris, France, November 16-17 (1995)
- "Parallel Computing in Computational Fluid Dynamics," NASA Ames Research Center, Moffett Field, California, October 16-20 (1995)
- "Tutorial sur les Methodes Numériques pour les Grands Systèmes," Ecole Polytechnique de Tunis, La Marsa, Tunisia, September 18-19 (1995)
- "Advanced Course on Computational Fluid Dynamics for Industrial Applications," (COSMASE Course) Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, June 26-30 (1995)
- "Parallel Computing in Computational Fluid Dynamics," von Kármán Institute for Fluid Dynamics, Belgium, May 15-19 (1995)
- "Parallélisation de Grands Codes: Applications Industrielles et à la Recherche," CNRS France, June 7-10 (1994)
- "Recent Advances in Iterative Algorithms for Solving Systems and Eigenvalue Problems," University of Leuven, Belgium, March 22-24 (1994)
- "Domain Decomposition and Parallel Processing in Structural Mechanics," Université de Liège, Belgium, October 6 - October 8 (1992)

- "An Introduction to Parallel Scientific Computations," Université de Liège, Belgium, January 28 - February 1st (1991)

TEACHING AND TRAINING

The University of Colorado at Boulder

Undergraduate Curriculum

- Has designed and developed a new undergraduate course on Aerospace Vehicle Design and Performance that combines analytical, design, and experimental studies.
- Has introduced a new computer-aided structural design course that has consistently attracted more students than the department imposed limit.
- Has developed an original computer visualization software (TOP) to enhance the teaching of stress analysis, structural vibration, and wave propagation. This visualization software has been used for supporting teaching in this university and research at over forty major government institutions and industrial companies.
- Has set up, partially funded, and maintained a new departmental undergraduate computer laboratory.
- Has been active as a Structural Advisor of undergraduate students in the Space Grant College Get Away Special (GAS) program, particularly in the structural analysis of the G-285 solar viewing payload for the shuttle flight of March 1993.
- Has participated in the development of the Integrated Teaching Laboratory (ITL) as a member of the ITL-HPC Committee.
- Has offered several undergraduate students the opportunity to participate in research projects and has supervised their creative efforts.

Graduate Curriculum

- Has designed a new graduate course on mechanical and structural vibrations.
- Has introduced a new advanced numerical analysis course for computational engineering. This course has consistently attracted over thirty graduate students from the entire College of Engineering.
- Has developed a new graduate course on Variational Methods in Mechanics that has also attracted graduate students from several other engineering departments.
- Has redesigned the concept and requirements of the Ph.D. Preliminary Exam.
- Has set up a state-of-the-art high-performance computer visualization laboratory that currently supports several research projects.

Courses Taught

- Advanced Finite Element Seminar - Graduate Level
- Computational Gas Dynamics - Graduate Level
- Mechanical and Structural Vibrations - Graduate Level
- Computational Engineering Software - Graduate Level
- Variational Methods in Mechanics - Graduate Level
- Advanced Numerical Analysis for Computational Mechanics - Graduate Level
- Flight Mechanics - Undergraduate Level
- Structures II - Required, Undergraduate Level
- Analysis and Design of Space Structures - Undergraduate Level
- Introduction to Aerospace Vehicle Design and Performance - Required, Undergraduate Level
- Introduction to Aerospace Engineering - Undergraduate Level

Undergraduate Students Supervised and Supported

- Thomas Gullaud, Information Technology for Data-Driven Systems (2004)
- Julien Cortial, Time-Decomposed Parallel Solution of Partial Differential Equations (2003-2004), Digital Sciences & Technologies Department, Safran Tech, France
- Frédéric Lechenault, A Data-Driven Environment for Multiphysics Applications (2002-2003)
- Kris van der Zee, Design and Analysis of Partitioned Solution Schemes for the Three-Field Formulation of Aeroelastic Problems (2002), Associate Professor, School of Mathematical Sciences, University of Nottingham, UK
- Chris Jeppesen, Immersive Visualization of Computational Data (2002)
- Otto Krauss, Adaptive Finite Element Meshing in CFD (2002)
- Jason Lechniak, Finite element modeling of complete F-16 and F-18 aeroelastic configurations (2001-2002), Flight Test Center, Edwards Air Force Base
- Marion Chandesris, Time-parallel Solution of Systems of ODEs (2001-2002), Laboratoire d'Innovation pour les Technologies des Energies Nouvelles et les Nanomatriaux (LITEN), France
- Lam Pham, Scientific Visualization and Graphics User Interfaces (1998-2002)
- Ulrich Hetmaniuk, Linearized Aeroelasticity (1998), Associate Professor of Applied Mathematics, University of Washington
- Emily Best, Interactive Two- and Three-dimensional Rendering of Flow Streamlines (1997)

- Matthew Young, Stereoscopy Algorithms for Scientific Visualization and Fast Animation of Contour Plots (1994)
- Chad McArthur, Analysis and Optimization of the Aeroelastic Research Wing ARW-2 (1994)
- Bob Stoner, Object-Oriented Interactive Visualization of Continuum Problems (1992)
- Morgan Jones, Finite Element Modeling and Analysis of a Solar Viewing Payload (1990-1991)
- Malachy Carroll, Finite Element Modeling and Analysis of a Solar Viewing Payload (1990-1991)
- Russell Partch, Scientific and Engineering Visualization (1990), Branch Chief, United States Air Force, Albuquerque, New Mexico
- William Skaff, Structural Design of a High Speed Civil Transport Wing (1990)
- Rick Stewart, Structural Design of a High Speed Civil Transport Wing (1990)

Master Students Supervised

- Holly Lewis, High-Fidelity Simulation of Aircraft Trimming (2003-2004)
- Rizwan Ansari, Scientific Visualization (2003)
- Jason Lechniak, Numerical Simulation of the Aeroelastic Behavior of Fighters During High-G Maneuvers (2002-2004), Flight Test Center, Edwards Air Force Base
- Paul Wiedemann-Goiran, Discontinuous Galerkin Methods for the Solution of Acoustic Scattering Problems in the Mid-Frequency Regime (2001-2002)
- Charbel Bou-Mosleh, Arbitrary Finite Element Representation of Rigid Body Modes in Computational Mechanics (2001-2002), Associate Professor of Mechanical Engineering, Notre Dame University, Lebanon
- David Carpenter, The Finite Volume Variational Multiscale Large Eddy Simulation Method (2001-2002)
- Ulrich Hetmaniuk, FETI for Structures with Axisymmetric Components (1999), Associate Professor of Applied Mathematics, University of Washington
- Ben Johanson, Finite Element Modeling of Jet Fighters (1999)
- Chris Saam, Computational Geometry Algorithms for Fluid/Structure Interaction Problems (1997)
- Greggory Brown, M.S. Thesis: Analysis of Inflatable Structures (1994), Computational Mechanics Engineer, SRT, Inc.
- Russell Partch, M.S. Thesis: A Methodology for Finite Element Post-Processing Animation (1991), Branch Chief, United States Air Force, Albuquerque, New Mexico

- Sophie Zurquiyah, M.S. Thesis: Corotational Formulation of Coupled Fluid/Structure Finite Element Problems (1990), Group CEO, CGG
- Yves Dubois Pélerin, M.S. Thesis: Computational Methods for Two-Way Coupled Thermoelastic Problems (1988)

Doctoral Students Supervised

- Charbel Bou-Mosleh, Ph.D. Thesis: Methodologies for Reproducing In-Flight Loads of Aircraft Wings on the Ground and Predicting Their Response to Battle-Induced Damage (2005), Professor of Mechanical Engineering, Notre Dame University, Lebanon
- Chuck Harris, Ph.D. Thesis: Expanding a Flutter Envelope Using Accelerated Flight Data and Application to the F-16 Fighter (2003), Flight Test Center, Edwards Air Force Base
- Ulrich Hetmaniuk, Ph.D. Thesis: Fictitious Domain Decomposition Methods for Partially Axisymmetric Exterior Helmholtz Problems (2002), Research Engineer, Associate Professor of Applied Mathematics, University of Washington
- Melike Nikbay, Ph.D. Thesis: Coupled Sensitivity Analysis by Discrete-Analytical Direct and Adjoint Methods with Applications to Aeroelastic Optimization and Sonic Boom Minimization (2002), Professor of Aeronautics and Astronautics, Istanbul Technical University
- Hai Tran, Ph.D. Thesis: Numerical Simulation of Fluid/Structure Interaction Phenomena in Viscous Dominated Flows (2001), Development Engineer, DuPont, Inc.
- Christoph Degand, Ph.D. Thesis: Moving Grids for Nonlinear Dynamic Aeroelastic Simulations (2001), Software Engineer, CFD Adapco Group (STAR CD)
- Kendall Pierson, Ph.D. Thesis: A Family of Domain Decomposition Methods for the Massively Parallel Solution of Computational Mechanics Problems (2000), Sandia National Laboratories
- Antonini Puppin-Macedo, Ph.D. Thesis: Finite Element and Domain Decomposition Methods for Acoustic Scattering Problems (1999), Boeing, Sao Paolo, Brazil
- Greg Brown, Ph.D. Thesis: The Second Generation Sensitivity Based Element by Element Method for Updating Dynamic Finite Element Models (1999), Computational Mechanics Engineer, SRT, Inc.
- Po-Shu Chen, Ph.D. Thesis: Scalable Substructuring Methods for High Performance Structural Analysis (1997), Research and Development Staff, ANSYS
- Russell Partch, Ph.D. Thesis: Adaptivity of Space Structures via Thermal Actuators (1995), Branch Chief, United States Air Force, Albuquerque, New Mexico
- Michel Lesoinne, Ph.D. Thesis: Mathematical Analysis of the Three Field Coupled Aeroelastic Problem (1994), Assistant Professor, Department of Aerospace Engineering Sciences, CMSoft, Inc.

- Francois Hemez, Ph.D. Thesis: Theoretical and Experimental Correlation between Finite Element Models and Modal Tests for Large Flexible Space Structures (1993), Technical Specialist, Los Alamos National Laboratories
- Paul Stern, Ph.D. Thesis: Unconditionally Stable Staggered Solution Algorithms for Transient Finite Element Analysis of Coupled Thermoelastic Problems (1993), Software Engineer, Fluid Dynamics International, Inc.
- Tzer Yuaan Lin, Ph.D. Thesis: A Multiple Frames of Reference Approach to Aeroelastic Computations: Application to Airfoil Flutter Analysis (1990), Deputy Division Chief, AIDC, Taiwan

Post-Doctoral Assistants Supervised

- Francois Courty (2004)
- Masaki Sato (2003-2004)
- Henri Bavestrello (2002-2004), Astrium Satellites, France
- Jing Li (2002-2003), Associate Professor of Mathematical Sciences, Kent University
- Philip Avery (2001-2004), Senior Research Engineer, Stanford University
- Hai Tran (2001-2003), Development Engineer, DuPont, Inc.
- Gert Rebel (2001-2002), Computational Scientist, Goodyear, Inc.
- Karim Traore (2001)
- Greg Brown (2000-2001), Computational Mechanics Engineer, SRT, Inc.
- Antonini Macedo (2000), Boeing, Sao Paolo, Brazil
- Philippe Geuzaine (1999-2003), General Manager, CENAERO, Belgium
- Radek Tezaur (1998-2004), Senior Research Engineer, Stanford University
- Rabia Djellouli (1996-2003), Professor of Mathematics, Northridge University
- Armin Beckert (1999), Research Engineer, the European Aeronautics, Defense, and Space Company, Germany
- Kurt Maute (1998-1999), Professor of Aerospace Engineering Sciences, University of Colorado at Boulder
- Daniel Rixen (1997-1999), Professor of Mechanical Engineering, Technische Universitaet Muenchen, Germany
- Marcus Sarkis (1997-1998), Professor of Mathematical Sciences, Worcester Polytechnic Institute
- Catherine Lacour (1997), Professor of Mathematics, Université de Montpellier, France
- Po-Shu Chen (1997), Research and Development Staff, ANSYS

- Bruno Koobus (1995-1997), Professor of Mathematics, Université de Montpellier, France
- Michel Lesoinne (1994-1997), CMSoft, Inc.
- Paul Stern (1993-1996), Software Development Engineer, Fluid Dynamics International, Inc.
- Francois Hemez (1993-1994), Technical Specialist, Los Alamos National Laboratories
- Nathan Maman (1993-1994), Research and Development Scientist, SIMULOG, Paris, France
- Luis Crivelli (1992-1993), Research and Development Engineer, Hibbitt, Karlsson & Sorensen, Inc.
- Stéphane Lantéri (1992-1993), Directeur de Recherches, INRIA Sophia Antipolis, France
- Florence Roudolff (1992), Senior Research Scientist, ONERA, France
- Eddy Pramono (1990-1992), Senior Engineer, the IC Design Group, Inc.
- Nahil Sobh (1988-1989), Lead Scientist, Beckman Institute, University of Illinois at Urbana-Champaign

Stanford University

Graduate Curriculum

- Has designed new graduate courses on mechanical vibrations, fluid-structure interaction, finite element analysis, computational fluid dynamics, and model order reduction.

Courses Taught

- Numerical Methods for Compressible Flows - Graduate Level
- Model Reduction - Graduate Level
- The Finite Element Method for Fluid Mechanics - Graduate Level
- Mechanical Vibrations - Graduate Level
- Finite Element-Based Modeling of Linear Fluid-Structure Interaction Problems - Graduate Level
- Computational Methods in Fluid Mechanics - Graduate Level
- Introduction to Numerical Methods for Engineering - Graduate Level
- Applied Mechanics: Statics - Undergraduate Level

Undergraduate Students Supervised and Supported

- Shiva Yamamoto, Computational Investigation of Vortex Shedding Downstream of a Gurney Flap-Equipped Airfoil (2021)

- Isaiah Colobong, Aerodynamic Optimization of the F1 Double Deck Rear Wing (2021)
- Shiley Einav, Racecar Undertray CFD Analysis Report (2020)
- Patrick Phelps, Numerical Simulation of Underbody Blast Problems (2015-2016)
- Sunil Deolalikar, Explicit Nonlinear Transient Structural Dynamics Using Liszt (2012-2014)
- Andy Le, Implementation of Advanced Computational Algorithms for Contact Analysis (2012-2013)
- Daniel Espinel, Verification of Computational Mechanics Models and Software (2011-2012)
- Ian Villa, Computational Models for Structural and Fluid Dynamic Analyses (2010-2013)
- Alex Sabbatini, Generation of Parametric Reduced-Order Model Databases Using MATLAB (2009-2011)
- Nicole Spillane, Conjugate Heat Transfer Analysis of Natural Convection Problems (2008-2009)
- Climène Dastillung, Performance Analysis of Time-Decomposed Parallel Solution Algorithms (2004-2005)
- Thomas Gullaud, Information Technology for Data-Driven Systems (2005)

Master Students Supervised

- Bruce Liu (2023–)
- Yasmina Elmore (2023–)
- Matthew Chmiel, Characteristics of Hypersonic Aircraft and Related Design Issues (2021-2022), AFRL
- Katherine Cao, On the Excluded Volume Equation of State and Associated Numerical Flux Modifications for Hypersonic Flow Computations (2021-2023)
- Faisal As'ad, Incorporation of Hyperreduction in Greedy Sampling Procedures (2020), Stanford University
- Emily Jewell, Computational Methods for Supersonic Retropropulsion (2018-2020), Stanford University
- Noah Ben Youkilis, Entropy Fixes for Roe's Solver (2018-2020), Stanford University
- Scott Neuhoff, (2018–2019)
- David Ata, Advanced Embedded Boundary Methods for CFD (2018–2019)
- Wanli He, In-situ Adaptive Reduction of Nonlinear Multiscale Structural Dynamics Models (2017–2019), Metabit Trading, China

- Aashiq Muhamed, Convexification Algorithms (2017)
- Matej Kosec, Computational Graphics (2016-2017)
- Spencer Anderson, Multidisciplinary Design Optimization with Projection-Based Reduced-Order Models (2016-2017), Stanford University
- Andrew McClellan, True Upwinding in Embedded Boundary Methods (2016-2017), Senior Systems Engineer I, Raytheon
- Jonathan Ho, Embedded Boundary Method for Shape Sensitivity Analysis (2016-2017), Luminary Cloud
- Johanna Ehlers, Multiscale Modeling of Fabric (2016-2017), Rubrik
- Zhe Zhang, CFD Analysis of Wavy Wall Effects on Drag Reduction (2016-2017)
- Cristina White, Machine Learning for CFD (2015-2017), Stanford University
- Gabriele Boncoraglio, Multidisciplinary Design Optimization with Projection-Based Reduced-Order Models (2015-2017), C3.ai
- Adrien Bos, Nonparametric Probabilistic Method for Modeling and Quantifying Model-Form Uncertainties (2015-2017), Software Engineer, C3 IoT
- Arthur Morlot, Embedded Boundary Methods for CFD with Constraints (2015-2017), Data Analyst, Amazon
- Matej Jan, Massively Parallel Computational Graphics (2015-2016), Retronator
- Ashley Coates, Computational Modeling of Ablation (2014-2016), NASA Ames Research Center
- Daniel Neumann, CFD-Based Linearized Approach for Comprehensive Frequency Domain Aeroelastic Computations (2014-2015), Technische Universitaet Muenchen, Germany
- Arthur Paul-Dubois-Taine, Parameterization Framework for Aeroelastic Design Optimization of Bio-Inspired Wing Structural Layout (2014-2015), Aeronautical Engineer, Joby Aviation
- Yohann Vautrin, Study of Fluid-Structure Interactions on an Acoustically-Treated Ceramic Matrix Composite Exhaust Center-Body Designed for Next-Generation Turbofan Engines (2014), SAFRAN, Centre de Recherche et Technologie (CRT), Plateau de Scalay, Magny-les-Hameaux, France
- Hubert Wong, Hyper Reduction of Nonlinear Structural Dynamics Models (2012-2014), Product Development, Boeing Commercial Airplanes
- Raunak Deepak Borker, Discontinuous Galerkin Methods for Advection-Diffusion Problems (2013-2014), Discovery Live Team, ANSYS
- Adam Sajdak, Projection-Based Model Reduction Methods for Computational Fluid Dynamics with Deformable Meshes (2013-2014)

- Matteo Ripepi, Computational Aeroelasticity (2013), Politecnico di Milano, Italy
- Alexandre Coderre-Chabot, Multidisciplinary Computational Models for Underbody Blast Problems (2012-2013), CMSoft Inc.
- Michele Pisaroni, Embedded Boundary Methods for Fluid-Structure Interaction Problems (2012), TU Delft, The Netherlands
- Mengze Yu, Computational Models for Micro Air Vehicles with Flapping Wings (2012)
- Dominik Haering, Aeroelastic Performance of a HALE Aircraft (2012), Technische Universitaet Muenchen, Germany
- Rishi Shah, Regression Testing of a Finite Element Software (2012), US Navy
- Todd Chapman, Nonlinear Reduction of Structural Dynamics Models (2012-2013), Cofounder, Hypernet
- Isaac Buenrostro, Dual Time-Stepping Methods for Low Mach Number Flows (2012–2013), Senior Software Engineer, LinkedIn
- Clement Saint-Jalm, An Embedded Boundary Method for Viscous Fluid-Structure Interaction Problems (2011-2012), Zodiac Aerospace, VP Technology Development
- Georg Hammerl, Adaptive Time-Stepping Strategies for Hyperbolic Problems (2010-2011), Technische Universitaet Muenchen, Germany
- Meir Messingher Lang, Aeroelastic Analysis of a HALE System and a Flapping Wing (2009-2011)
- Harsh Menon, Unified Discretization of a Class of Nonlinear Aeroelastic Problems (2009-2012), Zee Aero
- Sebastien Brogniez, Stability Analysis of Coupled Aero-Thermal Solution Algorithms (2007-2008), Saint-Gobain, Paris, France
- Julie Fournier, Conjugate Heat Transfer Analysis of Hypersonic Systems (2007-2008)
- Dalei Wang, Dynamic Data-Driven Systems (2006-2007), Stanford University
- Vamshi Kongara, Motion Algorithms for Dynamic Viscous CFD Meshes (2005-2006)
- David Amsallem, Accelerated Snapshot Computation for Reduced-Order Modeling (2005-2006), Senior Data Science Manager, Meta Reality Labs Research
- Jean-Francois Dord, Underwater Imaging using Time Travel-Based Algorithms (2005-2006), General Electric
- Thomas Gullaud, High-Speed Interactive Scientific Visualization (2005-2006)
- Qiqi Wang, Design and Analysis of Kinetic Energy Conserving Arbitrary Lagrangian Eulerian Schemes (2005), Associate Professor of Aeronautics and Astronautics, Massachusetts Institute of Technology
- Fang Sun, Software Architecture for Dynamic Data-Driven Systems (2005)

- Bjarte Haegland, Stability Analysis of Partitioned Procedures for the Solution of Fluid-Structure Interaction Problems (2004-2005)
- Arthur Rallu, Extrapolation Methods for the Treatment of Far-Field Boundary Conditions (2004-2005), CMSoft, Inc.

Doctoral Students Supervised

- Kofi Blake (2023–)
- Jeffrey Durrant (2023–)
- Lauren Simitz (2023–)
- Christian Porrello (2023–)
- Ali Lasemi (2022–)
- Faisal As'ad (2021–)
- Emily Jewell (2020–)
- Clayton Little (2019–)
- Marie-Jo Azzi (2019–)
- Joshua Barnett (2019–)
- Noah Ben Youkilis, Ph. D. Thesis: Dimensionality Reduction of Embedded Boundary Models for Nonlinear Fluid-Structure Interaction (2023), Engineer for Aeroelastics and Vibration Analysis, Airbus Operations GmbH
- Spenser Anderson, Ph. D. Thesis: Clustering Approaches for Faster Nonlinear Projection-Based Model Order Reduction (2022), Principal Engineer, TSMC
- Jonathan Ho, Ph. D. Thesis: An Embedded Boundary Method with Smoothness Guarantees and its Impact on Aerodynamic Shape Optimization with Topological Changes (2022), Luminary Cloud
- Andrew McClellan, Ph. D. Thesis: Projection-Based Model Order Reduction for Model Predictive Control of a Descending Aircraft (2021), Senior Systems Engineer I, Raytheon
- Gabriele Boncoraglio, Ph. D. Thesis: Model Order Reduction for Multidisciplinary Design Optimization in Higher-Dimensional Parameter Spaces (2021), Senior Data Scientist, C3.ai
- Sebastian Grimberg, Ph. D. Thesis: Projection-based Model Order Reduction and Hyperreduction of Turbulent Flow Models (2020), Research Scientist, Amazon Web Services (AWS) Center for Quantum Computing
- Ashley Coates, Ph. D. Thesis: Computational Flame Propagation Studies in Support of Launch Vehicle Risk Assessment (2020), NASA Ames Research Center

- Zhengyu (Daniel) Huang, Ph. D. Thesis: Modeling and Simulation of the Inflation of Supersonic Parachutes for Mars Landing (2020), Assistant Professor, Computational Mathematics, Beijing International Center for Mathematical Research, Peking University
- Cristina White (2017-2020)
- Todd Chapman, Ph. D. Thesis: Nonlinear Model Order Reduction of Structural Dynamics Systems with Contact and Failure (2019), Cofounder, Hypernet
- Leslie Lei (2015–2019)
- Raunak Deepak Borker, Ph. D. Thesis: A Discontinuous Galerkin Method with Enrichment for Boundary Layers (2018), Discovery Live Team, ANSYS
- Matthew Zahr, Ph. D. Thesis: Adaptive Model Reduction to Accelerate Optimization Problems Governed by Partial Differential Equations (2016), Luis W. Alvarez Postdoctoral Fellow, Department of Mathematics, Lawrence Berkeley National Laboratory; Assistant Professor, University of Notre Dame
- Kyle Washabaugh, Ph. D. Thesis: Faster Fidelity for Better Design: A Scalable Model Order Reduction Framework for Steady Aerodynamic Design Applications (2016), Loads and Dynamics, Boeing Commercial Airplanes
- Alex Main, Ph. D. Thesis: Implicit and Higher-Order Discretization Methods for Compressible Multi-Phase Fluid and Fluid-Structure Problems (2014), Discovery Live Team, ANSYS
- Dalei Wang, Ph. D. Thesis: Fully Implicit and Semi-Implicit Hybrid Discontinuous Space-Time Galerkin Methods for Acoustic Wave Propagation (2013)
- Sebastien Brogniez, Ph. D. Thesis: A Discontinuous Galerkin Method with Lagrange Multipliers for the Advection-Diffusion Equation (2012), Saint-Gobin, Paris, France
- Jon Tomas Grétarsson, Ph. D. Thesis: Fully Conservative Robust Treatment of Thin Shell Fluid-Structure Interactions in Compressible Flows (2012), Computational Mathematician, RelateIQ
- Xianyi Zeng, Ph. D. Thesis: High-Order Embedded Boundary Methods for Fluid-Structure Interaction (2012), Post-Doctoral Assistant, Mechanical Engineering and Materials Science, Assistant Professor, Mathematics, University of Texas at El Paso
- Kevin Wang, Ph. D. Thesis: A Computational Framework Based on an Embedded Boundary Method for Nonlinear Multi-Phase Fluid-Structure Interactions (2011), Associate Professor, Aerospace and Ocean Engineering, Virginia Tech
- Julien Cortial, Ph. D. Thesis: Time-Parallel Methods for Accelerating the Solution of Structural Dynamics Problems (2011), Digital Sciences & Technologies Department, Safran Tech, France
- Kevin Carlberg, Ph. D. Thesis: Model Reduction of Nonlinear Mechanical Systems via Optimal Projection and Tensor Approximation (2011), AI Research Science Manager,

Meta Reality Labs Research, and Affiliate Associate Professor of Applied Mathematics and Mechanical Engineering, University of Washington

- Irina Kalashnikova. Ph. D. Thesis: The Discontinuous Enrichment Method for Multi-Scale Fluid Problems (2011), Sandia National Laboratories
- Edmond Chiu. Ph. D. Thesis: A Conservative Meshless Framework with Applications in Computational Fluid Dynamics (2011), Mercedes-Benz Grand Prix Limited, The United Kingdom
- David Amsallem, Ph. D. Thesis: Interpolation on Manifolds of CFD-Based Fluid and Structural Reduced-Order Models for On-Line Aeroelastic Predictions (Finalist for the 2011 Householder Prize and Winner of the 2010 Ballhaus Award) (2010), Senior Data Science Manager, Meta Reality Labs Research
- Arthur Rallu, Ph. D. Thesis: A Multiphase Fluid-Structure Computational Framework For Underwater Implosion Problems (2009), Technical Product Manager, Decision Cloud
- Jean-Francois Dord, Ph.D. Thesis: High Resolution Underwater Imaging of Complex Objects Using Sparse Sensor Arrays (2009), General Electric
- Ajaykumar Rajasekharan, Ph.D. Thesis: Variationally Consistent Multiscale and Arbitrary Lagrangian Eulerian Time-Integrators for Large Eddy Simulations of Turbulent Flows on Dynamic Grids (2008), Product Development Engineer, Seagate
- Brian Flynt (2007-2008)
- Charbel Bou-Mosleh, Ph.D. Thesis: Methodologies for Reproducing In-Flight Loads of Aircraft Wings on the Ground and Predicting Their Response to Battle-Induced Damage (2005), Professor of Mechanical Engineering, Notre Dame University, Lebanon

Post-Doctoral Assistants Supervised

- Dante de Santis (2014-2016), Nuclear Research & consultancy Group (NRG)
- Frank Naets (2015), Lecturer, The Katholieke Universiteit Leuven
- Patrick Lea (2014-2015), Engineering Analyst, Lawrence Livermore National Laboratory
- Youngsoo Choi (2013-2015), Sandia National Laboratories
- Maciej Balajewicz (2012-2015), Assistant Professor, Aeronautics & Astronautics, University of Illinois at Urbana-Champaign
- Kevin Wang (2012), Associate Professor, Aerospace and Ocean Engineering, Virginia Tech
- Vinod Lakshminarayan (2011-2014), Senior Scientist, US Army Aeroflightdynamics Directorate, AMRDEC, Ames Research Center
- Laurent Monasse (2011-2012), Cermics, Paris, France

- Julien Cortial (2011-2012), Digital Sciences & Technologies Department, Safran Tech, France
- Adam Larat (2010-2011), CNRS, Ecole Centrale de Paris, France
- David Powell (2008-2010), Weapons and Materials Research, The Army Research Laboratory
- Ajaykumar Rajasekharan (2008), Product Development Engineer, Seagate
- Paolo Massimi (2007-2011), Lattice Engines
- Goeric Daeninck (2007), CMSoft, Inc.
- Steffen Petersen (2007), Boston Consulting Group
- Charbel Bou-Mosleh (2006-2008), Professor of Mechanical Engineering, Notre Dame University, Lebanon
- Debraj Ghosh (2005-2008), Professor of Civil Engineering, Indian Institute of Science, Bangalore, India
- Sriram Shankaran (2005-2006), General Electric
- Lin Zhang (2005-2006), Chase
- Thuan Lieu (2004-2008), CMSoft, Inc.
- Henri Bavestrello (2004-2005), Astrium Satellites, France
- Philip Avery (2004-2006), Research Associate, Stanford University

Research Associates Mentored

- David Amsallem (2010-2015), Senior Data Science Manager, Meta Reality Labs Research
- Arthur Rallu (2010), Technical Product Manager, Decision Cloud
- Charbel Bou-Mosleh (2009), Professor of Mechanical Engineering, Notre Dame University, Lebanon
- Philip Avery (2006-2013), Senior Research Engineer
- Radek Tezaur (2004-2011)

Senior Research Engineers Mentored

- Philip Avery (2013–)
- Radek Tezaur (2011–)

UNIVERSITY SERVICE ACTIVITIES

The University of Colorado at Boulder

College of Engineering

- Dean Search Committee (2001-2002)
- Vice-Chancellor Internal Campus Review Committee (1998)
- The First Level Review Committee (1997-1999)
- Academic Representative for the CAS Program Plan at NASA Ames Research Center (1993)
- Executive Committee Member, Center for Space Construction (1992-1994)
- Committee for the Study of the Merger of Aerospace Engineering Sciences and Mechanical Engineering (1988)

Department of Aerospace Engineering Sciences

- Chair, Faculty Search Committee (1999)
- Space Needs ad hoc Committee (1997-1998)
- Graduate Committee (1991, 1992-1996)
- Faculty Search Committee (1990)
- Budget Committee (1988, 1989, 1991)
- Teaching and Curriculum Committee (1987, 1988, 1992, 1994)

Stanford University

Office of the Vice Provost and Dean of Research

- Director of Stanford's Office of Science Outreach Search Committee (2007)

Department of Mechanical Engineering

- Faculty Reappointment Committee (2004)
- Admissions Committee (2005, 2006)
- Chair, Better Professional Environment Committee (2005-2006)

Institute for Computational and Mathematical Engineering

- Steering Committee (2005, 2006)
- Graduate Program Committee (2006,2007)

PROFESSIONAL PRACTICE

Consulting Activities

- Aerion, Inc.
- ANALATOM, Inc.
- ANSYS, Inc.
- Barron Associates, Inc.
- CFD Research Corporation
- CMSoft, Inc.
- CS Communication et Systèmes, France
- Dassault Aviation, France
- Desktop Aeronautics, Inc.
- D&P, LLC.
- European Space Agency, The Netherlands
- Ford Motor Company (CAE Systems)
- GDTech France, Inc.
- Gesellschaft Für Mathematik und Datenverarbeitung, Mbh., Germany
- Goodyear Tire & Rubber Company
- GRI, Inc.
- Lockheed Missiles and Space Company, Inc.
- Lockheed-Martin Aeronautics
- PB Fasteners, Inc.
- RENAULT (Direction de la Mécanique), France
- RENAULT F1 TEAM, France
- SAMTECH, S.A., Belgium
- Sandia National Laboratories
- Stirling Dynamics, Inc.
- Structural Software Development, Inc.
- Systems Technology, Inc.
- TechnoSoft, Inc.
- Toyota Motor Corporation, Japan
- Williams & Connolly LLP

Government Agencies

- NATO (AGARD)

PROFESSIONAL SERVICE ACTIVITIES

Professional Societies and Award Committees

- Fellow, The Society of Engineering Science (**SES**)
- Fellow, The International Association of Computational Mechanics (**IACM**)
- Fellow, The World Innovation Foundation (**WIF**)
- Fellow, The United States Association of Computational Mechanics (**USACM**)
- Fellow, The American Institute of Aeronautics and Astronautics (**AIAA**)
- Fellow, The American Society of Mechanical Engineers (**ASME**)
- Fellow, The Society for Industrial and Applied Mathematics (**SIAM**)
- Member, Pendray Award Committee, The American Institute of Aeronautics and Astronautics (**AIAA, 2022**)
- Chair, Search Committee for the Editor-in-Chief of the Journal of Aircraft, The American Institute of Aeronautics and Astronautics (**AIAA, 2022**)
- Judge, Physical Sciences & Engineering Jury for the Blavatnik National Awards for Young Scientists (**NYAS, 2021–2023**)
- Chair, Summerfield Book Award Committee, The American Institute of Aeronautics and Astronautics (**AIAA, 2021**)
- Member, The American Institute of Aeronautics and Astronautics Publications Ethical Standards Subcommittee (**AIAA, 2018**–)
- Chair, Pendray Award Committee, The American Institute of Aeronautics and Astronautics (**AIAA, 2015–2017**)
- Member, Aerospace Department Chair Association (ADCA), The American Institute of Aeronautics and Astronautics (**AIAA, 2014–2023**)
- Member, The American Institute of Aeronautics and Astronautics Publications Committee (**AIAA, 2012**–)
- Member, Selection Committee 2009 Theodore von Karman Prize (**SIAM**)
- Member, Executive Council, The International Association for Computational Mechanics (**IACM, 2009**–)
- Member, The American Society of Mechanical Engineers Applied Mechanics Division's Committee on Fluid-Structure Interaction (**ASME, 2008-2009**)

- Corresponding Member/Member, Executive Council, The International Association for Computational Mechanics (**IACM, 2006-2009**)
- Vice-Chair, The Society for Industrial and Applied Mathematics' Activity Group on Supercomputing **(SIAG/SC, 2003-2006)**
- Member-at-Large, The United States Association for Computational Mechanics (**US-ACM, 1995-2006**)
- Member, General Council, The International Association for Computational Mechanics (**IACM, 2000**–)

Editor-in-Chief

- International Journal for Numerical Methods in Engineering (2014–)

Editor

- International Journal for Numerical Methods in Fluids (2010–)
- International Journal for Numerical Methods in Engineering (2007-2013)

Editorial Boards

- Journal Advanced Modeling and Simulation in Engineering Sciences (2012–)
- International Journal for Numerical Methods in Biomedical Engineering (2010-2011)
- Springer's Series on Lecture Notes in Numerical Methods in Engineering and Sciences (2009–)
- International Journal for Numerical Methods in Fluids (2005-2010)
- Mathematical Modelling and Numerical Analysis (M2AN) (2005–2016)
- International Journal of Computational Methods in Engineering Science and Mechanics (2005–)
- Communications in Numerical Methods in Engineering with Biomedical Applications (2005-2009)
- SIAM Series on Computational Science and Engineering (2004-2009)
- AIAA Journal of Aerospace Computing, Information, and Communication (2003-2004)
- La Revue Européenne des Eléments Finis (2002–)
- International Journal for Numerical Methods in Engineering (2001-2007)
- International Journal for Numerical Methods in Engineering (1998-2001)
- Computing and Visualization in Science (1998–)

- Engineering with Computers (1998–)
- Computer Methods in Applied Mechanics and Engineering (1997–)
- Parallel Computing (1996-2005)
- SIAM Review (1994-1999)
- The International Journal of High Performance Computing Applications, The MIT Press Journals (1993–)

Editorial Work

- Co-Editor, Proceedings of the Tenth International Meeting on Domain Decomposition Methods for Sciences and Engineering, AMS (1998)
- Co-Editor, Proceedings of the Fourth Copper Mountain Conference on Multigrid Methods, SIAM (1989)

Advisory Boards and Committees

- DesCartes, A CNRS@CREATE Program on Intelligent Modelling for Decision-making in Critical Urban Systems, Science Advisory Board (SAB), France/Singapore (2022–)
- International Scientific and Educational Advisory Board (SEAB), Institute of Aeronautics and Astronautics, Paris-Saclay University, France (2021)
- The National Science Foundation, Leadership-Class Computing Facility (LCCF) Review Board (2021)
- The Space Technology Industry-Government-University Roundtable (2017-2023)
- The United States Air Force Scientific Advisory Board (2015-2019)
- Naval Research Laboratory, Structural Materials Triennial Review Board (2014)
- Airbus Fly Your Ideas Panel of Judges (2013)
- Japan Aerospace Exploration Agency (JAXA), Japan (2011)
- Association Teratec, Board of Advisors, Bruyeres-Le-Chatel, France (2010-2018)
- University of Southern California, Board of Advisors of the Department of Aerospace and Mechanical Engineering (2010)
- California Space Authority, 2009 Regolith Excavation Challenge Panel of Judges (2009)
- Sandia National Laboratories, Predictive Engineering Sciences Panel (2009)
- The Society of Industrial and Applied Mathematics Theodore von Karman Prize Selection Committee (2009)

- The United States Department of Commerce, U.S. Bureau of Industry and Security's Emerging Technology and Research Advisory Committee (ETRAC) (2008-2018)
- Institut Universitaire des Systèmes Thermiques Industriels (IUSTI), Evaluation Committee (2006)
- Office National d'Études et de Recherches Aérospatiales (ONERA), High Scientific Council (2006-2012)
- Sandia National Laboratories, Sandia Science Advisory Board (2006-2009)
- Center for Scientific Computing and Optimization in Multidisciplinary Applications (SCOMA), Board of Advisors, Jyvaskyla, Finland (2005)
- President's Information Technology Advisory Committee (PITAC), Subcommittee on Computational Science (2004)
- Institut National de Recherche en Informatique et Automatique (INRIA), Thème NumD Panel of Experts (2004)
- The National Science Foundation, Simulation-Based Engineering Sciences Initiative Panel (2004)
- The National Science Foundation, Information Technology Research Review Panel (2003)
- Sandia National Laboratories, Engineering Sciences Research Foundation's External Review Panel (Chair) (2002-2009)
- The National Research Council (NRC), Army Research Laboratory Technical Assessment Board's Panel on Air and Ground Vehicle Technology (2002-2007)
- The Fourteenth Annual Robert J. Melosh Medal Competition Jury Panel, Duke University (2002)
- The National Science Foundation, Advanced Computational Research (2001)
- The National Science Foundation, Dynamic Data-Driven Application Systems (2000)
- Ecole Nationale des Ponts et Chaussées, Département de Mathématiques Appliquées (1998)
- The Institute of Electrical and Electronics Engineers Awards Committee (1998-2004)
- The National Science Foundation, New Strategic Initiative for FY2000 and Beyond (1998)
- The National Science Foundation, Engineering Research Center Review Panel (1997)
- The American Institute of Aeronautics and Astronautics Structures Technical Committee (1996-2001)
- The National Science Foundation, CAREER Awards (1996-1997)

- Computational Aerosciences Review and Planning, NASA Ames Research Center (1994-1997)
- The National Science Foundation, MetaCenter Allocations Committee (1994-1996)
- Joint Pittsburgh/Illinois Supercomputing Peer Review Board (1993-1996)
- The National Science Foundation, Division of Electrical Communication Systems (1993)
- The National Science Foundation, NYI Awards (1993)
- IBM Academy of Science and Technology Study (1993)
- The National Science Foundation, ASC Postdoctoral Research Associateship Program (1991)
- The National Science Foundation, ASC SBIR Awards (1990)
- Committee on Parallel Processing and Supercomputing, Aerospace Division of **ASCE** (1987-1989)

Workshop and Conference Committees

- International Scientific Committee Member, Sixteenth World Congress on Computational Mechanics (WCCM2024) and Fourth Pan American Congress on Computational Mechanics (PANACM2024), Vancouver, BC, Canada, July 21-26 (2024)
- Scientific Committee Member, Nineth European Congress on Computational Methods in Applied Sciences and Engineering Mechanics, Lisbon, Portugal, June 3-7 (2024)
- Scientific Committee Member, 16ème Colloque National en Calcul des Structures (CSMA 2024), Giens, France, May 13-17 (2024)
- Scientific Advisory Committee Member, MORTech 2023 – Sixth International Workshop on Model Reduction Techniques, ENS Paris-Saclay, France, November 22-24 (2023)
- Co-Chair, Second IACM Mechanistic Machine Learning and Digital Twins (MLDT) for Computational Science, Engineering and Technology, El Paso, Texas, September 24-27 (2023)
- Scientific Committee Member, XVII International Conference on Computational Plasticity Fundamentals and Applications (COMPLAS) 2023, Barcelona, Spain, September 5-7 (2023)
- Scientific Committee Member, Nineth International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN) 2023, Athens, Greece, June 12-14 (2023)
- Co-Chair, IUTAM Symposium on Data-Driven Mechanics, Paris, France, October 26-28 (2022)

- Scientific Committee Member, Uncertainty Quantification for Machine Learning Integrated Physics Modeling (UQ-MLIP), Arlington, Virginia, August 18-19 (2022)
- International Advisory Committee Member, Twenty-First IACM Computational Fluids Conference (CFC 2021), Hangzhou, China, October 17-21 (2021)
- International Scientific Committee Member, Sixteenth US National Congress of Computational Mechanics, Chicago, Illinois, July 25-29 (2021)
- Scientific Committee Member, Eighth International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2021) and Fourth International Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2021), Athens, Greece, June 21-23 (2021)
- Co-Chair, Machine Learning and Digital Twins for Computational Science & Engineering (MLDT-CSE 2021), San Diego, California, September 26-29 (2021)
- Scientific Committee Member on Computational Fluid Dynamics, Joint Fourteenth World Congress on Computational Mechanics (WCCM 2020) and ECCOMAS Congress, Paris, France, July 19-24 (2020)
- Scientific Committee Member, Third International Conference on Computational Engineering and Science for Safety and Environmental Problems (COMPSAFE 2020), Kobe, Japan, March 8-11 (2020)
- Scientific Committee Member, Computational Sciences and Artificial Intelligence in Industry (CSAI): New Digital Solutions for Societal and Economical Problems, Jyvaskyla, Finland, June 12-14 (2019)
- Scientific Committee Member, Fifteenth US National Congress of Computational Mechanics, Austin, Texas, July 28-August 1 (2019)
- Scientific Committee Member, VIII International Conference on Computational Methods for Coupled Problems in Science and Engineering (Coupled Problems 2019), Sitges, Spain, June 3-5 (2019)
- Scientific Committee Member, Eighth International Conference on Computational Methods in Marine Engineering (Marine 2019), Göteborg, Sweden, May 13-15 (2019)
- International Scientific Organizing Committee Member, Thirteenth World Congress on Computational Mechanics (WCCM XIII) / Second Pan American Congress on Computational Mechanics (PANACM II), New York City, New York, July 22-27 (2018)
- Scientific Committee Member, Sixth European Conference on Computational Mechanics (Solids, Structures and Coupled Problems) - ECCM 6 and Seventh European Conference on Computational Fluid Dynamics - ECFD 7, Glasgow, Scotland, UK, June 11-15 (2018)
- Scientific Advisory Committee Member, Fourth International Workshop on Reduced Basis, POD and PGD Model Reduction Techniques: A Breakthrough in Computational Engineering?, Sevilla, Spain, November 8-10 (2017)

- Scientific Committee Member, Fourteenth US National Congress of Computational Mechanics, Montreal, Canada, July 17-20 (2017)
- Scientific Committee Member, VII International Conference on Computational Methods for Coupled Problems in Science and Engineering (Coupled Problems 2017), Rhodes, Greece, June 12-14 (2017)
- Model Reduction of Parametrized Systems III (MoRePaS 2015), Trieste, Italy, October 13-16 (2015)
- Seventh European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS), Crete, Greece, June 5-10 (2016)
- Scientific Advisory Committee Member, Third International Workshop on Reduced Basis, POD and PGD Model Reduction Techniques: A Breakthrough in Computational Engineering?, Ecole Normale Superieure de Cachan, France, November 4-6 (2015)
- International Scientific Committee Member, Second International Conference on Multi-scale Computational Methods for Solids and Fluids, Sarajevo, Bosnia and Herzegovina, July 20-23 (2015)
- Scientific Committee Member, Thirteenth US National Congress of Computational Mechanics, San Diego, California, July 26-30 (2015)
- International Scientific Committee Member, PANACM 2015, First Pan-American Congress on Computational Mechanics, Buenos Aires, Argentina, April 27-29 (2015)
- Scientific Committee Member, VI International Conference on Computational Methods for Coupled Problems in Science and Engineering (Coupled Problems 2015), Island of San Servolo, Venice, Italy, May 18-20 (2015)
- Organizing Committee, International Workshop on High-Order CFD Methods, January (2015)
- Scientific Committee Member, Committee on Computational Solids and Structural Mechanics, Eleventh World Congress on Computational Mechanics, Barcelona, Spain, July 20-25 (2014)
- Scientific Advisory Committee Member, Second International Workshop on Reduced Basis, POD and PGD Model Reduction Techniques: A Breakthrough in Computational Engineering?, Blois Castle, France, November 3-6 (2013)
- International Scientific Committee Member, Asian-Pacific Congress on Computational Mechanics (APCOM) 2013, Singapore, December 11-14 (2013)
- Scientific Committee Member, Twelveth US National Congress of Computational Mechanics, Raleigh, North Carolina, July 22-25 (2013)
- Scientific Committee Member, Computational Methods for Coupled Problems in Science and Engineering (COUPLED 2013), Ibiza, Spain, June 17-19 (2013)

- Scientific Committee Member, Marine 2013, V International Conference on Computational Methods in Marine Engineering, Hamburg, Germany, May 29-31 (2013)
- Scientific Committee Member, Tenth World Congress on Computational Mechanics, Sao Paulo, Brazil, July 8-13 (2012)
- Advisory Committee Member, XII Pan American Congress of Applied Mechanics, Port of Spain, Trinidad, January 3-6 (2012)
- International Scientific Committee Member, Fifth Symposium on Applied Aerodynamics and Design of Aerospace Vehicles (SAROD-2011), Bangalore, India, November 16-18 (2011)
- Advising Scientific Committee Member, Reduced Basis, POD and PGD Model Reduction Techniques: A Breakthrough in Computational Engineering?, Cachan, France, November 16-18 (2011)
- Dixième Colloque de l'Association Calcul de Structures et Modélisations (CSMA), Giens, France, May 9-13 (2011)
- Technical Advisory Panel Member, Coupled Problems 2011, IV International Conference on Computational Methods for Coupled Problems in Science and Engineering, Kos Island, Greece, June 20-22 (2011)
- International Advisory Committee Member, 16th International Conference on Finite Elements in Flow Problems (FEF2011), Munich, Germany, March 23-25 (2011)
- Scientific Committee Member, Sixteenth U.S. National Congress on Theoretical and Applied Mechanics, Penn State University, Pennsylvania, June 27-July 2 (2010)
- International Advisory Board Member, Fourth European Conference on Computational Mechanics, Paris, France, May 17-21 (2010)
- Scientific Committee Member, Nineteenth U.S. National Congress of Computational Mechanics, Ohio State University, Columbus, Ohio, July 16-19 (2009)
- Technical Advisory Panel Member, Marine 2009, III International Conference on Computational Methods in Marine Engineering, Trondheim, Norway, June 15-17 (2009)
- Technical Advisory Panel Member, Coupled Problems 2009, III International Conference on Computational Methods for Coupled Problems in Science and Engineering, Ischia Island, Italy, June 8-11 (2009)
- Scientific Committee Member, South-East European Conference on Computational Mechanics, Rhodes, Greece, June 22-24 (2009)
- Fifteenth International Conference on Finite Elements in Flow Problems (FEF09), Tokyo, Japan, April 1-3 (2009)
- International Advisory Board Member, Eighth World Congress on Computational Mechanics, Venice, Italy, June 30-July 5 (2008)

- Applications Program Committee, Supercomputing 2007 (SC07), Reno, Nevada, November 10-16 (2007)
- Scientific Committee Member, Ninth US National Congress on Computational Mechanics, San Francisco, California, July 22-26 (2007)
- International Organizing Committee Member, Fourteenth International Conference on Finite Elements in Flow Problems (FEF07), Santa Fe, New Mexico, March 26-28 (2007)
- Scientific Committee Member, IUTAM Symposium on Discretization Methods for Evolving Discontinuities, INSA de Lyon, Lyon, France, September 4-7 (2006)
- Scientific Advisory Board, Seventh World Congress on Computational Mechanics, Los Angeles, California, July 16-22 (2006)
- Scientific Committee Member, Fifteenth U.S. National Congress on Theoretical and Applied Mechanics, University of Colorado at Boulder, Boulder, Colorado, June 25-30 (2006)
- Co-Chair, SIAM Conference on Parallel Processing for Scientific Computing, San Francisco, California, February 22-24 (2006)
- Scientific Program Committee Member, Eighth US National Congress on Computational Mechanics, Austin, Texas, July 24-28 (2005)
- Technical Advisory Panel Member, Marine 2005, Computational Methods in Marine Engineering, Oslo, Norway, June 27-29 (2005)
- Technical Advisory Panel Member, Computational Methods for Coupled Problems in Science and Engineering, Santorini Island, Greece, May 25-28 (2005)
- International Organizing Committee Member, Thirteen Conference on Finite Elements for Flow Problems (FEF05), Swansea, United Kingdom, April 4-6 (2005)
- Scientific and Industrial Committee Member, Fourth European Congress on Computational Methods in Applied Sciences and Engineering, Jyvaskyla, Finland, July 24-28 (2004)
- Scientific Program Committee Member, Seventh US National Congress on Computational Mechanics, Albuquerque, New Mexico, July 27-31 (2003)
- Local Organizing and Scientific Committee Member, Multiscale Computational Mechanics for Material and Structures, Cachan, France, September 18-20 (2002)
- Scientific Program Committee Member, International Parallel and Distributed Processing Symposium, Ft. Lauderdale, Florida, April 15-19 (2002)
- Scientific Program Committee Member, Sixth US National Congress on Computational Mechanics, Dearborn, Michigan, August 1-4 (2001)
- Scientific Committee Member, Fourth International Colloquium on Computation of Shell and Spatial Structures, Crete, Greece, June 5-7 (2000)

- Organizing Committee Member, Fifth US National Congress on Computational Mechanics, Boulder, Colorado, August 4-6 (1999)
- Program Committee Member, HPC'ASIA 98 Conference and Exhibition, Singapore, September 22-25 (1998)
- Program Committee Member, Fifth International Symposium on Solving Irregularly Structured Problems in Parallel, Berkeley, California, August 9-11 (1998)
- International Advisory Board Member, Sixth International Conference on Numerical Grid Generation and Computational Field Simulation, Greenwich, The United Kingdom, July 6-9 (1998)
- Chairman, Tenth International Conference on Domain Decomposition Methods in Sciences and Engineering, Boulder, Colorado, August 11-14 (1997)
- International Advisory Committee Member for the Fourth U.S. National Congress on Computational Mechanics, San Francisco, California, August 6-8 (1997)
- Program Committee Member, Frontiers' 96, The Sixth Symposium on the Frontiers of Massively Parallel Computation, Annapolis, Maryland, October 27-31 (1996)
- Organizing Committee Member, The 1995 Engineering Mechanics Conference, Boulder, Colorado, May 22-24 (1995)
- Program Committee Member, Frontiers' 95, The Fifth Symposium on the Frontiers of Massively Parallel Computation, McLean, Virginia, February 6-9 (1995)
- Program Committee Member, Eighth ACM International Conference on Supercomputing, Manchester, July 11-15 (1994)
- Host and organizer of the biennial NSF Communications and Computational Systems Grantees Meeting, Boulder, Colorado, May 16-18 (1994)
- Editorial Board, The Second International Conference on Computational Structures Technology, Athens, Greece, August 30-September 1 (1994)
- Member, International Scientific Advisory Committee, First International Conference on Parallel Processing for Computational Mechanics, Southampton, The United Kingdom, September 4-6 (1990)
- Member, Technical Committee, First U.S. Conference on Discrete Element Methods, Golden, Colorado, October 17-18 (1989)
- Theme Chairman, Fourth Copper Mountain Conference on Multigrid Methods, Copper Mountain, Colorado, April 9-13 (1989)

PLENARY LECTURES

- First International Conference CEACM S4ML-Synergy of Multiphysics/Multiscale and Machine Learning (Distinguished Plenary Lecture), CTU Prague, Czech Republic, June 19-21 (2024)

- Vers la Simulation Haute-Fidélité Aero-Structurale Difficultés Théoriques et Solutions Pratiques, ONERA, Châtillon, France, November 30 (2023)
- Sixth International Workshop on Model Reduction Techniques (MORTech 2023), École Normale Supérieure Paris-Saclay, France, November 22-24 (2023)
- BUILD-IT 2023: BUILding a DIgital Twin: Requirements, Methods, and Applications, Consiglio Nazionale delle Ricerche, Rome, Italy, October 19-20 (2023)
- Seventeenth U.S. National Congress on Computational Mechanics, Albuquerque, New Mexico, July 23-27 (2023)
- Math 2 Product: Emerging Technologies in Computational Science for Industry, Sustainability and Innovation (M2P), Taormina, Sicily, Italy, May 30-June 1 (2023)
- Twenty-Second IACM Computational Fluids Conference (CFC 2023), Cannes, France, April 25-28 (2023)
- DesCartes School 2022, CNRS@CREATE, Singapore, October 10-14 (2022)
- Essentially Hyperbolic Problems: Unconventional Numerics, and Applications, Monte Verita, Switzerland, October 9-14 (2022)
- Meshfree and Novel Finite Elements with Applications (MFEM2022), Berkeley, California, September 25-27 (2022)
- Fifteenth World Congress on Computational Mechanics and Eighth Asian Pacific Congress on Computational Mechanics (WCCM-APCOM 2022, Virtual), Yokohama, Japan, July 31-August 5 (2022)
- Engineering Mechanics Institute Conference 2022 (EMI 2022), Baltimore, Maryland, May 31-June 3 (2022)
- Journée d'inauguration Année de la Mécanique (Virtual), Paris, France, October 14 (2021)
- Computational Mathematics for Hypersonics Workshop (Virtual), April 26-27 (2021)
- Virtual Computational Data Science Workshop (Virtual), ERDC, August 25-26 (2020)
- Closing Ceremony, Joint Fourteenth World Congress on Computational Mechanics (WCCM 2020) and ECCOMAS Congress (Virtual), Paris, France, July 19-24 (2020)
- International Mechanical Engineering Congress & Exposition (IMECE 2019), Salt Lake City, Utah, November 8-14 (2019)
- Fourth International Conference on Multi-Scale Computational Methods for Solids and Fluids, Sarajevo, Bosnia and Herzegovina, September 16-20 (2019)
- Data Science Day, MINES ParisTech, Paris, France, September 18 (2019)
- EMI International Conference, Lyon, France, July 3-5 (2019)
- Seventh International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2019) and Third International Conference

on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP 2019), Island of Crete, Greece, June 24-26 (2019)

- Physics Informed Machine Learning Workshop, University of Washington, Seattle, Washington, June 6-7 (2019)
- Eighth International Conference on Coupled Problems in Science and Engineering (COUPLED 2019), Sitges, Spain, June 3-5 (2019)
- Twelveth MIT Enterprise Forum Arab Startup Competition, Beirut, Lebanon, March 28-29 (2019)
- Workshop of Meshfree Method and Advances in Computational Mechanics, A Special Event in Celebration of Professor Jiun-Shyan (J.S.) Chen's 60th Birthday, Pleasanton, California, March 10-12 (2019)
- Thirteenth World Congress on Computational Mechanics (WCCM 2018), New York City, New York, July 22-27 (2018)
- Sixth European Conference on Computational Mechanics (ECCM 6) and Seventh European Conference on Computational Fluid Dynamics (ECFD 7), Glasgow, UK, June 11-15 (2018)
- Twenty-Second Conference on Computational Engineering and Science, Omiya, Japan, May 31-June 2 (2017)
- NUMHYP17: Numerical Methods for Hyperbolic Problems, Monte Verita, Switzerland, May 28-June 2 (2017)
- Marine 2017, Computational Methods in Marine Engineering, Nantes, France, May 15-17 (2017)
- Twenty-Fourth International Congress of Theoretical and Applied Mechanics, Palais des Congrès, Montréal, Canada, August 21-26 (2016)
- Seventh International Conference on Computational Methods (ICCM2016), University of California at Berkeley, Berkeley, California, August 1-August 4 (2016)
- Seventh European Congress on Computational Methods in Applied Sciences and Engineering, Crete, Greece, June 5-10 (2016)
- New Challenges in Computational Mechanics, A Conference Celebrating the 70th Birthday of Pierre Ladevèze, Cachan, France, May 23-25 (2016)
- Supercomputing 2015 (SC15), Austin, Texas, November 16-19 (2015)
- Fifth International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (COMPDYN 2015), Island of Crete, Greece, May 25-27 (2015)
- Sixth International Conference on Computational Methods for Coupled Problems in Science and Engineering, San Servolo Island, Venice, Italy, May 18-20 (2015)

- PANACM 2015, First Pan-American Congress on Computational Mechanics, Buenos Aires, Argentina, April 27-29 (2015)
- Fourth African Conference on Computational Mechanics (AfriComp'15), Marrakech, Morocco, January 7-9 (2015)
- Prospects in Applied Mathematics, University of Chicago, Chicago, October 12-20 (2014)
- The Aachen Conference on Computational Engineering Science, RWTH Aachen, Germany, September 9-11 (2013)
- Forum TERATEC 2013, Ecole Polytechnique, Palaiseau, France, June 25-26 (2013)
- Fifth International Conference on Coupled Problems in Science and Engineering, Ibiza, Spain, June 17-19 (2013)
- Advances in Computational Mechanics, A Conference Celebrating the 70th Birthday of Thomas J.R. Hughes, With Special Track 17th International Conference on Finite Elements in Flow Problems, San Diego, California, February 24-28 (2013)
- Tenth World Congress on Computational Mechanics (WCCM 2012), Sao Paulo, Brazil, July 8-13 (2012)
- Parallel CFD 2012, Twenty-Fourth International Conference on Parallel Computational Fluid Dynamics, Atlanta, May 21-25 (2012)
- Riemann International School of Mathematics (RISM): Multiphase and Multiphysics Problems, Verbania, Italy, September 25-30 (2011)
- Multiphysics Simulations: Challenges and Opportunities, Institute of Computing in Science (ICiS), Park City, Utah, July 30-August 6 (2011)
- Fifteenth International Forum on Aeroelasticity and Structural Dynamics, Paris, France, June 26-30 (2011)
- International Conference on Advanced Research and Applications in Mechanical Engineering (ICARAME'11), Beirut, Lebanon, June 13-15 (2011)
- Computational Challenges in Partial Differential Equations, Isaac Newton Institute (INI) and Wales Institute for Mathematical and Computational Sciences (WIMCS), Swansea University, Wales, United Kingdom, April 4-9 (2011)
- 20th International Domain Decomposition Conference, San Diego, California, February 7-11 (2011)
- 16th US National Congress of Theoretical and Applied Mechanics, State College, Pennsylvania, June 27-July 2 (2010)
- Fourth European Conference on Computational Mechanics (ECCOMAS), Solids, Structures and Coupled Problems in Engineering, Paris, France, May 16-21 (2010)
- Second International Workshop on Advances in Computational Mechanics (IWACOM-II), Yokohama, Japan, March 29-31 (2010)

- XXX CILAMCE (Iberian Latin-American Conference on Computational Methods in Engineering), Armacao de Buzios, RJ, Brazil, November 8-11 (2009)
- Twelfth Engineering Mechanics Symposium, De Werelt, Lunteren, The Netherlands, October 29-30 (2009)
- Tenth US National Congress on Computational Mechanics, Columbus, Ohio, July 16-19 (2009)
- Marine 2009, Computational Methods in Marine Engineering, Trondheim, Norway, June 15-17 (2009)
- Computational Mechanics: The Next Decade, George Mason University, Washington DC, March 27 (2009)
- First African Conference on Computational Mechanics (AfriComp'09), Sun City, South Africa, January 7-11 (2009)
- Eighth World Congress on Computational Mechanics (WCCM VIII), Venice, Italy, June 30-July 5 (2008)
- Advanced Computational Methods in Engineering (ACOMEN) 2008, Liege, Belgium, May 26-28 (2008)
- Fourteenth International Conference on Finite Elements in Flow Problems, Santa Fe, New Mexico, March 26-28 (2007)
- Seventh World Congress on Computational Mechanics, Los Angeles, California, July 16-22 (2006)
- Challenges in Computational Mechanics, Cachan, France, May 10-12 (2006)
- Septième Colloque de l'Association Calcul de Structures et Modélisations (CSMA), Giens, France, May 17-20 (2005)
- Iberian Congress of Computational Methods in Engineering, Lisbon, Portugal, May 31-June 2 (2004)
- The 2004 SIAM Conference on Parallel Processing for Scientific Computing, San Francisco, California, February 25-27 (2004)
- Third Conference on Numerical Methods in Engineering and Applied Sciences in Latin America, Monterrey, Mexico, January 22-24 (2004)
- CANUM 2000 (32ème Congrès National d'Analyse Numérique), Port d'Albret, France, June 5-9 (2000)
- Fifteenth International Conference on Structural Mechanics in Reactor Technology (SMiRT-15), Seoul, Korea, August 15-20 (1999)
- Fourth European Computational Fluid Dynamics Conference (ECCOMAS), Athens, Greece, September 7-11 (1998)

- Fourth US National Congress on Computational Mechanics, San Francisco, California, August 6-8 (1997)
- 1997 NSF Design and Manufacturing Grantees Conference, Seattle, Washington, January 7-10 (1997)
- IBM STAR Forum, Strategies for Today and Tomorrow, IBM Research Division Headquarters, Yorktown, New York, October 25-27 (1995)
- von Kármán Institute Lecture Series, Belgium, May 15-19 (1995)
- Fifth SIAM Conference on Parallel Processing for Scientific Computing, Houston, Texas, March 25-27 (1991)
- IBM Europe Institute 1988, Supercomputing in Engineering Structures, Oberlech, Austria, July 11-15 (1988)

KEYNOTE AND INVITED DISTINGUISHED LECTURES

- Sixteenth World Congress on Computational Mechanics and Fourth Pan American Congress on Computational Mechanics (WCCM 2024), Vancouver, Canada, July 21-26 (2024)
- ANSYS Tech Talk, Digital What?, November 16 (2023)
- Fourteenth International Workshop on Structural Health Monitoring, Stanford, California, September 12-14 (2023)
- AeroBest 2023, II ECCOMAS Thematic Conference on Multidisciplinary Design Optimization of Aerospace Systems, Lisbon, Portugal, July 19-21 (2023)
- Twenty-Second IACM Computational Fluids Conference (CFC 2023), Cannes, France, April 25-28 (2023)
- American Corners Lecture, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal, December 20 (2022)
- Accurate ROMs for Industrial Applications at Virginia Tech (ARIA@VT), Virginia Tech, Blacksburg, Virginia, July 6-8 (2022)
- The Distinguished Dynamics Colloquium, ETH Zurich, Zurich, Switzerland, June 28 (2022)
- The Platform for Advanced Scientific Computing 2022 (PASC22) Conference (Association for Computing Machinery), Basel, Switzerland, June 27-29 (2022)
- Applied Mathematics for Engineering Sciences (AMES-2022), La Rochelle, France, June 23-34 (2022)
- Reduced-Order Models at Work: Industry and Medicine, INRIA Bordeaux Sud-Ouest, Bordeaux, France, March 30-April 1 (2022)

- Active Manifold and Model Order Reduction for PDE-Constrained Optimization in High-Dimensional Parameter Spaces, ONERA, Toulouse, France, March 25 (2022)
- Multi-physics Design Analysis and Optimization (MDAO): What? Why? and How?, Mines ParisTech, Paris, France, March 24 (2022)
- Journal of Computational Physics Seminar Series (Virtual), November 29 (2021)
- Mechanical Engineering and Applied Mechanics (MEAM), Penn Engineering, University of Pennsylvania, Philadelphia, Pennsylvania, October 19 (2021)
- ASME 2021 Fluids Engineering Division Summer Meeeting (Virtual), August 10-12 (2021)
- Sixteenth US National Congress on Computational Mechanics (Virtual), Chicago, Illinois, July 25-29 (2021)
- Machine Learning Methods for Prediction and Control of Separated Turbulent Flows (Virtual), Paris, France, June 16-18 (2021)
- 2021 New Research Areas in Hypersonics Workshop (Virtual), April 29-30 & May 13 (2021)
- CEEM Seminar Series (Virtual), Civil Engineering and Engineering Mechanics, Columbia Engineering, New York, New York, March 5 (2021)
- MOX COLLOQUIA Series (Virtual), Politecnico di Milano, Milano, Italy, March 4 (2021)
- Algorithms for Dimension and Complexity Reduction (Virtual), The Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, Rhode Island, March 23-27 (2020)
- Fifth International Workshop on Reduced Basis, POD and PGD Model Reduction Techniques, Paris, France, November 20-22 (2019)
- Fifteenth US National Congress on Computational Mechanics, Austin, Texas, July 28-August 1 (2019)
- Industry HPC Leaders Group's iHPCug 2019, Chicago, Illinois, May 21-23 (2019)
- Public Lecture on Real-Time Data-Driven Probabilistic Learning for Digital Twins, The Munib and Angela Masri Institute of Energy and Natural Resources, American University of Beirut, Beirut, Lebanon, March 27 (2019)
- Second International Workshop on Data-Based Engineering, Science and Technology (Data-Best 2019), ENSAM ParisTech, Paris, France, March 20-22 (2019)
- 2018-19 Series of the DoD Basic Research Forum, Office of the Secretary of Defense, Washington, DC, February 7 (2019)
- USACM Workshop on Uncertainty Quantification in Computational Solid and Structural Materials Modeling, Johns Hopkins University, Baltimore, Maryland, January 17-18 (2019)

- AIAA SciTech 2019, Grand Challenges in Aerospace Research, San Diego, California, January 7-11 (2019)
- Advances in Numerical Methods for Simulation, Optimization, and Uncertainty Quantification of Coupled Physics Problems, The University of Colorado at Boulder, Colorado, April 23-24 (2018)
- West Coast ROM Workshop, Lawrence Berkeley National Laboratory, Berkeley, California, November 17 (2017)
- Fourth International Workshop on Reduced Basis, POD and PGD Model Reduction Techniques, Seville, Spain, November 8-10 (2017)
- Distinguished Seminar Series in Computational Sciences, Maison du Savoir, Université du Luxembourg, Luxemburg, October 24 (2017)
- Workshop on Model Reduction and Big Data in Mechanics, Ecole Normale Supérieure Paris-Saclay, Cachan, France, October 5 (2017)
- Fourteenth US National Congress on Computational Mechanics, Montreal, Canada, July 17-20 (2017)
- VII International Conference on Computational Methods for Coupled Problems in Science and Engineering, Rhodes Island, Greece, June 12-14 (2017)
- AIAA Aerodynamic Decelerator Systems (ADS) Biennial Meeting on How Do We Get There From Here - A Discussion on the Future Development of Parachute Modeling and Simulation Tools, Aviation Forum, Denver, Colorado, June 5-9 (2017)
- Data-Driven Methods for Reduced-Order Modeling and Stochastic Partial Differential Equations, The Banff International Research Station, Calgary, Canada, January 29-February 3 (2017)
- The Ted Belytschko Lecture, McCormick School of Engineering, Northwestern University, Evanston, Illinois, November 7 (2016)
- Chairs Distinguished Seminar Series, William E Boeing Department of Aeronautics and Astronautics, University of Washington, Seattle, Washington, October 10 (2016)
- 2016 InfoSymbiotics/DDDAS Conference, Hartford, Connecticut, August 9-12 (2016)
- Nineth Annual French-US Symposium, International Center for Applied Computational Mechanics (ICACM) 2016, Compiègne, France, June 1-3 (2016)
- 2016 CSE Annual Meeting and Fellows Symposium, University of Illinois at Urbana-Champaign, April 12 (2016)
- West Coast ROM Workshop, Sandia National Laboratories, Livermore, California, November 19 (2015)
- Third International Workshop on Reduced Basis, POD and PGD Model Reduction Techniques, Ecole Normale Superieure de Cachan, France, November 4-6 (2015)

- The Liviu Librescu Memorial Lecture, Department of Biomedical Engineering & Mechanics (BEAM), Virginia Tech, Blacksburg, Virginia, October 7 (2015)
- The 2015 Den Hartog Lecture, Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts, April 10 (2015)
- Inaugural Lecture for SAFRAN's Centre de Recherche et Technologie (CRT), SAFRAN, Plateau de Scalay, Magny-les-Hameaux, France, December 18 (2014)
- Inaugural Lecture of the Distinguished Lecture Series of Computational Science, University of Zurich and ETH Zurich, Zurich, Switzerland, November 12-13 (2014)
- Boeing Distinguished Colloquium, Department of Applied Mathematics, University of Washington, Seattle, October 29-30 (2014)
- Eleventh World Congress on Computational Mechanics (WCCM 2014), Barcelona, Spain, July 20-25 (2014)
- Second International Workshop on Reduced Basis, POD and PGD Model Reduction Techniques, Blois Castle, France, November 3-6 (2013)
- Workshop on Model Reduction and Approximation for Complex Systems, Centre International de Rencontres Mathématiques, Marseille, France, June 10-14 (2013)
- Finite Element Methods in Engineering and Sciences (FEMTEC 2013), Las Vegas, Nevada, May 19-24 (2013)
- Second International Workshop on Model Reduction for Parametrized Systems (MoRePaS II), Schloss Reisensburg, Gunzburg, Germany, October 2-5 (2012)
- Sixth European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS), Vienna, Austria, September 10-14 (2012)
- Distinguished Lecture Series in Structural Engineering and Mechanics, University of California at Los Angeles, Los Angeles, California, May 29 (2012)
- Reduced Basis, POD and Reduced Order Methods for Model and Computational Reduction: Towards Real-Time Computing and Visualization?, Lausanne, Switzerland, May 14-16 (2012)
- Workshop on Nonlinear Model Order Reduction, Schloss Ringberg Tegernsee, Germany, May 6-9 (2012)
- Computer Science Research Institute (CSRI) Distinguished Lecture, Sandia National Laboratories, Albuquerque, February 22 (2012)
- Reduced Basis, POD and PGD Model Reduction Techniques: A Breakthrough in Computational Engineering?, Cachan, France, November 16-18 (2011)
- GDR Interaction Fluid Structure (IFS) 2902 Workshop, MINES ParisTech Sophia Antipolis, France, November 8-9 (2011)
- Aerospace Engineering Distinguished Lecture, Georgia Institute of Technology, Atlanta, Georgia, October 27 (2011)

- Fourty Eighth Annual Technical Conference of Society of Engineering Sciences, Prager Medal Symposium in Honor of Professor Ted Belytschko, Northwestern University, Evanston, Illinois, October 12-14 (2011)
- ASME 2011 International Design Engineering Technical Conference & Computers and Information in Engineering Conference, Washington, DC, August 28-31 (2011)
- Eleventh US National Congress on Computational Mechanics, Minneapolis, Minnesota, July 25-29 (2011)
- Twentieth International Conference on Domain Decomposition Methods, La Jolla, California, February 7-11 (2011)
- Toyota Central Research and Development Laboratories, Inc., Nagakute, Aichi, Japan, October 20 (2010)
- Deans Distinguished Lecture Series, King Abdullah University of Science and Technology, Saudi Arabia, October 6 (2010)
- International Space, Satellite, and Aeronautics Technology Conference, King Abdulaziz City for Science and Technology, Riyadh, Saudi Arabia, October 2-3 (2010)
- MUSAF Colloquium: Multiphysics and Unsteady Simulations for Aeronautical Flows, Toulouse, France, September 27-29 (2010)
- Nineth World Congress on Computational Mechanics (WCCM IX), Sydney, Australia, July 19-23 (2010)
- VECPAR'10: 9th International Meeting on High Performance Computing for Computational Science, Berkeley, California, June 22-25 (2010)
- Adaptive Finite Elements and Domain Decomposition Methods, Milan, Italy, June 17-19 (2010)
- Naval Engineering in the 21st Century, Keck Center of the National Academies, Washington DC, June 10 (2010)
- Golden Jubilee Year, Symposium on Applied Aerodynamics and Design of Aerospace Vehicles (SAROD-2009), Bangalore, India, December 10-12 (2009)
- Sixièmes Journées Scientifiques Paul Vieille: Histoire de la Modélisation et de la Simulation en Pyrotechnie, ENSTA, Paris, France, October 7-8 (2009)
- Tenth US National Congress on Computational Mechanics, Columbus, Ohio, July 16-19 (2009)
- Aircraft Structural Design: Challenges for the Next Generation – Concept to Disposal, The Foresight Centre, Liverpool, UK, October 14-16 (2008)
- Workshop Fluid-Structure-Interaction: Theory, Numerics and Applications, Munich, Germany, September 29-October 1 (2008)
- Fast Algorithms for Scientific Computing, A Symposium in Honor of Olof B. Widlund on the Occasion of his 70th Birthday, New York City, September 19-20 (2008)

- Transforming Engineering through Computational Simulation, A Computation-Based Engineering Summit, National Academy of Engineering, Washington DC, September 16-18 (2008)
- AFOSR Workshop on Aeroelastic, Unsteady Aerodynamics and Fluid-Structure Interaction, Washington, DC, February 11-12 (2008)
- KD Wood Colloquium, Boulder, Colorado, January 25 (2008)
- 2008 AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, January 7-10 (2008)
- Thirty-Second Conference of the Dutch-Flemish Numerical Analysis Communities, Woudschoten, Zeist, The Netherlands, October 3-5 (2007)
- Invited Lecture, Collaborative Research Center on "Flow Modulation and Fluid-Structure Interaction at Airplane Wings," RWTH Aachen University, Aachen, Germany, September 14 (2007)
- Ninth US National Congress on Computational Mechanics, San Francisco, California, July 22-26 (2007)
- Second International Conference on Computational Methods for Coupled Problems in Science and Engineering, Ibiza, Spain, May 21-23 (2007)
- International Workshop on Higher-Order Finite Element Methods, Herrsching am Ammersee, Germany, May 17-19 (2007)
- XV Congreso Sobre Métodos Numéricos y sus Aplicaciones (ENIEF 2006), Santa Fe, Argentina, November 7-10 (2006)
- Tenth Annual ASME PVP Meeting, Vancouver, Canada, July 25-28 (2006)
- Seventh World Congress on Computational Mechanics, Los Angeles, California, July 16-22 (2006)
- Fourth International Symposium on Computational Wind Engineering (CWE2006), Yokohama, Japan, July 16-19 (2006)
- Interdisciplinary Multiscale Computational Methodologies, Research Triangle Park, North Carolina, June 14-15 (2006)
- International Meeting on Grid and Parallel Computing, Beirut, Lebanon, January 4-7 (2006)
- First International Seminar on Innovative Scientific Computing for Challenging Multidisciplinary Applications: Methods, Tools and Collaborative Environments, Jyvaskyla, Finland, October 3-5 (2005)
- Eighth US National Conference on Computational Mechanics, Austin, Texas, August 24-28 (2005)
- Third IMACS Conference on Mathematical Modelling and Computational Methods, Pilsen, Czech Republic, July 4-8 (2005)

- Thirteenth Conference on Finite Elements for Flow Problems (FEF05), Swansea, United Kingdom, April 4-6 (2005)
- Sixth World Congress on Computational Mechanics (WCCM VI), Beijing, China, September 5-10 (2004)
- Fourth European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS), Jyvaskyla, Finland, July 24-28 (2004)
- IMET 2004, Iterative Methods, Preconditioning and Numerical PDEs, Prague, Czech Republic, May 25-28 (2004)
- Second Sandia Workshop on PDE-Constrained Optimization: Toward Real-time and Online PDE-constrained Optimization, Santa Fe, New Mexico, May 19-21 (2004)
- Advances in Computational Mechanics, A Conference Celebrating the 60th Birthday of Thomas J. R. Hughes, Houston, Texas, April 7-9 (2004)
- Seventh US National Congress on Computational Mechanics, Albuquerque, New Mexico, July 27-31 (2003)
- Fifteenth International Conference on Domain Decomposition Methods, Berlin, Germany, July 21-25 (2003)
- IMAMM'03, Industrial Mathematics and Mathematical Modeling, Roznov, Czech Republic, June 30-July 4 (2003)
- EuroConference on Problem Solving Environments and the Information Society, Albufeira, Portugal, June 14-19 (2003)
- 50th AGM and Conference of the Canadian Aeronautics and Space Institute, Montréal, Canada, April 28-30 (2003)
- First South-American Congress on Computational Mechanics, Parana, Argentina, October 28-31 (2002)
- Multi-scale Computational Mechanics for Materials and Structures, Cachan, France, September 18-20 (2002)
- International Workshop on Modeling and Simulation of Fluid/Structure/Acoustic Interaction, University of Stuttgart, Germany, September 9-11 (2002)
- PET Workshop on Fluid-Structure Interactions, Mississippi State University, Mississippi, July 30-11 (2002)
- Fifth World Congress on Computational Mechanics (WCCM V), Austria, July 7-12 (2002)
- 2002 PET Frontier Lecture Series, High Performance Technologies, Inc., Aberdeen, Maryland, March 11-12 (2002)
- Iterative Solvers for Large Linear Systems, A Conference Commemorating 50 Years of Conjugate Gradients, ETH Zurich, Switzerland, February 18-21 (2002)

- 40th Aerospace Sciences Meeting and Exhibit (AIAA), Reno, Nevada, January 14-17 (2002)
- 2nd European Conference on Computational Mechanics (ECCM), Solids, Structures, and Coupled Problems in Engineering, Cracow, Poland, June 26-29 (2001)
- Workshop on Domain Decomposition Methods, ETH Zurich, Switzerland, June 7-8 (2001)
- ParCFD2001 (Parallel Computational Fluid Dynamics), Egmond aan Zee, The Netherlands, May 21-23 (2001)
- Second AMIF (Applied Mathematics for Industrial Flows) International Conference, Il Ciocco, Tuscany, Italy, October 12-14 (2000)
- XX CILAMCE (Iberian Latin-American Conference on Computational Methods in Engineering), Sao Paulo, Brasil, November 3-5 (1999)
- Computational Modeling and Applications, LNCC, Petropolis, Rio de Janeiro, Brazil, July 12-15 (1999)
- International Conference on Preconditioning Techniques for Large Sparse Matrix Problems in Industrial Applications, Minneapolis, Minnesota, June 10-12 (1999)
- Fourth Mississippi State Conference on Differential Equations and Computational Simulations, Starkville, Mississippi, May 21-22 (1999)
- ICTCA'99, Fourth International Conference on Theoretical and Computational Acoustics, Trieste, Italy, May 10-14 (1999)
- International Symposium on Computational Methods for Fluid-Structure Interaction, Trondheim, Norway, February 15-17 (1999)
- Workshop on Recent Advances in Computational Structural Dynamics and High Performance Computing, USAE Waterways Experiment Station, Vicksburg, MS, November 3-4 (1998)
- MAPINT'98/MDICE, Wright Patterson Air Force Base, Dayton, Ohio, August 25-27 (1998)
- ICASE/LaRC Aero-Structure Workshop, Hampton, Virginia, August 3-4 (1998)
- Eleventh International Conference on Domain Decomposition Methods, London, The United Kingdom, July 20-24 (1998)
- Fourth World Congress on Computational Mechanics, Buenos Aires, Argentina, June 29-July 2 (1998)
- 29th AIAA Fluid Dynamics Meeting, Albuquerque, NM, June 15-18 (1998)
- Workshop on Domain Decomposition and Multifields in Fluid and Solid Mechanics, Sollerhaus, Austria, April 26-May 2 (1998)

- A Conference on Numerical Analysis and Domain Decomposition in honor of Olof B. Widlund on the Occasion of his 60th Birthday, Courant Institute of Mathematical Sciences, New York, January 23-24 (1998)
- XVIII CILAMCE (Iberian Latin-American Conference on Computational Methods in Engineering), Brasilia, Brazil, October 29-31 (1997)
- Numerical Unsteady Aerodynamic and Aeroelastic Simulation, 85th Meeting of the Structures and Materials Panel, AGARD-NATO, RTO, Aalborg, Denmark, October 14-15 (1997)
- Computational Aerodynamics - Past, Present and Future, The Boeing Company, Seattle, September 26-27 (1997)
- MAPINT'97 (Multi-disciplinary Applications and Interoperable Computing), Science and Engineering, Wright Patterson Air Force Base, Dayton, Ohio, June 16-18 (1997)
- Ninth International Conference on Domain Decomposition Methods in Science and Engineering, Bergen, Norway, June 3-8 (1996)
- Seventh International ANSYS Conference and Exhibition, Pittsburgh, Pennsylvania, May 20-22 (1996)
- Workshop on Recent Advances in Computational Structural Dynamics and High Performance Computing, USAE Waterways Experiment Station, Vicksburg, MS, April 24-26 (1996)
- Couplage Fluide-Structure, Ecole Polytechnique de Tunis, La Marsa, Tunisia, March 27-29 (1996)
- Séminaire sur les Architectures Logicielles, Ecole Nationale Supérieure d'Informatique et d'Analyse de Systèmes, Rabat, Morocco, March 6-9 (1996)
- SUP'EUR 95, High Performance Computing in Europe, Madrid, Spain, September 25-27 (1995)
- ENUMATH 95, The First European Conference on Numerical Mathematics and Advanced Applications, Paris, France, September 18-22 (1995)
- Colloque sur les Modélisations et Méthodes Numériques en Ingéniérie Pétrolière, Ecole Polytechnique Tunis, La Marsa, Tunisia, September 20-21 (1995)
- Calcul à Hautes Frequences et Parallelisme en Electromagnetisme, Institut Galilee, Universite Paris XIII, Paris, France, May 22-23 (1995)
- Scientific Computing 95, Baptist University, Hong-Kong, May 12-13 (1995)
- Parallelisme en Mecanique des Solides et des Structures, Paris, France, December 6 (1994)
- IV Argentine Congress of Computational Mechanics (MECOM'94), Mar del Plata, Argentina, November 8-11 (1994)

- Les Premieres Journees Maghrebines de Mathematiques Appliquees, Bizerte, Tunisia, November 1-5 (1994)
- Second European Computational Fluid Dynamics Conference (ECCOMAS), Stuttgart, Germany, September 5-8 (1994)
- Sixth International Conference on Physics Computing, Lugano, Switzerland, August 22-26 (1994)
- Sixth International Congress on Computational and Applied Mathematics (ICCAM 94), Leuven, Belgium, July 25-30 (1994)
- The Eurosim 1994 International Conference on Massively Parallel Processing, Delft, The Netherlands, June 21-23 (1994)
- Workshop on Domain-Based Parallelism and Problem Decomposition Methods in Computational Science and Engineering, Minneapolis, Minnesota, April 25-26 (1994)
- Second Japan-US Symposium on Finite Element Methods for Fluid Dynamics, Tokyo, Japan, March 14-16 (1994)
- Symposium on Parallel Finite Element Computations, Minnesota Supercomputer Institute, Minneapolis, October 25-27 (1993)
- NATO Advanced Study Institute on Computer Aided Analysis of Rigid and Flexible Mechanical Systems, Troia, Portugal, June 27-July 9 (1993)
- PARALLEL CFD'93, Paris, France, May 10-12 (1993)
- BEnchmark of Concurrent Architectures for their Use in Scientific Engineering (BECAUSE) European Workshop, Sophia-Antipolis, France, October 13-16 (1992)
- Sixth International Conference on Domain Decomposition Methods in Science and Engineering, Como, Italy, June 15-19 (1992)
- Fifth Copper Mountain Conference on Iterative Methods, Copper Mountain, Colorado, April 9-14 (1992)
- Numerical Methods for Parallel Computers, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, February 9-15 (1992)
- Tenth International Conference on Computing Methods in Applied Sciences and Engineering, Paris, France, February 11-14 (1992)
- First GAMNI/CSM Workshop on Large Flexible Space Structures, Paris, France, December 16-17 (1991)
- 1991 International Conference on Supercomputing, Cologne, Germany, June 17-21 (1991)
- Meeting on Domain Decomposition and Parallel Computing for Partial Differential Equations, ICASE, NASA LaRC, September 24-25 (1990)

- First International Conference on Parallel Processing For Computational Mechanics, Southampton, The United Kingdom, September 4-6 (1990)
- Fourth Copper Mountain Conference on Iterative Methods, Copper Mountain, Colorado, April 1-5 (1990)
- SINTEF/RUNIT University of Trondheim, Series of Lectures on Parallel Numerical Algorithms for Computational Mechanics, Trondheim, Norway, March 26-30 (1989)
- Fourth International Symposium on Science and Engineering on CRAY Supercomputers, Minneapolis, Minnesota, October 12-14 (1988)
- Forum on Advanced Computing, Denver, Colorado, April, 23-24 (1987)

CONTRACTS AND GRANTS (Funded)

Principal Investigator

- HPROM-Based Integrated Flight and Aeroelastic Control Technology (IFACT) for Carrier Landing, Office of Naval Research, $1,638,101 (2023-2026)
- A Robust Multi-Physics Design Analysis and Optimization Framework for Hypersonic Systems Grounded in Rigorous Model Reduction, Air Force Office of Scientific Research $7,500,000 (2021-2026)
- Numerical Simulation of Hypervelocity Impact Induced Phenomena, Office of Naval Research, $200,000 (2021-2023)
- Smooth Embedded Boundary Methods for CFD, CFD-Based Aeroelasticity, and MDAO, and Plug-In Implementation, The Boeing Company, $464,249 (2021-2023)
- Multiscale Stochastic Modeling, Conditioning, and Simulation of Rare Events, Air Force Office of Scientific Research $546,170 (2021-2023)
- Advancing the State of the Art in the Simulation of Parachute Inflation and Descent Dynamics: Multiscale Modeling, Performance Acceleration, and Validation, NASA Early Stage Innovations, $650,000 (2021-2023)
- Learning and Meta-Learning of Partial Differential Equations via Physics-Informed Neural Networks: Theory, Algorithms, and Applications, Air Force Office of Scientific Research $1,200,000 (2021-2025)
- Verification and Validation of High-Fidelity Supersonic Parachute Deployment Modeling, Jet Propulsion Laboratory (JPL), $150,000 (2020-2023)
- Embedded Boundary Methods with Stability, Accuracy, and Smoothness Guarantees for Multidisciplinary Design, Analysis and Optimization, Air Force Office of Scientific Research $732,443 (2020-2023)
- Advancing Computational Methods for Supersonic Retropropulsion, NASA, $240,000 (2020-2023)

- Planning for the Leadership-Class Computing Facility, National Science Foundation, $143,144 (2019-2020)
- Planning Grant: Engineering Research Center for Digital Twins in Engineering and Medicine, National Science Foundation, $100,000 (2019-2020)
- Probabilistic Updating of Nonlinear Structural Dynamics Models to Improve Model Reliability, Support Better Decisions Making, and Reduce Hardware Testing, Ford Motor Company, $404,977.00 (2019-2020)
- Passive Non-Linear and Non-Holonomic Mechanical System Analysis, The Boeing Company, $75,000 (2018)
- Model Order Reduction for Multidisciplinary Analysis, The Boeing Company, $700,000 (2018-2020)
- High-Performance and Reliable Automated Carrier Landing via CFD-Based Model Predictive Control, Office of Naval Research, $862,278 (2017-2020)
- Dimensional Reduction of Highly Nonlinear Multiscale Models Using Most Appropriate Local Reduced-Order Bases, Air Force Office of Scientific Research, $704,128 (2017-2020)
- An Innovative High Fidelity Multidisciplinary Computational Framework for Parachute Inflation Dynamics, NASA Early Stage Innovations, $628,712 (2017-2020)
- A Numerical Simulator for Supersonic Inflatable Aerodynamic Decelerators, Jet Propulsion Laboratory (JPL), $1,170,000 (2016-2019)
- Miniaturized Distributed Autonomous Space System for Future Science and Exploration, King Abdulaziz City for Science and Technology (KACST), $14,860,764 (2015-2023)
- Design by Multidisciplinary Analysis and Optimization of Complex Aeronautical Systems Using Reduced-Order Models, The Boeing Company, $700,000 (2014-2017)
- Reduced-Order Model Based Computational Technologies for the Fast Acoustic and Vibroacoustic Analysis and Design by Optimization of Underwater Systems, Office of Naval Research, $722,579 (2014-2016)
- The KACST Center of Research Excellence in Aeronautics and Astronautics, A Multidisciplinary Research and Education Program, King Abdulaziz City for Science and Technology (KACST), $17,495,388 (2014-2020)
- Army High Performance Computing Research Center (Supplement), US Army Research Laboratory, $1,343,075 (2018)
- Army High Performance Computing Research Center, US Army Research Laboratory, $26,790,000 (2012-2017)
- Toward a Virtual Flight Test Capability, Systems Technology Incorporated, $40,950 (2012)

- Model Reduction for Simulation-Based Multidisciplinary Design Optimization, Office of Naval Research, $1,283,865.00 (2011-2014)
- Modeling and Simulation for Improving The Reliability of Towed Line Arrays, Office of Naval Research, $500,000 (2011-2012)
- Incorporation of Parametric Attitude and Shape Variations into a Nonlinear Model Reduction Method for Turbulent Automotive Flows, Toyota Motor Corporation, $167,000 (2011)
- High-Order Discontinuous Methods and Adaptive Interpolatory Reduced-Order Models for Signature Analysis in the Medium Frequency Regime, Office of Naval Research, $1,033,114 (2011-2013)
- Control-Oriented Parameterized Aeroelastic Reduced-Order Modeling of Aircraft Systems, Air Force Office of Scientific Research, $100,000 (2010-2011)
- The KACST Center of Research Excellence in Aeronautics and Astronautics - Autonomous Aircraft, A Multidisciplinary Research and Education Program, King Abdulaziz City for Science and Technology (KACST), $3,000,000 (2010-2012)
- Development of a Nonlinear Reduced Order Modeling Method for Turbulent Automotive Flows, Toyota Motor Corporation, $250,000 (2010)
- CFD-Based Nonlinear Aeroelastic Methodologies with Reduced-Order Modeling, The Boeing Company, $500,000 (2009-2012)
- Computational Mathematics for Reduced-Order Model Databases, King Abdullah University of Science and Technology, $104,597 (2008-2009)
- High-Order Discontinuous Enrichment Methods for Effective Signature Computations in the Mid-Frequency Regime, Office of Naval Research, $600,000 (2008-2011)
- A Physics-Based Predictive Computational Model for the High-Performance Analysis of Implodable Payloads, Office of Naval Research, $5,350,000.00 (2008-2013)
- Development of a Reduced-Order Method for the CFD-Based Aerodynamic Performance Analysis of a Formula One Car, Toyota Motor Corporation, $650,000 (2007-2009)
- Feasibility Study of a Unified CFD-CSD Computational Formulation, NASA Research Announcement, $150,000 (2007-2008)
- Army High Performance Computing Research Center, US Army Research Laboratory, $106,608,773 (2007-2012)
- Multidisciplinary Analysis of Hot Aerospace Structures, Air Force Office of Scientific Research, $300,000 (2007-2010)
- Unsteady CFD Analyses of a Formula One Car, Toyota Motor Corporation, $150,000 (2006-2007)

- Parameterized Aeroelastic Reduced-Order Modeling of Fighters, Air Force Office of Scientific Research, $300,000 (2006-2009)
- A Four-Field Computational Framework for the Aerothermomechanical Analysis of Hypersonic Vehicles, Air Force Office of Scientific Research, $250,000 (2006-2009)
- Physics-Based Multidisciplinary Failure Analysis of Submerged Implodable Volumes, Office of Naval Research, $5,350,000 (2006-2012)
- Multi-Disciplinary Ship Design Environment, TechnoSoft, Inc., $315,000 (2006-2008)
- Buffet and Dynamic Loads Analysis, CMSoft, Inc., $15,302 (2006)
- Implementation of FETI into FEM for CEM Simulation, High Performance Technologies, Inc., $60,000 (2006)
- Acoustic Signatures of Mines Located Near the Ocean Bottom, High Performance Technologies, Inc., $165,000 (2005-2006)
- A Dynamic Data-Driven System for Structural Health Monitoring and Critical Event Prediction, National Science Foundation, $825,000 (2005-2008)
- Aerodynamic/Aeroelastic Effects on a Class of High-Speed Vehicles, Toyota Motor Corporation, $135,000 (2005-2006)
- High-Resolution Methods for the Solution of Direct and Inverse Acoustic Scattering Problems, Office of Naval Research, $750,000 (2005-2008)
- A Scalable Solution Methodology for Speeding up the Modeling of Acoustic Signatures, High Performance Technologies, Inc., $165,000 (2004-2005)
- A Collaborative for Naval Computational Mechanics, Office of Naval Research, $1,350,000 (2004-2007)
- High Performance Computing Modernization Program - Programming Environment and Training (PET), High Performance Technologies, Inc., $600,000 (2003-2009)
- Methodologies for Predicting and Testing the Effects of Combat Damage on Flight Envelopes, Air Force Office of Scientific Research, $1,340,000 (2002-2005)
- Discovery Learning through Multidisciplinary Senior Design Projects, Lockheed-Martin Foundation, $150,000 (2002-2005)
- A Data-Driven Environment for Multiphysics Applications, National Science Foundation, $1,579,834 (2002-2005)
- Scalable Substructuring Methods for Linear and Nonlinear Dynamics Problems, Sandia National Laboratories, $1,100,000 (2002-2008)
- A Scalable Domain Decomposition Method for the Solution of Contact Problems, National Science Foundation, $41,922 (2002-2004)
- Supersonic Aircraft Shaping Technology for a Constrained Shock Pressure Rise, Nasa Langley Research Center, $150,000 (2002-2003)

- Identification of a Computational Platform for Whole Ship Modeling, Office of Naval Research, $8,000 (2002-2003)
- Evaluation of Computational Aeroelastic Technology, Lockheed-Martin Aeronautics, $20,000 (2002)
- Convergence Analysis of a Component Mode Synthesis Method, Sandia National Laboratories, $12,560 (2002)
- The Discontinuous Enrichment Method for Wave Propagation, The Binational Science Foundation, $150,000 (2001-2003)
- A Scalable Method for the Solution of Contact Problems, Sandia National Laboratories, $75,000 (2001)
- Supersonic Aircraft Shaping Technology for a Constrained Shock Pressure Rise via Structural and Materials Optimization, Defense Advanced Research Projects Agency, $356,000 (2001)
- High-Performance and Fidelity Multidisciplinary Simulation Methods for Supporting and Innovating Flight Testing, Air Force Office of Scientific Research, $1,217,000 (2000-2003)
- An Internet-Based Meta-Model Driven Distributed Workbench for MBS, National Science Foundation, $149,999 (2000-2001)
- Simulation of the Transient Aeroelastic Response of a Realistic Aircraft Configuration During Three-Dimensional High G Maneuvers, Air Force Office of Scientific Research, $548,820 (1999-2001)
- Sensitivity Analysis and Fast Solution Methods for Direct and Inverse Acoustic Scattering Problems, Office of Naval Research, $1,133,772 (1998-2004)
- Scalable Algorithms for Massive Parallel Computations, Sandia National Laboratories, $420,000 (1998-2001)
- High Performance Simulation of Multiphysics Problems in Turbulence, Control, and Structural Design, National Science Foundation, $4,229,564 (1997-2000)
- Real Time Predictive Flutter Analysis and Continuous Parameter Identification of Accelerating Aircraft, Air Force Office of Scientific Research, $1,162,672 (1997-2000)
- Numerical Simulation of Three-Dimensional High G Dynamic Maneuvers of a Complete Aircraft Configuration, Air Force Office of Scientific Research, $483,730 (1997-1998)
- Domain Decomposition Methods for Scientific and Engineering Problems, National Science Foundation, $31,990 (1997-1998)
- HPCC Methodologies for Structural Design and Analysis on Parallel and Distributed Computing Platforms, NASA Langley Research Center, $219,000 (1996-1999)

- Domain Decomposition Methods for Scientific and Engineering Problems, National Science Foundation, $38,000 (1996-1999)
- HPC Methods for Coupled Fluid/Structure/Control Problems, National Science Foundation, $88,200 (1996-1998)
- Sensitivity Analysis of Coupled Acoustic Problems to Structural Boundary Conditions and Efficient Numerical Solution Algorithms, Office of Naval Research, $481,000 (1995-1998)
- Domain Decomposition Methods in Science and Engineering, National Science Foundation, $30,000 (1995-1996)
- High Performance Solution of Three-Dimensional Nonlinear Transient Aeroelastic Problems, National Science Foundation, $88,200 (1995-1996)
- Supplement to President Young Investigator Award, National Science Foundation, $29,117 (1995)
- Supplement to President Young Investigator Award, National Science Foundation, $14,976 (1994)
- Coupled Fields and GAFD Turbulence, National Science Foundation (Grand Challenges Award), $4,500,000, (15%), (1992-1997)
- Massively Parallel and Scalable Implicit Time Integration Algorithms for Structural Dynamics, NASA Ames Research Center, $225,000 (1992-1995)
- High Performance Computational Methods for Structural Mechanics, National Science Foundation, $96,000 (1992-1994)
- The Front Range Consortium, Defense Advanced Research Projects Agency, $5,650,000 (1991-1994)
- High Performance Substructuring Algorithms for Massively Parallel Architectures, NASA Langley Research Center, $270,000 (1991-1994)
- Massively Parallel CFD Computations, National Science Foundation, $50,000 (1991-1994)
- President Young Investigator Award, National Science Foundation, $250,000 (1989-1994)
- President Young Investigator Award, Matching Funds from Lockheed M.S.C., CRAY Research Foundation, TRW Research Foundation, Michelin (France), Aerospatiale (France), and Framatome (France), $250,000 (1989-1994)
- Concurrent Processing Methods for Nonlinear Structural Dynamics, National Science Foundation, $292,968 (1988-1990)
- Concurrent Finite Element Computations on the Connection Machine, Naval Research Laboratory, $60,411 (1988-1989)

- Concurrent Finite Element Analysis on the ETA-10, Control Data Corporation, $50,000 (1987-1989)

Co-Principal Investigator and Percentage

- Scalable Environment for Quantification of Uncertainty and Optimization in Industrial Applications, DARPA, (23%), $2,293,749 (2016-2018)
- Predictive Simulations of Multi-Physics Flow Phenomena with Application to Integrated Hypersonic Systems, Department of Energy, (5%), $16,000,000 (2008-2013)
- Hybrid Unsteady Simulation for Helicopters, Defense Advanced Research Projects Agency, (25%), $1,803,472 (2004-2006)
- Collaborative Research: Acquisition of an IBM BlueGene/L Supercomputer, National Science Foundation, (25%), $1,053,558 (2004-2007)
- High-Performance and High-fidelity Aeroelastic Simulation of Fixed Wing Aircraft with Deployable Control Surfaces, Air Force Office of Scientific Research, $298,000, (33%), (2004-2007)
- Computational Methods for the Solution of Three-Dimensional Inverse Acoustic and Elastoacoustic Scattering Problems, National Science Foundation, $221,538, (50%), (2002-2005)
- Simulation Platform for the Earthquake Response of Reinforced Concrete Structures, National Science Foundation, $150,000, (25%), (2000-2001)
- Development and Applications of the Aerosonde at the University of Colorado, Department of Defense (DURIP), $370,000, (20%), (2000)
- Numerical Prediction of the Performance of Radial Model Coriolis Flowmeters, Direct Measurement Corporation, $30,000, (50%), (1998)
- Parallel Computational Methods for Large-Scale Structural Dynamics, Sandia National Laboratories, $274,957, (33%), (1997-1998)
- Acquisition of a Grand Challenge Data Laboratory, NCSA, University of Illinois (subcontract), $210,216, (50%), (1996-1997)
- A Matrix-Free Parallel Algorithm for Solving Nonlinear Mechanics Problems, Sandia National Laboratories, $101,452, (33%), (1996-1997)
- Domain Decomposition and Multi-Level Techniques in Large-Scale Parallel Computing, $74,000, (33%), (1994-1997)
- High Performance Parallel Analysis of Coupled Problems for Aircraft Propulsion, NASA Lewis Research Center, $469,848, (33%), (1993-1995)
- Space Structure Concepts, Shimizu Corporation, Japan, $700,000, (25%), (1991-1994)
- Advanced Methods Development for Computational Structural Mechanics, NASA Langley Research Center, $697,337, (33%), (1990-1993)

- Parallel Processing and Scientific Applications, Air Force Office of Scientific Research, $750,000, (50%), (1989-1992)
- Analysis, Preliminary Design and Simulation Systems for Control-Structure Interaction Problems, NASA Langley Research Center, $371,797, (33%), (1989-1992)
- Numerical Simulation of Transition in a Compressible Boundary Layer on the Connection Machine, National Science Foundation, $30,000, (50%), (1989-1990)
- Computational Methods and Software Systems for Dynamics and Control of Large Space Structures, NASA Langley Research Center, $191,345, (50%), (1989-1990)
- Center for Space Construction, NASA Headquarters, $10,500,000, (6.5%), (1988-1995)

PUBLICATIONS

Refereed Monographs and Book Chapters

1. C. Farhat, S. Grimberg, A. Manzoni and A. Quarteroni, "Computational Bottlenecks for PROMs: Pre-computation and Hyperreduction," in: *Model Order Reduction - Volume 2: Snapshot-Based Methods and Algorithms*, ed. by P. Benner, W. Schilders, S. Grivet-Talocia, A. Quarteroni, G. Rozza and L. M. Silveira, De Gruyter GmbH, Berlin, pp. 181-243 (2021)
2. D. Amsallem and C. Farhat, "On the Stability of Projection-Based Linear Reduced-Order Models: Descriptor vs Non-Descriptor Forms," in: *Reduced Order Methods for Modeling and Computational Reduction*, *Springer MS & A Series*, ed. A. Quarteroni and G. Rozza, Springer, Vol. 8, pp. 215-234 (2014)
3. C. Farhat, R. Tezaur and J. Toivanen, "A Domain Decomposition Solver for the Discontinuous Enrichment Method for the Helmholtz Equation," in: *Domain Decomposition Methods in Sciences and Engineering XX*, *Lecture Notes in Computational Science and Engineering*, ed. R. Bank, M. Holst, O. Widlund, and J. Xu, Springer, Vol. 91, Berlin, pp. 207-214 (2013)
4. Z. Dostál, V. Vondrák, D. Horák, C. Farhat and P. Avery, "Scalable FETI Algorithms for Frictionless Contact Problems," in: *Domain Decomposition Methods in Sciences and Engineering XVII*, *Lecture Notes in Computational Science and Engineering*, ed. U. Langer et al., Springer, Vol. 60, Berlin, pp. 263-270 (2008)
5. J. Cortial, C. Farhat, M. Rajashekhar and L. Guibas, "Compressed Sensing and Time-Parallel Reduced-Order Modeling for Structural Health Monitoring using a DDDAS," *Lecture Notes in Computer Science*, ed. Y. Shi et al., Springer-Verlag, Vol. 4487, pp. 1171-1179 (2007)
6. J. Cortial and C. Farhat, "A Time-Parallel Implicit Methodology for the Near-Real-Time Solution of Systems of Linear Oscillators," *Real-Time PDE-Constrained Optimization*, ed. L. Biegler, O. Ghattas, M. Heinkenschloss, D. Keyes and B. van Bloemen Waanders, Computational Science and Engineering, SIAM (2007)

7. C. Farhat, J. G. Michopoulos, F. K. Chang, L. J. Guibas and A. J. Lew, "Towards a Dynamic Data Driven System for Structural and Material Health Monitoring," *Lecture Notes in Computer Science*, ed. V. N. Alexandrov, G. D. van Albada, P. M.A. Sloot, and J. Dongarra, Springer-Verlag, Vol. 3993, pp. 456-464 (2006)
8. J. Michopoulos, C. Farhat, E. Houstis, P. Tsompanopoulou, H. Zhang and T. Gullaud, "Dynamic Data Driven Methodologies for Multiphysics System Modeling and Simulation," *Lecture Notes in Computer Science*, ed. V. S. Sunderam, G. D. van Albada, P. M. A. Sloot, et al., Springer-Verlag, Vol. 3515, Part II, pp. 616-623 (2005)
9. C. Farhat, "The Discontinuous Erichment Method (DEM) for Multiscale Analysis," *Septième Colloque National en Calcul des Structures, Giens 2005*, ed. R. Ohayon, J-P. Grellier, A. Rassineux, Hermès Science Publications, Vol. 1 pp. 33-34 (2005)
10. C. Farhat, J. Li, M. Lesoinne and P. Avery, "A FETI Method for the Solution of a Class of Indefinite or Complex Second- or Fourth-Order Problems," *Lecture Notes in Computational Science and Engineering*, ed. R. Kornhuber, R. H. W. Hoppe, D. E. Keyes, J. Periaux, O. Pironneau and J. Xu, Springer-Verlag, Haidelberg, pp. 19-34 (2004)
11. C. Farhat, "CFD-Based Nonlinear Computational Aeroelasticity," *Encyclopedia of Computational Mechanics*, ed. E. Stein, R. De Borst and T. Hughes, John Wiley & Sons, Vol. 3, (2004)
12. R. Djellouli, R. Tezaur and C. Farhat, "On the Solution of Inverse Obstacle Acoustic Scattering Problems with a Limited Aperture," *Mathematical and Numerical Aspects of Wave Propagation*, ed. G. C. Cohen, E. Heikkola, P. Joly and P. Neittaanmaki, Springer, pp. 625-630 (2003)
13. J. Michopoulos, P. Tsompanopoulou, E. Houstis, J. Rice, C. Farhat, M. Lesoinne and F. Lechenault, "DDEMA: a Data-Driven Environment for Multiphysics Applications," *Lecture Notes in Computer Science*, ed. P. M. A. Sloot, D. Abramson, A. Bogdanov, J. J. Dongarra, A. Zomaya and Y. Gorbachev, Springer-Verlag, Haidelberg, Vol. 2660, Part IV, pp. 309-318 (2003)
14. U. Hetmaniuk and C. Farhat, "A Blended Fictitious/Real Domain Decomposition Method for Partially Axisymmetric Exterior Helmholtz Problems with Dirichlet Boundary Conditions," *Recent Developments in Domain Decomposition Methods*, ed. L. F. Pavarino and A. Toselli, Lecture Notes in Computational Science and Engineering, Springer, Vol. 23, pp. 1-26 (2002)
15. C. Farhat and D. Rixen, "Computational Methods: Linear Algebra, Generalized Inverse, SVD," *Encyclopedia of Vibration*, ed. S. G. Braun, D. J. Ewins and S. S. Rao, Academic Press Ltd, pp. 710-720 (2001)
16. C. Farhat and P. LeTallec, "Vistas in Domain Decomposition and Parallel Processing in Computational Mechanics," *Computer Methods in Applied Mechanics and Engineering*, Vol. 184, Nos. 2-4 (2000)
17. C. Farhat, B. Koobus and H. Tran, "Simulation of Vortex Shedding Dominated Flows Past Rigid and Flexible Structures," *Computational Methods for Fluid-Structure Interaction*, ed. T. Kvamsdal, I. Enevoldsen, K. Herfjord, C. B. Jenssen, K. Mehr and S. Norsett, Tapir, pp. 1-30 (1999)

18. C. Farhat and M. Lesoinne, "Fast Staggered Algorithms for the Solution of Three-Dimensional Nonlinear Aeroelastic Problems," AGARD Report R-822, Numerical Unsteady Aerodynamic and Aeroelastic Simulation (l'Aérodynamique instationnaire numérique et la simulation de l'aéroélasticité), North Atlantic Treaty Organization (NATO), March (1998)

19. C. Farhat, "Parallel and Distributed Solution of Coupled Nonlinear Dynamic Aeroelastic Response Problems," *Solving Large-Scale Problems in Mechanics: Parallel and Distributed Computer Applications*, ed. M. Papadrakakis, J. Wiley, pp. 243-302 (1997)

20. C. Farhat, "High Performance Simulation of Coupled Nonlinear Transient Aeroelastic Problems," AGARD Report R-807, Special Course on Parallel Computing in CFD (l'Aérodynamique numérique et le calcul en parallèle), North Atlantic Treaty Organization (NATO), October (1995)

21. C. Farhat, "Optimizing Substructuring Methods for Repeated Right Hand Sides, Scalable Parallel Coarse Solvers, and Global/Local Analysis," *Domain-Based Parallelism and Problem Decomposition Methods in Computational Science and Engineering*, ed. D. Keyes, Y. Saad and D. G. Truhlar, SIAM, pp. 141-160 (1995)

22. C. Farhat and F. X. Roux, "Implicit Parallel Processing in Structural Mechanics," *Computational Mechanics Advances*, Vol. II, No. 1, pp. 1-124 (1994)

23. C. Farhat, "Domain Decomposition and Parallel Processing," *Postgraduate Studies in Supercomputing*, ed. FNRS/NFWO, Université de Liège, Belgium (1992)

24. C. Farhat, "An Introduction to Parallel Scientific Computations," *Postgraduate Studies in Supercomputing*, ed. FNRS/NFWO, Université de Liège, Belgium (1991)

25. C. Farhat, "Finite Element Analysis on Concurrent Machines," *Parallel Processing in Computational Mechanics*, ed. H. Adeli, Marcel Dekker, Inc., New York, pp. 183-218 (1991)

Refereed Journals

1. C. Little and C. Farhat, "Projection-Based Dimensional Reduction of Adaptively Refined Nonlinear Models," *Communications on Applied Mathematics and Computation*, (in press)

2. F. As'ad and C. Farhat, "A Mechanics-Informed Deep Learning Framework for Data-Driven Nonlinear Viscoelasticity," *Computer Methods in Applied Mechanics and Engineering*, Vol. 417, Part A, 116463 (2023)

3. J. Barnett, C. Farhat and Y. Maday, "Neural-Network-Augmented Projection-Based Model Order Reduction for Mitigating the Kolmogorov Barrier to Reducibility," *Journal of Computational Physics*, Vol. 492, 112420 (2023)

4. K.C. Park, J. Gonzalez, Y.H. Park, S.J. Shin, J.G. Kim, K. Maute, C. Farhat and C.A. Felippa, "Displacement-Based Partitioned Equations of Motion for Structures: Formulation and Proof-of-Concept Applications," *International Journal for Numerical Methods in Engineering*, https://doi.org/10.1002/nme.7334 (2023)

5. D. Di Lorenzo, V. Champaney, J.-Y. Marzin, C. Farhat and F. Chinesta, "Physics Informed and Data-Based Augmented Learning in Structural Health Diagnosis," *Computer Methods in Applied Mechanics and Engineering*, Vol. 414, 116186 (2023)

6. A. Cohen, C. Farhat, A. Somacal and Y. Maday, "Nonlinear Compressive Reduced Basis Approximation for PDEs," *Comptes Rendus de l'Académie des Sciences - Mécanique*, ffhal-04031976f (2023)

7. J. Ho and C. Farhat, "Aerodynamic Optimization with Large Shape and Topology Changes using Embedded Boundary Method," *Journal of Computational Physics*, Vol. 488, 112191 (2023)

8. S. Anderson, C. White and C. Farhat, "Space-Local Reduced-Order Bases for Accelerating Reduced-Order Models Through Sparsity," *International Journal for Numerical Methods in Engineering*, Vol. 124, pp. 1646-1671 (2022)

9. Y. Ghazi, N. Alhazmi, R. Tezaur and C. Farhat, "Training a Neural-Network-Based Surrogate Model for Aerodynamic Optimization Using a Gaussian Process," *International Journal of Computational Fluid Dynamics*, Vol. 36, pp. 538-554 (2022)

10. R. Tezaur, F. As'ad and C. Farhat, "Reprint of: Robust and Globally Efficient Reduction of Parametric, Highly Nonlinear Computational Models and Real Time Online Performance," *Computer Methods in Applied Mechanics and Engineering*, Vol. 402, 115747 (2022)

11. M. J. Azzi, C. Ghnatios, P. Avery and C. Farhat, "Acceleration of a Physics-Based Machine Learning Approach for Modeling and Quantifying Model-Form Uncertainties and Performing Model Updating," *Journal of Computing and Information Science in Engineering*, Vol. 23, pp. 011009-1-011009-12 (2022)

12. G. Boncoraglio and C. Farhat, "Piecewise-Global Nonlinear Model Order Reduction for PDE-Constrained Optimization in High-Dimensional Parameter Spaces," *SIAM Journal on Scientific Computing*, Vol. 44, pp. A2176-A2203 (2022)

13. J. Lorenzetti, A. McClellan, C. Farhat and M. Pavone, "Linear Reduced Order Model Predictive Control," *IEEE Transactions on Automatic Control*, Vol. 67, pp. 5980-5995 (2022)

14. R. Tezaur, F. As'ad and C. Farhat, "Robust and Globally Efficient Reduction of Parametric, Highly Nonlinear Computational Models and Real Time Online Performance," *Computer Methods in Applied Mechanics and Engineering*, Vol. 399, 115392 (2022)

15. A. McClellan, J. Lorenzetti, M. Pavone and C. Farhat, "A Physics-Based Digital Twin for Model Predictive Control of Autonomous Unmanned Aerial Vehicle Landing," *Philosophical Transactions of the Royal Society A*, Vol. 380, 20210204 (2022)

16. J. Barnett and C. Farhat, "Quadratic Approximation Manifold for Mitigating the Kolmogorov Barrier in Nonlinear Projection-Based Model Order Reduction," *Journal of Computational Physics*, Vol. 464, 111348 (2022)

17. F. As'ad, P. Avery and C. Farhat, "A Mechanics-Informed Artificial Neural Network Approach in Data-Driven Constitutive Modeling," *International Journal for Numerical Methods in Engineering*, Vol. 123, pp. 2738-2759 (2022)

18. G. Boncoraglio and C. Farhat, "Active Manifold and Model Order Reduction to Accelerate Multidisciplinary Analysis and Optimization," *AIAA Journal*, Vol. 59, pp. 4739-4753 (2021)

19. D. Huang, M. Long Wong, S. K. Lele and C. Farhat, "Homogenized Flux-Body Force Approach for Modeling Porous Wall Boundary Conditions in Compressible Viscous Flows," *AIAA Journal*, Vol. 59, pp. 2045-2059 (2021)

20. S. Riffaud, M. Bergmann, C. Farhat, S. Grimberg, and A. Iollo, "The DGDD Method for Reduced-Order Modeling of Conservation Laws," *Journal of Computational Physics*, Vol. 437, 110336 (2021)

21. E. Harald van Brummelen and C. Farhat, "Vanguard Developments in Computational Methods for Fluid-Structure Interaction," *International Journal for Numerical Methods in Engineering*, Vol. 122, pp. 5173-5175 (2021)

22. G. Boncoraglio, C. Farhat and C. Bou-Mosleh, "Model Reduction Framework with a New Take on Active Subspaces for Optimization Problems with Linearized Fluid-Structure Interaction Constraints," *International Journal for Numerical Methods in Engineering*, Vol. 122, pp. 5450-5481 (2021)

23. D. Huang, P. Avery and C. Farhat, "An Embedded Boundary Approach for Resolving the Contribution of Cable Subsystems to Fully Coupled Fluid-Structure Interaction," *International Journal for Numerical Methods in Engineering*, Vol. 122, pp. 5409-5429 (2021)

24. J. Ho and C. Farhat, "Discrete Embedded Boundary Method with Smooth Dependence on the Evolution of a Fluid-Structure Interface," *International Journal for Numerical Methods in Engineering*, Vol. 122, pp. 5353-5383 (2021)

25. P. Avery, J. Ehlers, A. Derkevorkian and C. Farhat, "A Computationally Tractable Framework for Nonlinear Dynamic Multiscale Modeling of Membrane Fabric Based on Model Reduction and Neural Networks," *International Journal for Numerical Methods in Engineering*, Vol. 122, pp. 2598-2625 (2021)

26. S. Grimberg, C. Farhat, R. Tezaur and C. Bou-Mosleh, "Mesh Sampling and Weighting for the Hyperreduction of Nonlinear Petrov-Galerkin Reduced-Order Models with Local Reduced-Order Bases," *International Journal for Numerical Methods in Engineering*, Vol. 122, pp. 1846-1874 (2021)

27. W. He, P. Avery and C. Farhat, "In-situ Adaptive Reduction of Nonlinear Multiscale Structural Dynamics Models," *International Journal for Numerical Methods in Engineering*, Vol. 121, pp. 4971-4988 (2020)

28. Y. Choi, G. Boncoraglio, S. Anderson, D. Amsallem and C. Farhat, "Gradient-based Constrained Optimization Using a Database of Linear Reduced-Order Models," *Journal of Computational Physics*, Vol. 423, 109787 (2020)

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