

Product Lifecycle Management Industrial Advisory Board Meeting November 11th, 2009

John Sullivan

Director

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Christoph Hoffmann

Co-Director

PLM Center of Excellence

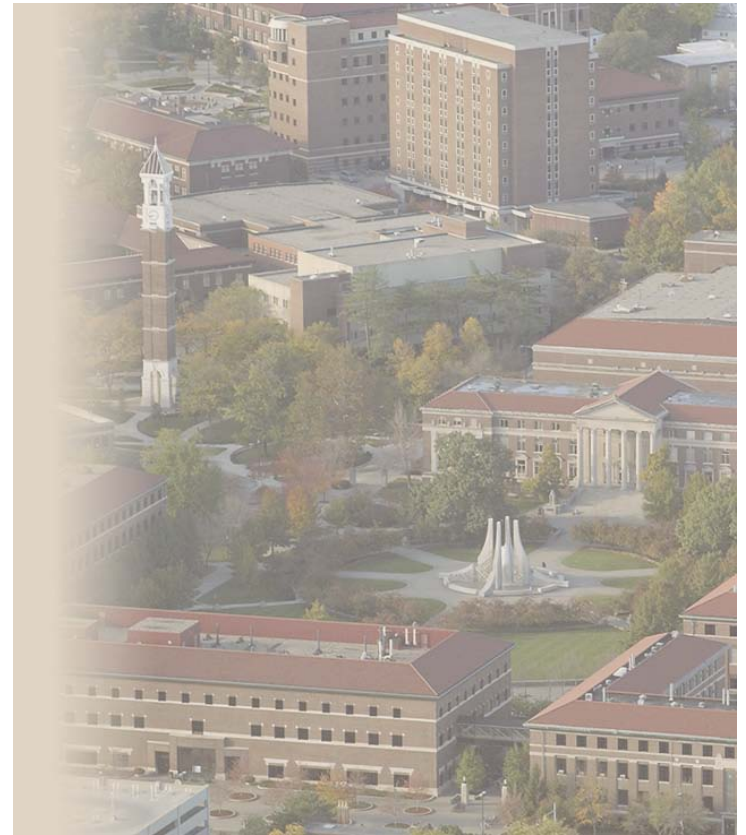
Nathan Hartman

Co-Director

PLM Center of Excellence

Richard Couch

Director of Engagement



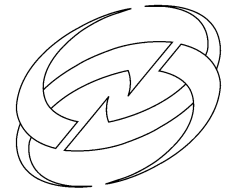
Status of CAM

- CAM is know part of the College of Engineering, still interdisciplinary.
- Offices are moving back to Potter Engineering Center.
- Advanced Manufacturing Summit – Spring '10.
- PLM Center of Excellence will continue regardless.

Today's Agenda

- 8:00 – 8:30 Continental Breakfast
- 8:30 – 9:00 Opening Remarks - Dr. John Sullivan and Richard Couch
- 9:00 – 9:45 Robust Computational Geometry for Design, Manufacturing, and Robotics - Prof. Elisha Sacks
- 9:45 – 10:30 Examining the Use of Lightweight 3D Formats on Handheld Devices - Prof. Nathan Hartman
- 10:30 – 10:45 Break
- 10:45 – 11:30 Breaking the Barriers between Product Lifecycle and Working Knowledge™ in Design - Prof. Karthik Ramani
- 11:30 – 12:15 Product Lifecycle Management: Roadmap to Global Sustainability - Prof. Scott Homan
- 12:15 – 1:00 Lunch
- 1:00 – 1:15 Incorporation of SimXpert into the Curriculum – Prof. Pat Connolly
- 1:15 – 2:15 Dr. Michael Grieves
- 2:15 – 3:00 PLM Certificate Program and Integrated Product Realization Lab Project - Prof. Nate Hartman
- 3:00 – 3:30 Closing Remarks/Discussion
- 3:30 – 4:30 Executive IAB Members – Review and selection of new Center Projects

Product Lifecycle Management Center of Excellence

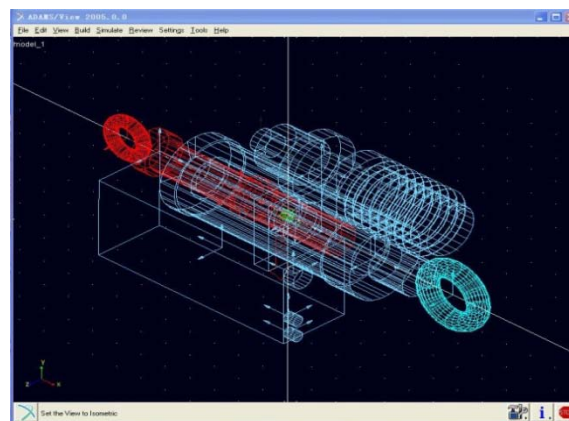
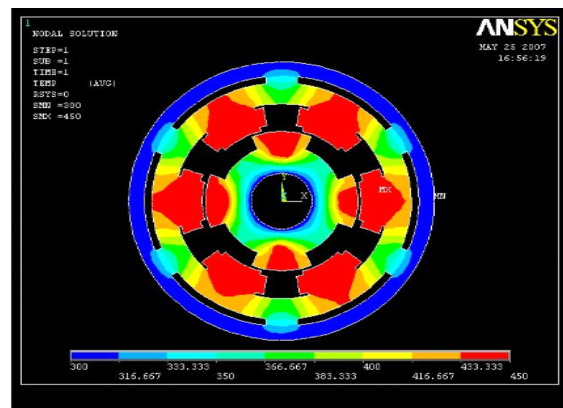


Mission

- Promote the advancement and implementation of the PLM vision through industry partnerships and public and private grants in **Discovery, Engagement, and Learning**.
- Provide the means where advanced technologies that allow for the implementation of PLM can be researched, applied, taught and disseminated.
 - **Research** the technology
 - **Apply** the research to real-world problem
 - **Teach** those technologies to students
 - **Disseminate** them as valuable business practices

PLM Center of Excellence

- Interdisciplinary Research Effort:
Management, Engineering, Science,
Technology, and Pharmacy
- 750K 3-year Purdue commitment
- Center Membership:
 - Siemens PLM Software
 - Cummins
 - Honda
 - Boeing
 - MSC Software
 - Mahindra Satyam
- Other Support:
 - Procter & Gamble
 - Rolls Royce
 - Eli Lilly
 - General Motors (PACE Program)
 - EDS
- Software:
 - Dassault Systemes
 - IBM
 - Siemens PLM Software
 - PTC
 - Autodesk
 - SimXpert



Previous PLM Center Projects

- PDM Investigation, Evaluation, Implementation, and Demonstration for PLM – Dr. Craig Miller
- Development of a Streamlined Methodology to Showcase the PLM Projects in Immersive Virtual Environments – Dr. Nathan Hartman
- Models to Support Auto-ID Based Process Control Systems in PLM – Dr. Edie Schmidt
- Integrated Sensing and Diagnostics for Product Life Cycle Health Management of Gas Turbine Engines : Application to Wire Harnesses and Connectors – Dr. Douglas Adams
- PLM Metrics (1, 2, &3) – Prof. Cynthia Tomovic
- Next Generation DHM for Assessing Short Duration Events in Work Analysis & Design - Prof. Vince Duffy
- Prof. Karthik Ramani – Configuration Driven Design for Knowledge Reuse During Product Lifecycle
- Prof. Nathan Hartman - Examination of Data Exchange between Contemporary CAD Tools
- Prof. Ganesh Subbarayan – A procedure of Analysis of Feasibility and Uncertainty in Distributed Product Development Environments
- Prof. Walid Aref - Exploratory Research in Database Systems Support for Product Lifecycle Management
- Advancing Product Lifecycle Management through Multi-Disciplinary Optimization – Prof. Mark French
- Creation of Design Spaces and Exploration Through Visualization and Configuration – Prof. Karthik Ramani

Current Center Projects

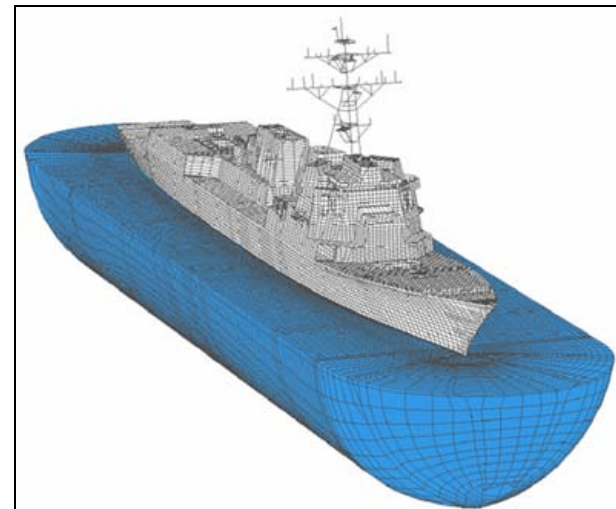
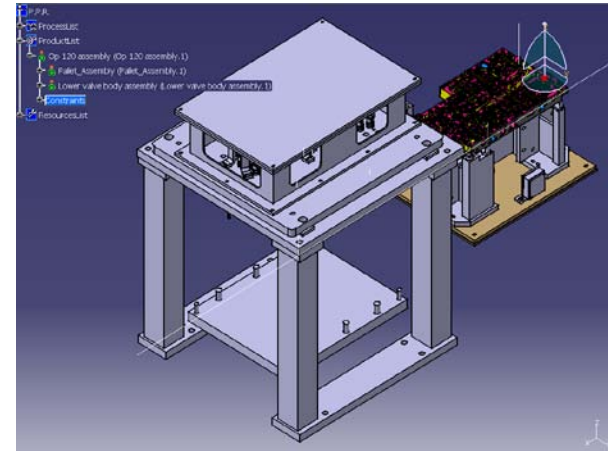
- Robust Computational Geometry for Design, Manufacturing, and Robotics - Prof. Elisha Sacks
- Examining the Use of Lightweight 3D Formats on Handheld Devices - Prof. Nathan Hartman
- Breaking the Barriers between Product Lifecycle and Working Knowledge™ in Design - Prof. Karthik Ramani (Purdue Commercialization Award)
- Product Lifecycle Management: Roadmap to Global Sustainability - Prof. Scott Homan

Proposed Projects

- Implementing ontology-based information sharing in Product Lifecycle Management
- Higher Performance Machining Processes Using Fractional Order Modeling
- Innovation Idea-Markets: Meeting the Idea-Generation Needs of a Full-Scale PLM Implementation
- PLM CrossFunctional Certification and Training:Efficacy and Competency Profile
- Energy and Sustainability Models in PLM
- Highly Interactive Remote Visualization through Image Generalization
- Cutting Edge Visualization for Product Lifecycle Management
- Reliability Management of Horizontal Axis Wind Turbines Using ModelBased Simulations to Propagate Systemic Loading Uncertainties

Proprietary Projects

- Rolls Royce
- Boeing
- Daimler Chrysler
- Cummins



PLM Certificate Program

- Initially conceived and developed with Boeing
- Three 10 week classes covering NX, TC Eng, TC Mfg.
- 2 hour lecture via Adobe Connect and 2 hour virtual lab each week.
- Offered through the Purdue Continuing Education Program
- <http://www2.tech.purdue.edu/centers/plm/index.html>
- Phase 2 launched in September.
- Our thanks to Siemens PLM Software.

Additional Funding

- \$274,000 SME award for the development of Curriculum Modules in PLM(Completed).
- \$1,500,000 Phase 2 NSF grant to establish Regional PLM Center of Excellence and coordinate distribution of PLM modules to leading Community Colleges. (In Product Build Stage). Phase 3 proposal is under review.
- Prof. Elisha Sacks - \$600,000 from NSF.
- Prof. Nate Hartman - \$35,000 from NIST.

Industrial Partners Membership

- Executive Membership - \$50,000
Associate Membership - \$15,000
- Joint projects developed between the Partner and the PLM Center of Excellence
 - Cost dependent on scope of the project
- Intellectual Property Agreement
 - General PLM Center of Excellence agreement signed by all members
 - Specific IP agreements for company projects when required

So what else have I been doing?

- Director of Strategic Relations – College of Science
- Internships and Student Opportunities
- Other Centers
 - GMIG
 - C3Bio
 - ISI
 - CERIAS
 - CSCP