How to Enable Complex Simulations:
The Power of Multiphysics & Digital Thread

NAFEMS

Agenda

17 October 2023
Milwaukee | USA

Exhibitors

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Agenda

8:30 - 8:45	**Welcome & Introduction - Crystal Ballroom**

8:45 - 9:30	**Keynote: An Introduction to GE HealthCare and a review of Model-based product development and delivery of precision care.** Dr. Marc Schaepkens – GE HealthCare

9:30 - 10:15	**Keynote: Keynote: The Vital Role of Machine Learning in Enhancing Simulations.** Peter Chien – Professor in Statistics and Data Science – University of Wisconsin-Madison

10:15 - 10:30	**Networking Break in Ballroom Foyer**

	Application Crystal Ballroom	**Digital Transformation/Digital Thread** Juneau	**Machine Learning** Kilbourn
10:30 - 11:00	**How to Understand Interactions Between the Mechanical System and Electrical Control of a Motor Drive Using Full Fidelity Electrical and Mechanical Simulators** *Dheeraj Vemula* *Altair*	**Digital Thread: Definition, Value and Reference Model** *Steve Arnold* *NASA*	**Machine Learning for Time Consuming or Complex Simulations** *Gavin Jones* *Smart UQ*
11:00 - 11:30	**UnCorked:** **The Forces for Pulling a Cork -** **Load Reconstruction** *Tim Hunter* *Wolf Star Technologies*	**A Perspective on the Adoption of Digital Engineering Within an Enterprise** *Matt Ladzinski* *Ansys*	

11:30 - 12:30	**Lunch in Crystal Ballroom**

12:45 - 1:20	**Discussion on Requirements for Educating the Next Generation:** **Using Digital Thread to Demonstrate Load Prediction in Finite Element Analysis Workshop** *Michael C. Sevier and Tim Hunter - Milwaukee School of Engineering*

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Time	Multiscale/Multiphysics — Crystal Ballroom	Digital Transformation/Digital Thread — Juneau	CFD/Optimization — Kilbourn
1:20 - 1:30	**Brief Transition**		
1:30 - 2:00	**An Enabling Platform for Achieving Multiscale Multiphysics Analysis of Multiphase Materials** *Steven M. Arnold* *NASA*	**A Digital Thread Methodology to Optimize Continuous Casting Tundish based on Integrated Fluid -thermal- Structural Analysis** *Dr. Christian Windisch* *Siemens Digital Industries Software*	**Intelligent Automated Design Exploration for Thermal Design of a Motor Drive Inverter Combining High Fidelity Loss Generation of the Power Electronics with CFD of Liquid and Air Cooling** *Dheeraj Vemula* *Altair*
2:00 - 2:30	**Simulating the effect of incremental layering on the shrinkage stress of dental resin-composite restorations** *Daniel Larrañaga-Ordaz* *University of Minnesota*	**Developing a Greener America by Embracing Complexity and Fighting the State-of-the-Art Inertia.** *Pierre Lacerte* *OPSUN*	**Optimization of Tailpipe NOx Sampling Device Geometry for Improved NOx Sensing Accuracy** *Zachary Bryant* *Cummins Emissions Solutions*
2:30 - 3:00	**Exploring GPU Acceleration in Computer-Aided Engineering: Advantages, Innovations, and Prospects** *Ian Pegler* *NVIDIA*		
3:00: - 3:15	**Networking Break in Ballroom Foyer**		
3:15 - 4:00	**Panel Discussion: Open Q&A - led by Steve Arnold- NASA - Crystal Ballroom**		
4:00 - 5:00	**Networking Reception in Exhibition**		

Subject to Change

FLOOR PLAN

ESCALATORS TO 4TH FLOOR

ELEVATORS

AM - Application

CRYSTAL BALLROOM

PM - Multiscale/Multiphysics

BATHROOM

BATHROOM

ELEVATORS

STAIRWELL TO 4TH FLOOR

Networking Breaks
BALLROOM FOYER

AM - Machine Learning

KILBOURN

PM - CFD/Optimization

AM & PM
Digital Transformation/
Digital Thread

JUNEAU

FLOUNDERS

REGENCY BALLROOM

GOLDA MEIR

OAK