

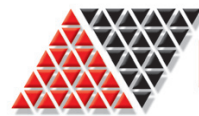
# proceedings

# NA

**NORTH AMERICAN**

# Regional Summit

# 2008

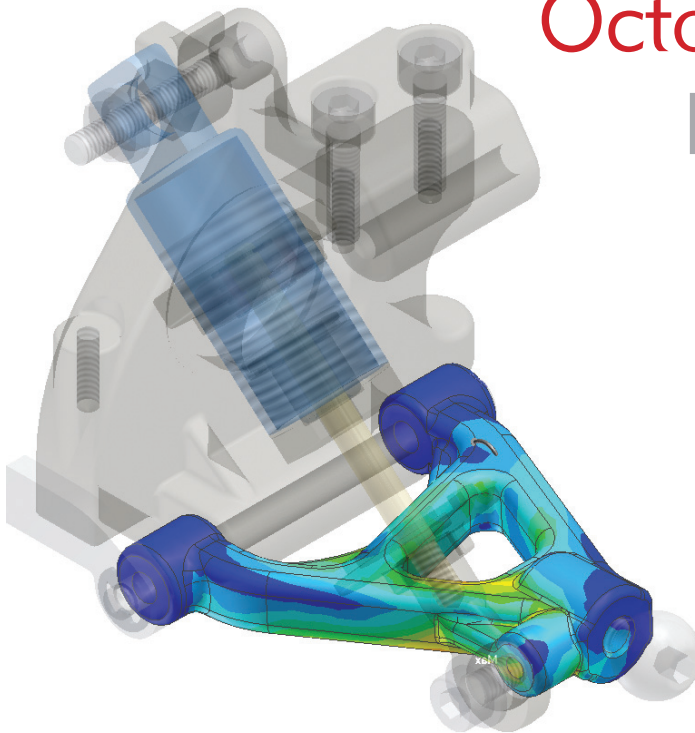


**NAFEMS**

## 2020 Vision of Engineering Analysis and Simulation

## October 29-31 | 2008

## Hampton, Virginia



- Business Benefits
- Designer Analysis
- Education
- High Performance Computing (HPC)
- Interoperability
- Multiphysics
- Non-deterministic Analysis
- Manufacturing
- Practical Applications
- Simulation Data Management (SDM)

[www.nafems.org/nafems2020](http://www.nafems.org/nafems2020)

Ballroom B

Ballroom C

Rooms 203 & 204

# conference agenda

## MONDAY: OCTOBER 27, 2008

**8:00 am - 5:00 pm**     **Training Course:** Finite Element Model Validation, Updating, and Uncertainty Quantification for Linear and Non-linear Models for Aerospace, Civil and Mechanical Engineers (*optional*)<sup>1</sup>  
• *F. Hemez, Los Alamos National Laboratory (LANL)*

## TUESDAY: OCTOBER 28, 2008

**8:00 am - 5:00 pm**     **Training Course:** Finite Element Model Validation, Updating, and Uncertainty Quantification for Linear and Non-linear Models for Aerospace, Civil and Mechanical Engineers (*optional*)<sup>1</sup>  
• *F. Hemez, Los Alamos National Laboratory (LANL)*

**1:00 pm - 6:00 pm**     **REGISTRATION**

<sup>1</sup> This is an optional training course which requires separate registration.

## WEDNESDAY: OCTOBER 29, 2008

**7:00 am - 4:00 pm**     **REGISTRATION**

**7:15 am - 8:00 am**     **Light Breakfast**

**8:00 am - 8:10 am**     **Opening of the Conference:** T. Morris, NAFEMS CEO

**8:15 am - 8:25 am**     **Welcome to NAFEMS 2020:**  
R. Dreisbach, The Boeing Company and Chairman of NAFEMS NA Steering Committee

**8:30 am - 9:15 am**     **Keynote Speaker:** Pathway to Future CAE Technologies & Their Role in Ambient Intelligent Environments  
• *A. Noor, Old Dominion University (Ballroom B and C)*

**9:20 am - 10:05 am**     **Keynote Speaker:** Isogeometric Analysis: Progress and Challenges  
• *T. Hughes, University of Texas at Austin (Ballroom B and C)*

**10:05 am - 10:30 am**     **Break**

EXHIBITS OPEN

Session 1A

Session 1B

Session 1C

10:30 am - 11:00 am

Expanding Engineering Analysis Tools to Biomedical Applications: Using an Example of Nasal Airflow in Patients with Septal Deviations

*B. Barnum, OSS*

Realizing Simulation Data Management Interoperability Across Domains

*A. Schreiber, PROSTEP*

The NCMS High Performance Simulation for Product Design Program

*C. Ryan, NCMS*

11:05 am - 11:35 am

Dynamics of Social Systems – Analysis and Design

*T. Doherty, Tommy Concepts*

The Case for Simulation Lifecycle Management

*P. Lalor, SIMULIA*

How Modern Software Methodologies and High Performance Computing will Change the Face of Simulation

*E. Dodd, IBM and  
J. Lyon, Simudyne*

11:40 am - 12:10 pm

Failure Analysis of Composite Structures using Multicontinuum Technology: A Mesh Sensitive Study

*D. Robbins Jr.,  
Firehole Technologies, Inc.*

Future Breakthroughs in Creating, Managing and Analyzing Simulation Data for Near-Real Time Decision Making

*J. Evans, Engineous*

12:10 pm - 1:40 pm

**Lunch Break**

Session 2A

Session 2B

Session 2C

1:40 pm - 2:10 pm

Uncertainty Quantification for the Orion Crew Exploration Vehicle Heat Shield using Cielo and Dakota

*J. Schiermeier,  
NASA Jet Propulsion Laboratory*

Simulation and the Creative Process – A New Paradigm

*U. Schramm, Altair Engineering*

Modeling of Materials – Getting to a Smaller Scale

*R. Yancey, Altair Engineering*

2:15 pm - 2:45 pm

Uncertainty Structure Matrix for Models and Simulations

*L. Green, NASA LaRC*

Why Design Analysis Works – Confessions of a Former Analysis Snob

*V. Adams, SolidWorks*

Simulation of Particulate Solids Handling and Processing Operations Using the Discrete Element Method

*D. Scharpf,  
DEM Solutions (USA), Inc.*

2:50 pm - 3:20 pm

Hypothesis Testing of Finite Element Models using Load Uncertainty Probability Density Functions

*J. Sundermeyer, Caterpillar, Inc.*

Quality Improvements and their Impact in a Lean CAE "Future World"

*M. Zebrowski, Ford (Retired)*

Fracture, Damage and Progressive Failure Analysis of Composite Materials

*S. Choudhry, MSC.Software*

3:20 pm - 3:45 pm

**Break**

Session 3A

Session 3B

Session 3C

3:45 pm - 4:15 pm

Simulation-Supported Decision Making

*G. Allen, Decision Incite*

Using Concurrent Engineering to Drive Electro-Optical Sensor Product Development

*D. Thomas, The Aerospace Corp.  
and M. Panthaki, Comet Solutions*

Direct Coupled-Field Elements for Multiphysics Simulation

*S. Scampoli, ANSYS*

4:20 pm - 4:50 pm

Stochastic Simulation of Aircraft Cabin Interior Considering Uncertain Load Conditions by Modeling with Random Fields

*D. Vogt, EADS Innovation Works*

Designer Analysis: Utopia or Catastrophe?

*R. Keene, SIMULIA*

Efficient Multi-physics Modeling of the Dynamic Response of RF-MEMS Switches

*S. Scampoli, ANSYS*

5:00 pm - 7:00 pm

**Networking Reception: Ballroom A**

EXHIBITS OPEN



# THURSDAY: OCTOBER 30, 2008

7:00 am - 4:00 pm

## REGISTRATION

7:00 am - 8:00 am

## Light Breakfast

8:00 am - 8:45 am

### Keynote Speaker: Integrated Computational Materials Engineering

• *M. Boyce, M.I.T. (Ballroom B and C)*

8:50 am - 9:35 am

### Keynote Speaker: Hybrid Engineering Enablers: Technology, Process and People Perspective

• *T. Abe, Ford Motor Company (Ballroom B and C)*

9:35 am - 10:05 am

## Break

10:05 am - 10:35 am

### Session 4A

Product Performance Simulation in 2020

*M. Halpern: Gartner*

### Session 4B

Unified FEA

*K. Short: SIMULIA*

### Session 4C

Fatigue and Fracture Analysis – "On the Fly"

*E. Punch: Punch Software Solutions*

10:40 am - 11:10 am

The Next Revolution in Simulation

*J. Leuridan: LMS*

Advances in Element Technology: Solid-Shell Elements

*W. Xie: ANSYS*

T-Splines and Isogeometric Analysis: A New Design-Through-Analysis Paradigm

*M. Scott: Univ. of Texas at Austin  
M. Sederberg: T-Splines, Inc.*

11:15 am - 11:45 am

Training the Next Generation of Simulation Engineers: NAFEMS Initiative in Skills Management

*T. Morris: NAFEMS*

"Get it Right the First Time" with Simulation-Based Design

*T. Weninger: ESI Group*

Modeling Bolted Connections for Stress Analysis

*M. Tomlin: Siemens PLM Software*

EXHIBITS OPEN

11:45 am - 1:15 pm

## Lunch Break

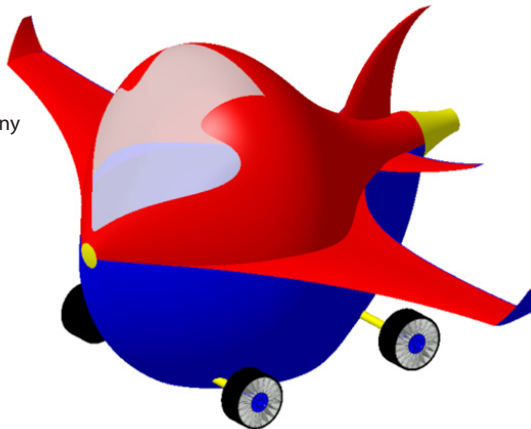
1:15 pm - 1:45 pm

### Session 5A/B

The Role of Digital Simulation in Developing a PLASVEE® for 2020

*(Ballroom B and C)*

- The Boeing Company
- Altair Engineering
- SIMULIA
- LMS International
- ANSYS
- CD-adapco



*R. Dreisbach, L. Krueger, J. Vandeventer: The Boeing Company*

### Session 5C

Simulation Training Challenges in the 2020 Workplace

*N. Veikos: CAE Associates, Inc.*

Case Study: How to Make an Analysis Interface that Both the Novice and the Expert will Use

*T. Cunningham: Micro Motion, Inc.  
D. Hensley: ATA Engineering, Inc.*

New Frontiers in CAE Interoperability

*A. Chinn: ITI TranscenData*

# 2020 Vision of Engineering Analysis and Simulation

2:55 pm - 3:25 pm

**Break**

3:25 pm - 3:55 pm

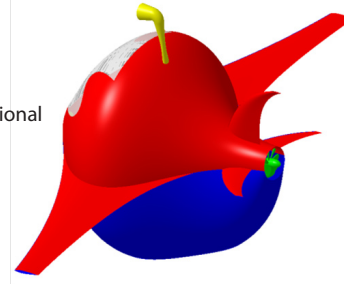
**EXHIBITS OPEN**

**Session 6A/B**

**Session 6C**

The Role of Digital Simulation in Developing a PLASVEE® for 2020  
(Ballroom B and C)

- The Boeing Company
- LMS International
- Altair Engineering
- ANSYS
- SIMULIA
- CD-adapco



*R. Dreisbach, L. Krueger, J. Vandeventer: The Boeing Company*

Virtual Prototyping – An Analyst’s Dream: Progress Challenges and Future Path to 2020

*S. Choudhry: MSC.Software*

Issues Facing Engineering Simulation: A CAE Providers Perspective

*D. Conover: ANSYS*

4:00 pm - 4:30 pm

5:00 pm - 8:30 pm

**Tour of the Center for Advanced Engineering Environments (CAEE) {offsite}**

**FRIDAY: OCTOBER 31, 2008**

7:00 am - 11:00 am

**REGISTRATION**

7:00 am - 8:00 am

**Light Breakfast**

8:00 am - 8:45 am

**EXHIBITS OPEN**

**Keynote Speaker:** Computational Structural Acoustics: Technology, Trends and Challenges  
• *J. Cipolla, Weidlinger Associates, Inc. (Ballrooms B and C)*

8:50 am - 9:35 am

**Keynote Speaker:** MCAE Opportunities and Markets: A Fresh Look at a Shifting Landscape  
• *J. Orr, Cyon Research (Ballrooms B and C)*

9:35 am - 10:05 am

**Break**

10:05 am - 10:35 am

**The Future Directions of Simulation: One Career Person’s Vendor-oriented View**  
D. Nagy, CD-adapco and Member of the NAFEMS NA Steering Committee

10:40 am - 12:10 pm

**VENDOR FORUM**

- SIMULIA:** *Dr. Ken Short, VP of Strategy and Marketing*
- ANSYS:** *Mr. Dave Conover, Chief Technologist and Corporate Fellow*
- Siemens PLM Software:** *Mr. Ken Blakely, VP of CAE Business Development*
- MSC.Software:** *Mr. David Rush, VP of Industry Business Development*
- PROSTEP, Inc.:** *Dr. Andreas Schreiber, President and CEO*
- Engineous Software:** *Dr. Siu Tong, Founder*
- CD-adapco:** *Dr. Dennis Nagy, VP Marketing and Business Development*
- LMS International:** *Mr. Tom Curry, Executive Vice-President, CMO*
- Altair Engineering:** *Mr. Brett Chouinard, VP - Americas*
- Comet Solutions:** *Mr. Malcolm Panthaki, Founder, Chairman & CTO*
- ESI Group:** *Mr. Michael Bloor, Chief Operating Officer*
- FunctionSIM:** *Mr. Karl Bangert, President*
- IBM:** *Mr. Greg Clifford, Deep Computing Auto/Aero Lead*



12:15 pm - 12:45 pm

**NAFEMS Commentary and Wrap-Up**

12:45 pm

**Close**