YUCHENG LIU

Department Head and Professor, Ph.D., P.E.
Duane Sander Endowed Professor
ASME Fellow, SAE Fellow

Department of Mechanical Engineering
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BIOGRAPHICAL DATA

EDUCATION

2002-2005 Doctor of Philosophy degree in Mechanical Engineering granted August 2005
University of Louisville, Louisville, Kentucky
Research area: advanced product design and development/finite element methods

2000-2002 Master of Science degree in Mechanical Engineering granted August 2003
University of Louisville, Louisville, Kentucky
Research area: computer aided design/finite element methods

1993-1997 Bachelor of Science degree in Mechanical Engineering granted July 1997
Hefei University of Technology, Hefei, Anhui, China
Major: mechanical and computational design

EMPLOYMENT

2021-present Department Head and Professor, Department of Mechanical Engineering, Jerome J. Lohr College of Engineering, South Dakota State University, Brookings, South Dakota

2021-present Duane Sander Endowed Professor, Jerome J. Lohr College of Engineering, South Dakota State University, Brookings, South Dakota

2019-2021 Full Professor, Department of Mechanical Engineering, James Worth Bagley College of Engineering, Mississippi State University, Mississippi State, Mississippi

2018-2021 Jack Hatcher Chair in Engineering Entrepreneurship, James Worth Bagley College of Engineering, Mississippi State University, Mississippi State, Mississippi

2016-2021 Graduate Coordinator, Department of Mechanical Engineering, James Worth Bagley College of Engineering, Mississippi State University, Mississippi State, Mississippi

2014-2019 Associate Professor, Department of Mechanical Engineering, James Worth Bagley College of Engineering, Mississippi State University, Mississippi State, Mississippi

2014-2021 Affiliate Faculty, Center for Advanced Vehicular Systems (CAVS), Mississippi State University, Mississippi State, Mississippi

2014-2021 Affiliate Faculty, High Performance Computing Collaboratory (HPC^2), Mississippi State University, Mississippi State, Mississippi

2012-2013 Fellow of Computation and Visualization Enterprise (CAVE), Louisiana Immersive Technologies Enterprise (LITE), University of Louisiana at Lafayette, Lafayette, Louisiana

2012-2013 Graduate Coordinator, Department of Mechanical Engineering, College of Engineering, University of Louisiana at Lafayette, Lafayette, Louisiana

2009-2014 Assistant Professor, Department of Mechanical Engineering, College of Engineering, University of Louisiana at Lafayette, Lafayette, Louisiana

2005-2008 Post-Doctoral Research Associate, Department of Mechanical Engineering, J. B. Speed School of Engineering, University of Louisville, Louisville, Kentucky

2000-2005 Research Assistant, Department of Mechanical Engineering, J. B. Speed Engineering School, University of Louisville, Louisville, Kentucky

1999-2000 Manufacturing Engineer, Shanghai Yanfeng Automobile Trim Products Co., Ltd, Shanghai, China

1997-1999 Product Engineer, Shanghai Yanfeng Automobile Trim Products Co., Ltd, Shanghai, China

OTHER APPOINTMENTS

2015-2018 Guesting Professor, Hefei University of Technology, Hefei, Anhui, China

2015 Summer Senior Visiting Scholar, State Key Laboratory of Advanced Design and Manufacturing for Vehicle Body, Hunan University, Changsha, Hunan, China

AWARDS AND HONORS

2021	Inaugural Holder of Duane E. Sander Endowed Professor in Engineering, Innovation, and Entrepreneurship, South Dakota State University
2021	Second Place, "Championing Change" category of Wasatch Aerospace and Systems Engineering Mini Conference
2021	Bagley College of Engineering Service Award, MSU
2020	Forest R. McFarland Award, Society of Automotive Engineers
2019	Elected Society of Automotive Engineers (SAE) Fellow
2018	ISET B. N. Gupta Award, Indian Society of Earthquake Technology (ISET)
2018	Jack Hatcher Endowed Chair in Engineering Entrepreneurship, MSU
2018	Faculty Research Award, Mississippi State University
2018	Bagley College of Engineering Faculty Research Award, MSU
2017	Southeastern Conference Visiting Faculty Travel Grant, MSU
2017	Elected American Society of Mechanical Engineers (ASME) Fellow
2016	NASA/EPSCoR Travel Funds, Mississippi Space Grant Consortium
2016	Mechanical Engineering Outstanding Senior Faculty Research Award, MSU
2014	Research Enhancement Award, Louisiana Space Consortium
2013	Certificate of Achievement in Research & Sponsored Activities, UL Lafayette
2013	Junior Faculty Researcher of the Year, College of Engineering, UL Lafayette
2012	Summer Research Award, University of Louisiana at Lafayette
2011	Research Enhancement Award, Louisiana Space Consortium
2010	Research Enhancement Award, Louisiana Space Consortium
2010	Honorary Fellow, Australian Institute of High Energetic Materials
2010	EPSCoR Neutron Travel Fellowship, University of Tennessee
2009-present	Academic Keys Who's Who in Engineering Academia
2002-2004	Grosscurth Fellowship, University of Louisville
2001	Hsing Chuang Award for Excellence in Graduate Study, University of Louisville
1995-1996	Third Place Scholarship, Hefei University of Technology
1995-1996	Second Place Scholarship, Hefei University of Technology
1993-1994	Outstanding Student Award, Hefei University of Technology
1993-1994	Third Place Scholarship, Hefei University of Technology
1993-1994	Third Place Scholarship, Hefei University of Technology

PROFESSIONAL DEVELOPMENT AND CERTIFICATES

- Strategic Plan Implementation Workshop, SDSU, June 8 – August 9, 2023
- Imagine 2023 Summer Leadership Series, SDSU, June 7 – August 8, 2022
- ASEE DELTA (Developing Engineering Leaders of Tomorrow in the Academy) New Department Leaders Institute, January 4 – 6, 2022.
- Research, Scholarship, and Creative Activity (RSCA) Leadership Peer-Mentor Cohort, South Dakota State University, Fall 2021.
- William L. Giles Faculty Leadership Program, Mississippi State University, 2018 – 2019.
- Certificate of Completion: ABET Program Evaluator Candidate (PEVC) Training, Baltimore, MD, May 5 – 6, 2018.
- NSF Division of Materials Research Principal Investigator Workshop, Arlington, VA, June 7 – 9, 2017.
- Mathematical Modeling of 2D Materials Workshop, Institute for Mathematics and Its

Applications, University of Minnesota, Minneapolis, MN, May 16 – 19, 2017.
- Certificate of Completion: Best Practices in Online Instruction, Center for Teaching and Learning, Mississippi State University, October 2016.
- Certificate of Completion: NCEES Chief Proctor Training, Atlanta, GA, March 9, 2013.
- 2011 CAREER Award Regional Forum, Louisiana State University, Baton Rouge, LA, November 8 – 9, 2011. (Nominated by the VP Research of UL Lafayette)
- ASME District E Management Training Seminar (MTS), Dallas, TX, September 23 – 24, 2010.
- Vulcan at the SNS Workshop, Oak Ridge National Laboratory, Oak Ridge, TN, January 21 – 22, 2010.

PROFESSIONAL REGISTRATION

Professional Engineer (Mechanical Engineering), registered in Ohio State (71346) (Since 2006)

PROFESSIONAL AFFILIATIONS

Fellow, American Society of Mechanical Engineers (ASME) (Since 2007, Fellow since 2017)
Fellow, Society of Automotive Engineers (SAE) (Since 2007, Fellow since 2019)
Member, American Society for Engineering Education (ASEE) (Since 2011)
Member, American Association for the Advancement of Science (AAAS) (Since 2015)
Member, Council of Chinese American Deans and Presidents (CCADP) (Since 2021)
Member, International Association for Computational Mechanics (IACM) (2014-2015)
Member, United States Association for Computational Mechanics (USACM) (2014-2015)
Member, American Academy of Mechanics (AAM) (2014-2015)

SERVICE

PROFESSIONAL SERVICE

- Member, Awards Committee, ASEE Mechanical Engineering Division, 2023 – 2026
- Chair-elect, ASEE North Midwest Section, 2023 – 2024
- Panelist, Engineering Research Initiation Proposal Review Panel, NSF Mechanics of Materials and Structures Program, 2023
- Delegate to ASEE Commission on Diversity, Equity and Inclusion (CDEI), 2022 –
- Secretary, ASEE Graduate Studies Division, 2022 – 2024
- Panelist, Unsolicited Proposal Review Panel on Hard Materials & Computational Methods, NSF Mechanics of Materials and Structures Program, 2022
- Member, ASEE Education Research and Methods (ERM) Best Paper Committee, 2022
- Chair of Professional Skills Division, ASEE Southeastern Section, 2021
- Panelist, Phase I: Advanced Materials & Energy Harvesting Devices and Systems Panel, NSF SBIR Program, 2020
- Panelist for NSF Graduate Research Fellowship Program, 2017, 2019, 2020
- Vice Chair of Professional Skills Division, ASEE Southeastern Section, 2020 – 2021
- Secretary of Professional Skills Division, ASEE Southeastern Section, 2019 – 2020
- Panelist, Phase I: Structural and Building Materials Panel, NSF SBIR/STTR Program, 2019

- Panelist, Phase I: Metals, Ceramics and Advanced Materials Panel, NSF SBIR/STTR Program, 2018
- Member, SAE International Technical Standards System Safety Technical Committee (G-48), 2018 –
- Panelist, Unsolicited Proposal Review Panel on Constitutive Behavior, NSF Mechanics of Materials and Structures Program, 2018
- Member, ASME Subcommittee on Verification and Validation in Computational Modeling of Advanced Manufacturing, 2016 –
- Panelist for SMART Scholarship Evaluation Panel, Department of Defense, 2016
- Chief Proctor, NCEES Examination, Lafayette, LA, 2012 – 2013
- Panelist for NSF Engineering Design Innovation Program, 2012
- Assistant Chief Proctor, NCEES Examination, Lafayette, LA, 2011
- Speaker, Engineering & Technology Summer Camp, Lafayette, LA, 2010
- Member of WASET Scientific and Technical Committee on Natural and Applied Sciences

UNIVERSITY SERVICE

South Dakota State University

University

Member, Strategic Planning Goa1 1 Sub-Committee, Achieve Excellence through Transformative Education, 2022 –
Member, Lohr Endowed Dean of the Jerome J. Lohr College of Engineering Search Committee, 2022

College

Chair, Mathematics and Statistics Department Head Search Committee, 2023 – 2024
Chair, Promotion & Tenure Committee, Jerome J. Lohr College of Engineering, 2023 – 2025
Member, Electrical Engineering and Computer Science Department Head Search Committee, 2023 – 2024
Member, Faculty Review Committee for the Distinguished Engineer Award, 2023
Member, Milton Nies Endowed Chair in Enterprise Management Search Committee, 2021 – 2022

Mississippi State University

University

Robert Holland Faculty Senator, Mississippi State University, 2021
Member, Faculty Grievance Committee, Robert Holland Faculty Senate, 2021
Member, Internal Review Committee for the Department of Electrical and Computer Engineering – Graduate Program, 2017

College

Member, Bagley College of Engineering's Endowed Faculty Grant Review Program, 2020 – 2021

Department

Vice Chair, Strategic Planning Committee, Mechanical Engineering Department, 2021
Chair, Student Competition Oversight Committee, Mechanical Engineering Department, 2020 – 2021
Chair, Promotion & Tenure Committee, Mechanical Engineering Department, 2019 – 2021
Chair, Faculty Search Committee, Mechanical Engineering Department, 2016 – 2021
Chair, Graduate Committee, Mechanical Engineering Department, 2016 – 2021
Leader, Solid Mechanics Research Group, Mechanical Engineering Department, 2021
Member, CAVS Endowed Chair Search Committee, 2019 – 2020
Advisor of Society of Automotive Engineers (SAE) Student Chapter, 2018 – 2021
Member, Strategic Planning Committee, Mechanical Engineering Department, 2016 – 2021
Member, Faculty Search Committee, Mechanical Engineering Department, 2014 – 2021
Member, Undergraduate Committee, Mechanical Engineering Department, 2014 – 2016
Member, Course Standardization Committee, Mechanical Engineering Department, 2014 – 2016
Member, PhD Qualifying Exam Task Group, Mechanical Engineering Department, 2014 – 2021

University of Louisiana at Lafayette

University

Member, Distance Learning Committee, 2013 – 2014
Member, Governmental Concerns Committee, 2012 – 2014
Member, Committee on Academic Affairs and Standards, 2012 – 2014
Faculty Senator, University of Louisiana at Lafayette, 2012 – 2014
Member, Student Evaluation of Instruction Committee, 2009 – 2012

Department

Coordinator, ABET Executive Committee, Mechanical Engineering Department, 2012 – 2014
Member, Faculty Search Committee, Mechanical Engineering Department, 2011 – 2014
Member, Curriculum Committee, Mechanical Engineering Department, 2011 – 2014
Member, Graduate Affairs Committee, Mechanical Engineering Department, 2009 – 2014
Member, Department of Mechanical Engineering Head Search Committee, 2009 – 2010
Advisor of American Society of Mechanical Engineers (ASME) Student Chapter, 2009 – 2014

EDITORSHIP

Editor

Computational Materials Science (review editor)	2023 –
Design, Analysis, and Assessment of Energy Absorbers, special issue of *Advances in Mechanical Engineering*, 2018 10(5)	
International Journal of Differential Equations (guest editor)	2015
Prudence Journal of Engineering and Technology Research	2013 – 2020

Editorial Board Member

Machines: Machine Design and Theory Section	2023 –
International Scholarly Research Notices	2013 – 2020

The Scientific World Journal	2013 – 2020
Information Sciences Letters	2013 – 2020
ISRN Applied Mathematics	2013 – 2014
Research Bulletin of the Australian Institute of High Energetic Materials	2010 – 2020
International Journal of Vehicle Structures & Systems	2009 –

REVIEWER

Funding Agencies

Engineering Research Initiation Program, National Science Foundation	2023 –
Maryland Industrial Partnerships Program	2022 –
Doctoral New Investigator Grant, ACS Petroleum Research Fund	2022 –
Mississippi Space Grant Consortium (MSSGC) Graduate Fellowship Program	2020 –
SBIR/STTR Program, National Science Foundation	2018 –
Mechanics of Materials and Structures Program, National Science Foundation	2018 –
EPSCoR Program, National Aeronautics and Space Administration	2017 –
Graduate Research Fellowship Program, National Science Foundation	2017 –
SMART Scholarship for Service Program, Department of Defense	2016 –
Advanced Research Projects Agency – Energy, Department of Energy	2015 –
Engineering Design Innovation Program, National Science Foundation	2011 –
National Energy Technology Laboratory, Department of Energy	2011 –

Books and Chapters

Multiscale Biomechanical Modeling of the Brain, Elsevier, 2020
Build Your Own Race Car (Proposal), SAE International, 2018
Problems and Solutions in Manufacturing for Engineers (Proposal), Springer UK, 2016
NMR Spectroscopy in the Undergraduate Curriculum, Volume 2, ACS Publications, 2015

Refereed Journals

Engineering Science and Technology	2024 –
Case Studies in Thermal Engineering	2024 –
Journal of Photonic Materials and Technology	2024 –
Advanced Engineering Informatics	2024 –
International Journal of Computer Applications in Technology	2024 –
Materials Characterization	2024 –
Buildings	2023 –
Journal of Applied Physics	2023 –
Journal of Applied Mathematics and Computational Mechanics	2023 –
The European Physical Journal Special Topics	2023 –
International Journal of Vehicle Safety	2023 –
Nanomaterials	2022 –
Mathematics	2022 –
International Journal of Environmental Research and Public Health	2022 –
Journal of Ocean Engineering and Science	2022 –
Acta Mechanica et Automatica	2022 –
Solar Energy	2021 –

SAE International Journal of Vehicle Dynamics, Stability, and NVH	2021 –
Results in Materials	2021 –
Measurement	2021 –
Processes	2021 –
Mechanical Systems and Signal Processing	2021 –
Materials Today Communications	2021 –
Crystals	2021 –
IET Renewable Power Generation	2021 –
Mechanism and Machine Theory	2021 –
Philosophical Magazine	2021 –
International Journal of Energy Research	2021 –
Composites Science and Technology	2021 –
Proceedings of IMechE, Part D: Journal of Automobile Engineering	2020 –
Journal of Physics and Chemistry Solids	2020 –
Applied Sciences	2020 –
Alexandria Engineering Journal	2020 –
Research in Science & Technological Education	2020 –
SAE International Journal of Transportation Safety	2020 –
Energy	2020 –
Multidiscipline Modeling in Materials and Structures	2020 –
Tribology International	2020 –
ASME Journal of Energy Resources Technology	2020 –
Water	2020 –
International Journal of Pressure Vessels and Piping	2020 –
Shock and Vibration	2019 –
Nuclear Engineering and Technology	2019 –
Journal of Renewable and Sustainable Energy	2019 –
Mathematical Problems in Engineering	2018 –
Journal of Manufacturing Processes	2018 –
MethodsX	2018 –
Applied Soft Computing	2018 –
Steel and Composites Structures, An International Journal	2018 –
Metallurgical and Materials Transactions A	2018 –
Journal of Materials Research and Technology	2018 –
Engineering Failure Analysis	2017 –
International Journal of Mechanical Engineering Education	2017 –
ASME Journal of Mechanical Design	2017 –
Ultrasonics	2017 –
Drinking Water Engineering and Science	2017 –
Iranian Journal of Science and Technology	2017 –
Journal of Composite Materials	2016 –
Sustainability	2016 –
Journal of Hydrodynamics, Series B	2016 –
Journal of Marine Science and Engineering	2016 –
Advances in Mechanical Engineering	2016 –
International Journal of Mechanics and Materials in Design	2015 –

Journal of Hydraulic Engineering	2015 –
IEEE/CAA Journal of Automatica Sinica	2015 –
Journal of Process Mechanical Engineering	2015 –
Applied Mathematical Modelling	2015 –
Modelling and Simulation in Materials Science and Engineering	2015 –
Advances in Engineering Software	2014 –
Ocean Engineering	2014 –
Engineering Structures	2014 –
International Journal of Marine Energy	2014 –
Neural Computing and Applications	2014 –
International Journal of Computational Methods in Engr. Sci. & Mechanics	2014 –
Finite Elements in Analysis and Design	2013 –
International Journal of Energy and Environmental Engineering	2013 –
E3 Journal of Scientific Research	2013 –
The Scientific World Journal	2013 –
Geologos	2013 –
Applied Mathematics & Information Sciences	2013 –
British Journal of Mathematics & Computer Science	2013 –
ISRN Applied Mathematics	2013 –
Information Sciences Letters	2013 –
Prudence Journal of Environmental Science Research	2013 –
British Journal of Applied Science & Technology	2013 –
Journal of Advanced Research	2013 –
Computational Materials Science	2013 –
Energies	2012 –
E3 Journal of Environmental Research and Management	2012 –
Fatigue and Fracture of Engineering Materials and Structures	2012 –
E3 Journal of Medical Research	2012 –
Engineering Computations	2012 –
Central European Journal of Engineering	2012 –
Journal of Mechanical Engineering Science	2011 –
E3 Journal of Energy Oil and Gas Research	2011 –
Journal of Engineering Design	2011 –
Zeitschrift fur Naturforschung A – Physical Sciences	2011 –
Applications and Applied Mathematics: An International Journal	2011 –
Computers & Mathematics with Applications	2011 –
International Journal for Numerical Methods for Heat and Fluid Flow	2010 –
Journal of the Franklin Institute	2010 –
International Journal of Thermal Sciences	2010 –
European Journal of Engineering Education	2010 –
Mathematic Scientific Journal	2010 –
Experimental Techniques	2009 –
SAE Transactions	2009 –
International Journal of Vehicle Structures & Systems	2009 –
International Journal of Computer Aided Engineering and Technology	2009 –
EURASIP Journal on Advances in Signal Processing	2009 –

International Journal of Computer Mathematics	2008 –
International Journal of Crashworthiness	2008 –
Journal of Computational and Applied Mathematics	2008 –
Computer Applications in Engineering and Education	2008 –
International Journal of Materials and Product Technology	2007 –
International Journal of Heavy Vehicle Systems	2007 –
International Journal of Design Engineering	2007 –
Thin-Walled Structures	2006 –

Conferences

- ASME International Mechanical Engineering Congress & Exposition (IMECE), 2009 –
- ASME Joint US-European Fluids Engineering Division Summer Meeting and International Conference on Nanochannels, Microchannels, and Minichannels, 2014 –
- ASEE Annual Conference & Exposition, 2018 –
- ASEE Southeastern Section Annual Conference, 2010 –
- ASEE Gulf Southwest Section Annual Conference, 2013 –
- SAE World Congress Experience, 2015 –
- SAE AeroTech Americas, 2019 –
- SAE International Conference on Advances in Design, Materials, Manufacturing and Surface Engineering for Mobility, 2023 –
- SME North American Manufacturing Research Conference (NAMRC), 2010 –
- IEEE Frontiers in Education, 2023 –
- International Automotive CAE Conference – Road to Virtual World 2024, 2024
- International Electronic Conference on Machines and Applications (IECMA), 2024 –
- International Conference on Mechanical, Electric and Industrial Engineering (MEIE), 2020 –
- International Conference on Automotive Engineering (ICAE), 2014 –
- Industrial Energy Technology Conference (IETC), 2014 –
- IASTED International Conference on Modeling and Simulation, 2007 –

External P&T Reviewer

Dr. Liu has reviewed promotion and tenure packets for faculty from the University of Texas Rio Grande Valley, the University of Nevada, Reno, the University of North Texas, and the University of Tennessee at Chattanooga.

ORGANIZER AND CHAIR OF CONFERENCES/SESSIONS /WORKSHOPS

- Member, Event Committee for the 2nd International Electronic Conference on Machines and Applications, Virtual Meeting, June 18 – 20, 2024.
- Topic Co-Organizer and Session Chair, Computational Modeling and Simulation for Advanced Manufacturing, ASME 2023 International Mechanical Engineering Congress & Exposition, New Orleans, LA, USA, October 29 – November 2, 2023.
- Member, Organizing Committee for the 2023 ASEE North Midwest Section Conference, South Dakota State University, Brookings, SD, USA, October 4 – 6, 2023.
- Moderator, 2023 ASEE Annual Conference & Exposition, Baltimore, MD, USA, June 25 – 28, 2023.

- Topic Co-Organizer and Session Chair, Computational Modeling and Simulation for Advanced Manufacturing, ASME 2022 International Mechanical Engineering Congress & Exposition, Columbus, OH, USA, October 30 – November 2, 2022.
- Moderator, 2022 ASEE Annual Conference, Minneapolis, MN, USA, June 26 – 29, 2022.
- Volunteer, Helen Plants Outstanding Conference Special Session Award, 2021 Frontiers in Education Conference (FIE 2021), Lincoln, NE, USA, October 14, 2021.
- Moderator, FIE 2021, Lincoln, NE, USA, October 13 – 16, 2021.
- Moderator, 2021 ASEE Annual Conference & Exposition, Virtual Meeting, July 26 – 29, 2021.
- Moderator, ASEE SE Section Annual Conference, Virtual Conference, March 7 – 10, 2021.
- Honorary Co-Chair and Organizing Committee Member, the Global Conference on Manufacture and Industrial Engineering (GCMIE-2021), Brussels, Belgium, September 13 – 15, 2021.
- Topic Co-Organizer and Session Chair, Computational Modeling and Simulation for Advanced Manufacturing, ASME 2020 International Mechanical Engineering Congress & Exposition, Virtual Conference, Online, November 16 – 19, 2020.
- Moderator, 2020 Frontiers in Education Conference (FIE 2020), Uppsala, Sweden, October 21 – 24, 2020.
- Member, Organizing Committee for the 2nd International Conference on Computational Methods and Applications in Engineering (ICCMAE 2020), Mississippi State University, MS, USA, May 7 – 9, 2020.
- Topic Co-Organizer and Session Chair, Computational Modeling and Simulation for Advanced Manufacturing, ASME 2019 International Mechanical Engineering Congress & Exposition, Salt Lake City, UT, USA, November 8 – 14, 2019.
- Organizer, Additive Manufacturing Session, SAE 2019 AeroTech Europe, Bordeaux, France, September 24 – 26, 2019.
- Panelist, Additive Manufacturing Panel on Workforce Development and Training, SAE 2019 AeroTech Americas, Charleston, SC, USA, March 27, 2019.
- Committee Member, Additive Manufacturing for Aerospace and Defense Session, SAE 2019 AeroTech Americas, Charleston, SC, USA, March 26 – 28, 2019.
- Topic Co-Organizer and Session Chair, Computational Modeling and Simulation for Advanced Manufacturing, ASME 2018 International Mechanical Engineering Congress & Exposition, Pittsburgh, PA, USA, November 9 – 15, 2018.
- Session Chair, ASEE SE Section Annual Conference, Embry-Riddle Aeronautical University, Daytona Beach, FL, USA, March 4 – 6, 2018.
- Member, ASME 2017 Verification and Validation Symposium Organizing Committee, Las Vegas, NV, USA, May 3 – 5, 2017.
- Session Organizer, ASME 2016 International Mechanical Engineering Congress & Exposition, Phoenix, AZ, USA, November 11 – 17, 2016.
- Session Chair, ASME 2015 International Mechanical Engineering Congress & Exposition, Houston, TX, USA, November 13 – 19, 2015.
- Organizer, Ocean Wave Energy Workshop, Lafayette, LA, June 15, 2012.
- Session Chair, 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
- Session Chair, 2012 IEEE Green Technologies Conference (GTC'12), Tulsa, OK, USA, April 19 – 20, 2012.

- Session Chair, 2011 Hawaii University International Conferences (HUIC) on Mathematics & Engineering Conference, Honolulu, HI, USA, June 13 – June 15, 2011.
- Co-Organizer, Steam Lab Revitalization Project Workshop, Lafayette, LA, August 20, 2010.

OUTREACH AND COMMUNITY SERVICE

- Volunteer of SoDak Spurs Soccer Club, 2023 –
- Speaker, STEM Presentation at Tupelo Middle School, Tupelo, MS, 2016
- Speaker, Engineering & Technology Summer Camp, Lafayette, LA, 2010

MEDIA COVERAGE

- Profiled on The Brookings Register, 09/02/2021, 09/09/2021
- Research featured on www.hispanicbusiness.com (07/26/2013)
- Interviewed by Colonel Masson, ScienceNews Radio Network, 02/07/2011, 02/16/2012.

CONSULTING ACTIVITIES

Diomedia Industries, LLC	2016 –
Systems Automotive Interiors	2014 –
United International Corporation	2011 –
2M-Tek Inc.	2009 –

SELECTED SERVICE ACCOMPLISHMENTS

- The ranking of the SDSU Baja SAE team improved from 53rd out of 56 teams (5th percentile) in 2021 competition to 56th out of 90 teams (38th percentile) in 2022 competition, 49th out of 86 teams (43rd percentile) in 2023 competition, and 47th out of 110 teams (57th percentile) in 2024 competition.
- The ranking of the MSU Formula SAE team improved from 94th out of 120 teams (78th percentile) in 2018 competition to 18th out of 37 teams (49th percentile) in 2021 competition.
- The ranking of the MSU Baja SAE team improved from 72nd out of 96 teams (75th percentile) in 2019 competition to 33rd out of 60 teams (45th percentile) in 2021 competition.
- The Mechanical Engineering Master of Science Distance Program was ranked 9th nationally in the "15 Best Online Mechanical Engineering Degree Programs in 2021" released by Best Value Schools.
- The Mechanical Engineering graduate enrollment increased from 102 students in Fall 2016 to 142 in Spring 2021, which represents a 39% increase. The number of female graduate students increased from 17 to 29, and the number of minority graduate students increased from 11 to 15 during the same period.
- The Mechanical Engineering Master of Science Distance Program was ranked 3rd nationally in 2019 according to the "25 Best Online Master's in Mechanical Engineering" released by Online Schools Report.
- The Mechanical Engineering Master of Science Distance Program was ranked 6th nationally in 2018 according to SR Education Group.
- Obtained $55,000 Graduate Recruitment Grant and Fellowship Award as the ME Graduate

Coordinator at Mississippi State University.
- Increased UL Lafayette's ASME student membership by 80% since becoming the ASME advisor in 2009.
- Obtained $500 Master's Program Recruitment Assistance Grant as the MCHE Graduate Coordinator at UL Lafayette.

RESEARCH

RESEARCH INTERESTS

- Material multiscale modeling and simulation
- High strain rate phenomena and penetration mechanics
- Computer-aided design and engineering
- Finite element analysis
- Computational fluid dynamics
- Crashworthiness analysis
- Structural mechanics
- Kinematics and dynamics
- Optimum design
- Mechanical and advanced machine design
- Marine and hydrokinetic system design
- Vehicle system design and analysis
- Development of interactive design software
- Applied mathematics

PUBLICATIONS (**TOTAL**: **5** books, **8** chapters, **2** patents, **145** journal articles, and **102** conference and technical papers)

Books and Chapters

1. He, G. and **Liu, Yucheng**, "Development of A Low-Cost Vibration Damper Dynamometer for Suspension Damper Testing", in *Vibration Control of Structures*, IntechOpen, London, United Kingdom, 2022.
2. **Liu, Yucheng**, *Aerospace Structures and Materials*, Frontiers in Aerospace Science, Vol. 1, Bentham Science Publishers Ltd., Sharjah, United Arab Emirates, 2016 (Edited Book).
3. Bi, X.-G. and **Liu, Yucheng**, "An Analytical and Experimental Investigation into Vibratory Force for Aircraft Wings", Chapter 2 in *Aerospace Structures and Materials*, Bentham Science Publishers Ltd., Sharjah, United Arab Emirates, 2016.
4. Dou, Y.-Q. and **Liu, Yucheng**, "Computational and Analytical Investigation of Lateral Impact Behavior of Pressurized Pipelines", Chapter 3 in *Aerospace Structures and Materials*, Bentham Science Publishers Ltd., Sharjah, United Arab Emirates, 2016.
5. **Liu, Yucheng**, *Structural Analysis and Modelling: Research and Development*, Nova Science Publishers, Inc., Hauppauge, NY, USA, 2013 (Edited Book).
6. Liu, Y.-M., Woo, H.-J., and **Liu, Yucheng**, "Molecular Basis for Mechanical Functions of

Molecular Motor Myosin", Chapter 5 in *Structural Analysis and Modelling: Research and Development*, Nova Science Publishers, Inc., Hauppauge, NY, USA, 2013.

7. **Liu, Yucheng** and Wang, Q.-K., "Computational Modeling and Strength Analysis of Stiffened Plates with Arbitrarily Oriented Stiffeners", Chapter 9 in *Structural Analysis and Modelling: Research and Development*, Nova Science Publishers, Inc., Hauppauge, NY, USA, 2013.
8. **Liu, Yucheng**, Alidoust, S., and Qi, B., "Prototyping and Experimental Evaluation of an Air Filtration System", Chapter 4 in *Refrigeration Systems, Design Technologies and Developments*, Edited by D. Alda and D. Ciarlo, Nova Science Publishers, Inc., Hauppauge, NY, USA, 2013.
9. Liu, W.-L. and **Liu, Yucheng**, *An Introduction to Earthquake Prediction*, LAP Lambert Academic Publishing, Saarbrucken, Germany, 2012.
10. Peymani, F. Y., Ghanbary, S. A., **Liu, Yucheng**, and Hayatdavoudi, A. Z., "CFD Simulation of Phase Particle Entrapment", Chapter 7 in *Engineering Applications of Computational Fluid Dynamics*, Edited by Maher A. R. Sadiq Al-Baghdadi, International Energy and Environment Foundation, 2011 pp. 285 – 318.
11. **Liu, Yucheng**, *Development of Simplified Crash Computer Models for Thin-Walled Beams*, LAP Lambert Academic Publishing, Koln, Germany, 2009.
12. **Liu, Yucheng**, *Simplified Modeling for Crashworthiness Analysis: Vehicle Chassis*, VDM-Verlag, Saarbrucken, Germany, 2008.
13. **Liu, Yucheng** and Day, M. L., "Axial Crushing of Thin-Walled Tubes with Octagonal Section: Modeling and Design", Chapter 25 in *Advances in Computational Algorithms and Data Analysis*, Edited by S.-L. Ao, B. B. Rieger, and S.-S. Chen, Springer Netherlands, 2008.

Patents

1. Burch, V., R. F., Abdelwahed, S., Ball, J. E., Doude, M., Gafford, J. R., Hannis, T. J., **Liu, Yucheng**, Mazzola, M. S., McKinney, H., "Enhanced Systems, Apparatus, and Methods for Improved Automated and Autonomous Operation of Logistic Ground Support Equipment", Patent No. US11157011, October 2021.
2. Ball, J. E., Burch, V., R. F., Cagle, L. D., Davenport, C. S., Gafford, J. R., Hannis, T. J., Hegman, A. R., LeClair, A. M., **Liu, Yucheng**, Mazzola, M. S., McKinney, H. G., Reza, T., Shi, J., Wei, P., and Iacomini, D. W., "Systems and Methods for Enhanced Collision Avoidance on Logistics Ground Support Equipment Using Multi-Sensor Detection Fusion", Patent No. US10761538, September 2020.

Refereed Journals

Published or Accepted

1. Foss, M., **Liu, Yucheng**, and Yarahmadian, S., "An Examination of Learning Using Fourier Analysis of Mathematical Models of Consciousness", *International Journal on Engineering, Science and Technology*, 6(3), 2024, 236 – 250.
2. Handler, E. S., Yadollahi, A., **Liu, Yucheng**, and Thompson, S. M., "Determining the Effects of Inter-Layer Time Interval in Powder-Fed Laser-Directed Energy Deposition on the Microstructure of Inconel 718 via *In-Situ* Thermal Monitoring", *Materials*, 17(3), 2024, 538

(15 pages).

3. Gan, Y.-J., Qiu, G.-X., Yan, C.-Q., Zeng, Z.-X., Qin, B.-Y., Bi, X.-G., and **Liu, Yucheng**, "Numerical Analysis on the Effect of the Conduction Band Offset in Dion-Jacobson Perovskite Solar Cells", *Energies*, 16, 2023, 7889 (13 pages).
4. Liu, Y.-M., Hall, M. B., Gallo, A. A., **Liu, Yucheng**, and Johnson, B. R., "QM Evaluation of the Intramolecular Aromatic π-π Interactions of Ir(I) Complex Transition States", *Journal of Molecular Structure*, 1291, 2023, 135907 (5 pages).
5. Gan, Y.-J., Qiu, G.-X., Qin, B.-Y., Bi, X.-G., **Liu, Yucheng**, Nie, G.-C., Ning, W.-L., and Yang, R.-Z., "Numerical Analysis of Stable $(FAPbI_3)_{0.85}(MAPbBr_3)_{0.15}$-based perovskite solar cell with TiO2/ZnO double electron layer", *Nanomaterials*, 13, 2023, 1313 (23 pages).
6. Wang, S.-S., Deng, X.-Q., Feng, H.-L., Ren, K.-Q., Li, F., and **Liu, Yucheng**, "Dynamic Simulation Analysis and Experimental Study of an Industrial Robot with Novel Joint Reducers", *Multibody System Dynamics*, 57, 2023, 107 – 131.
7. Foss, M., **Liu, Yucheng**, and Yarahmadian, S., "An Evaluation of Mathematical Models and Stability Analysis of Learning Based on Reaction Kinetics", *International Journal on Engineering, Science and Technology*, 4(4), 2022, 322 – 343.
8. Berthelson, P., Ghassemi, P., Wood, J. W., **Liu, Yucheng**, Al-Graitti, A. J., Jones, M. D., Chowdhury, S., and Prabhu, R. K., "Evaluation of Occupant Neck Injury Response to Varied Impact Conditions using a Finite Element-Mathematical Surrogate Modeling Approach", *International Journal of Crashworthiness*, 27(6), 2022, 1726 – 1742.
9. Deng, X.-Q., Du, Z.-F., Feng, H.-L., Wang, S.-S., Luo, H., and **Liu, Yucheng**, "Investigation on the Modeling and Reconstruction of Head Injury Accident Using ABAQUS/Explicit", *Bioengineering*, 9, 2022, 723.
10. Foss, M., **Liu, Yucheng**, and Yarahmadian, S., "Project-Based Learning in Engineering Education in a Virtual Setting: A Case Study on Materials and Manufacturing Process and Applied Statistics", *International Journal of Engineering Education*, 39(5A), 2022, 1377-1388.
11. Huang, Y.-Z., Bi, X.-G., **Liu, Yucheng**, and Li, Y.-X., "A Novel Hyperchaos-Based Image Encryption Algorithm with Two Scrambling-Diffusion Operations", *Complexity*, 2022, 8765268 (15 pages).
12. Gan, Y.-J., Zhao, D., Qin, B.-Y., Bi, X.-G., **Liu, Yucheng**, Ning, W.-L., Yang, R.-Z., and Jiang, Q.-B., "Numerical Simulation of High-Performance $CsPbI_3/FAPbI_3$ Heterojunction Perovskite Solar Cell", *Energies*, 15(19), 2022, 7301 (18 pages).
13. He, G., **Liu, Yucheng**, Lacy Jr., T., Horstemeyer, M. F., "A Historical Review of the Traditional Methods and the Internal State Variable Theory for Modeling Composite Materials", *Mechanics of Advanced Materials and Structures*, 29(18), 2022, 2617-2638.
14. Chen, L., Wang, Z., Yang, W.-H., Xiang, L.-Y., Wang, X., Zhao, Y.-J., Xiao, Y.-H., Liu, P.-W., **Liu, Yucheng**, Banu, M., and Zikanov, O., "Multi-Input Convolutional Network for Ultrafast Simulation of Field Evolvement", *Patterns*, 3(6), 2022, 100464 (15 pages).
15. Reeves, J., **Liu, Yucheng**, Hammi, Y., Dickel, D., Stone, T., and Bounds, C., "Automation and High-Speed Forming of Thin Layer Composite", *International Journal of Engineering Science Invention*, 11(3), 2022, pp. 34 – 54.

16. He, G., Fan, L., and **Liu, Yucheng**, "Mesoscale Simulation-Based Parametric Study of Damage Potential in Brain Tissue Using Hyperelastic and Internal State Variable Models", *ASME Journal of Biomechanical Engineering*, 144(7), 2022, 071005 (9 pages). (This paper was selected as an editor's choice paper for 2021.)
17. Dimitrov, N., **Liu, Yucheng**, and Horstemeyer, M. F., "An Electroplastic Internal State Variable (ISV) Model for Nonferromagnetic Ductile Metals", *Mechanics of Advanced Materials and Structures*, 29(5), 2022, pp. 761 – 772.
18. Dimitrov, N., **Liu, Yucheng**, and Horstemeyer, M. F., "Electroplasticity: A Review of Mechanisms in Electro-Mechanical Coupling of Ductile Metals", *Mechanics of Advanced Materials and Structures*, 29(5), 2022, pp. 705 – 716.
19. **Liu, Yucheng**, Whitaker, S., Hayes, C., Logsdon, J., McAfee, L., and Parker, R., "Establishment of an Experimental-Computational Framework for Promoting Project-Based Learning for Vibration and Controls Education", *International Journal of Mechanical Engineering Education*, 50(1), 2022, pp. 158 – 175.
20. Foss, M. and **Liu, Yucheng**, "Creating Solutions through Project-Based and Experimental Learning: A Case Study of the Concept Center", *International Journal of Engineering Education*, 37(6), 2021, pp. 1630 – 1642.
21. Yang, W.-H., Wang, Z., Yang, T.-N., He, L., Song, X., **Liu, Yucheng**, and Chen, L., "Exploration of the Underlying Space in Microscopic Images via Deep Learning for Additively Manufactured Piezoceramics", *ACS Applied Materials & Interfaces*, 13, 2021, pp. 53439 – 53453.
22. Reeves, J., Kim, D., **Liu, Yucheng**, and Hammi, Y., "Finite Element Analysis of End Effector for an Automated Equipment of High-Speed Forming of Thin-Layered Composite Materials", *International Journal of Science and Engineering Applications*, 10(11), 2021, pp. 152 – 162.
23. Li, X.-H., Li, Y.-C., Bi, X.-G., and **Liu, Yucheng**, "A Combined Computational-Experimental Study of LNG Vaporizers Based on Thermal-Solid Coupling", *Automotive and Engine Technology*, 6, 2021, pp. 191 – 202.
24. Dimitrov, N., **Liu, Yucheng**, and Horstemeyer, M. F., "Experimental Observation and Modeling of the Electroplastic Effect in Nonferromagnetic Ductile Metals", *Experimental Techniques*, 45, 2021, pp. 735 – 748.
25. Reeves, J., Williams, E., Plouffe, C., Staples, C., Carlucci, W., Smith, R., Hammi, Y., Whittington, W., Dickel, D., and **Liu, Yucheng**, "Combined Experimental and Computational Failure and Fatigue Analysis of a Socket Drive Adapter", *Journal of Failure Analysis and Prevention*, 21, 2021, pp. 1434 – 1444.
26. He, G., **Liu, Yucheng**, Hammi, Y., Bammann, D. J., and Horstemeyer, M. F., "A Combined Viscoelasticity-Viscoplasticity-Anisotropic Damage Model with Evolving Internal State Variables Applied to Fiber Reinforced Polymer Composites", *Mechanics of Advanced Materials and Structures*, 28(17), 2021, pp. 1775 – 1796.
27. Deng, X.-Q., Hong, L., Li, W., Wang, S.-S., and **Liu, Yucheng**, "High Precision Machining of ZC1 Worm Gear Drives with Large Modulus", *Mechanism and Machine Theory*, 165, 2021, 104437 (14 pages).

28. Luck Rogelio and **Liu, Yucheng**, "Continuous-Time and Discrete-Time Singular Value Decomposition of An Impulse Response Function", *Applied Mathematics*, 12, 2021, pp. 336 – 347.
29. Deng, X.-Q., Wang, J., Wang, S.-K., Wang, S.-S., **Liu, Yucheng**, Dou, Y.-Q., and He, G., "Investigation of Attapulgite Clay Crushing by Bionic Tooth Plates Inspired from Convex Structures on Body Surface of Dung Beetles", *International Journal of Design Engineering*, 10(1), 2021, pp. 45 – 71.
30. Brown, W. B. and **Liu, Yucheng**, "Modeling and Simulation of an Electric Vehicle with Independent Rear Motors to Estimate the Fuel Economy during EPA Drive Cycles", *International Journal of Vehicle Structures & Systems*, 13(1), 2021, pp. 46 – 52.
31. Chen, L., Yenusah, C. O., Ji, Y.-Z., **Liu, Yucheng**, Stone, T. W., Horstemeyer, M. F., Chen, L.-Q., "Three-Dimensional Phase-Field Simulation of γ" Precipitation Kinetics in Inconel 625 during Heat Treatment", *Computational Materials Science*, 187, 2021, 110123 (13 pages).
32. **Liu, Yucheng**, Stranburg, T., Chander, H., Bell, J., and Knight, A., "Additively Manufactured Metal Foot Orthotics: Lessons Learned from NSF I-Corps", *International Journal of Technology Transfer and Commercialisation*, 17(4), 2020, pp. 303 – 315.
33. Gan, Y.-J., Bi, X.-G., **Liu, Yucheng**, Li, Q.-L., Qin, B.-Y., Jiang, Q.-B., and Mo, P., "Numerical Investigation Energy Conversion Performance of Tin-Based Perovskite Solar Cells using Cell Capacitance Simulator", *Energies*, 13(22), 2020, 5907 (17 pages).
34. Deng, X.-Q., Wang, S.-S., Hammi, Y., Qian, L.-M., and **Liu, Yucheng**, "Study on the Influence of Key Design Parameters on Lubrication Characteristics of a Novel Gear System Applying Taguchi Method", *Structural and Multidisciplinary Optimization*, 62, 2020, pp. 2833 – 2847.
35. Deng, X.-Q., Wang, S.-S., Qian, L.-M., and **Liu, Yucheng**, "Simulation and Experimental Study of Influences of Shape of Roller on the Lubrication Performance of Precision Speed Reducer", *Engineering Applications of Computational Fluid Mechanics*, 14(1), 2020, pp. 1156 – 1172.
36. Dou, Y.-Q., **Liu, Yucheng**, Huddleston, B., Hammi, Y., and Horstemeyer, M. F., "A Molecular Dynamics Study of Effects of Crystal Orientation, Size Scale, and Strain Rate on Penetration Mechanisms of Monocrystalline Copper Subjected to Impact from A Nickel Penetrator at Very High Strain Rates", *Acta Mechanica*, 231, 2020, pp. 2173 – 2201.
37. Deng, X.-Q., Wang, J., Wang, S.-K., Wang, S.-S., **Liu, Yucheng**, and He, G., "A Comparison Study of Anti-Backlash Single- and Double-Roller Enveloping Hourglass Worm Gear", *Chinese Journal of Mechanical Engineering*, 56(3), 2020, pp. 88 – 95. (This paper was selected as the cover article; and was listed in the Frontrunner 5000 Top Articles in Outstanding S&T Journals of China by the Institute of Scientific and Technical Information of China)
38. Deng, X.-Q., Wang, S.-S., Wang, S.-K., Wang, J., **Liu, Yucheng**, Dou, Y.-Q., and He, G., "Lubrication Mechanism in Gearbox of High-Speed Railway Trains", *Journal of Advanced Mechanical Design, Systems, and Manufacturing* (*Machine Design & Tribology*), 14(4), 2020, JAMDSM0054 (19 pages).
39. Liu, P.-W., Wang, Z., Xiao, Y.-H., Lebensohn, R. A., **Liu, Yucheng**, Horstemeyer, M. F., Cui, X.-Y., and Chen, L., "Integration of Phase-Field Model and Crystal Plasticity for the Prediction

of Process-Structure-Property Relation of Additively Manufactured Metallic Materials", *International Journal of Plasticity*, 128, 2020, 102670 (21 pages).

40. Deng, X.-Q., Wang, S.-S., Hammi, Y., Qian, L.-M., and **Liu, Yucheng**, "A Combined Experimental and Computational Study of Lubrication mechanism of High Precision Reducer Adopting Gears Meshing with Complicated Space Surface Contact", *Tribology International*, 146, 2020, 106261 (13 pages).
41. Deng, X.-Q., Wang, J., Wang, S.-K., Wang, S.-S., **Liu, Yucheng**, and He, G., "An Optimal Process of Machining Complex Surfaces of Anti-Backlash Roller Enveloping Hourglass Worms", *Journal of Manufacturing Processes*, 49, 2020, pp. 472 – 480.
42. **Liu, Yucheng**, Baker, F., He, W.-P., and Lai, W., "Development, Assessment and Evaluation of Laboratory Experimentation for A Mechanical Vibrations and Controls Course", *International Journal of Mechanical Engineering Education*, 47(4), 2019, pp. 315 – 337.
43. He, G., **Liu, Yucheng**, Deng, X.-Q., and Fan, L., "Constitutive Modeling of Viscoelastic-Viscoplastic Behavior of Short Fiber Reinforced Polymers Coupled with Anisotropic Damage and Moisture Effect", *Acta Mechanica Sinica*, 35(3), 2019, pp. 495 – 506.
44. Dimitrov, N., **Liu, Yucheng**, and Horstemeyer, M. F., "On the Thermo-Mechanical Coupling of Bammann Plasticity-Damage Internal State Variable Model", *Acta Mechanica*, 230(5), 2019, pp. 1855 – 1868.
45. He, G., **Liu, Yucheng**, Bammann, D. J., Francis, D. K., Chandler, M. Q., and Horstemeyer, M. F., "A Multiphase Internal State Variable Model with Rate Equations for Predicting Elastothermoviscoplasticity and Damage of Fiber-Reinforced Polymer Composites", *Acta Mechanica*, 230(5), 2019, pp. 1745 – 1780.
46. Wang, X., Liu, P.-W., Ji, Y.-Z., **Liu, Yucheng**, Horstemeyer, M. F. and Chen, L., "Investigation on Microsegregation of IN718 Alloy during Additive Manufacturing via Integrated Phase-Field and Finite Element Modeling", *Journal of Materials Engineering and Performance*, 28(2), 2019, pp. 657 – 665. (This paper was selected as an editor's choice article for 2019.)
47. **Liu, Yucheng**, Davenport, C., Iacomini, D., Powell, B., Gafford, J., Ball, J. E., and Shi, J., "Development, Testing, and Assessment of A Kinematic Path-Following Model for Towing Vehicle Systems", *SAE International Journal of Vehicle Dynamics, Stability, and NVH*, 3(1), 2019, 10-03-01-0005 (14 pages).
48. Deng, X.-Q., Wang, J., Wang, S.-K., Wang, S.-S., Wang, J.-G., Li, S.-C., **Liu, Yucheng**, and He, G., "Investigation on the Backlash of Roller Enveloping Hourglass Worm Gear: Theoretical Analysis and Experiment", *ASME Journal of Mechanical Design*, 141(5), 2019, 053302 (11 pages).
49. Stranburg, T. N., **Liu, Yucheng**, Chander, H., and Knight, A., "Assessment of Performance of Nitinol-Based Arch Wedge Supports in Bearing Forces and Stresses due to Human Movement Using FEA", *International Journal for Computational Methods in Engineering Science & Mechanics*, 19(5), 2018, pp. 351 – 362.
50. **Liu, Yucheng**, Meghat, V., and Machen, B., "Design and Prototyping of A Debris Clean and Collection System for A Cylinder Block Assembly Conveying Line Following an Engineering Systems Design Approach", *International Journal of Design Engineering*, 8(1), 2018, pp. 1 –

18.

51. **Liu, Yucheng**, LeClair, A., Doude, M., and Burch, R. F., "Development of a Data Acquisition System for Autonomous Vehicle Systems", *International Journal of Vehicle Structures & Systems*, 10(4), 2018, pp. 251 – 256.
52. **Liu, Yucheng** and Baker, F., "A New Questionnaire for Assessment of a Mechanical Engineering Senior Design Class", *International Journal of Mechanical Engineering Education*, 46(4), 2018, pp. 289 – 301.
53. **Liu, Yucheng**, He, G., and Sippel, T., "Improve Heat Resistance of Composite Engine Cowlings using Ceramic Coating Materials, Experimental Design and Testing", *SAE International Journal of Aerospace*, 11(1), 2018, pp. 61 – 69.
54. **Liu, Yucheng**, Davenport, C., Gafford, J., Abdelwahed, S., Mazzola M., Ball, J. E., Doude, M., and Burch, R. F., "A Kinematic Modeling Framework for Prediction of Instantaneous Status of Towing Vehicle Systems", *SAE International Journal of Passenger Cars – Mechanical Systems*, 11(2), 2018, pp. 177 – 190.
55. He, G., Dou, Y.-Q., Guo, X., and **Liu, Yucheng**, "Computational Investigation of Effects of Grain Size on Ballistic Performance of Copper", *International Journal for Computational Methods in Engineering Science & Mechanics*, 19(1), 2018, pp. 1 – 10.
56. **Liu, Yucheng**, "Experimental and Computational Study of Effects of Viscosity of the Filter Media in A Developed Particulate Trapping System", *International Journal of Vehicle Structures & Systems*, 9(5), 2017, pp. 344 – 352.
57. **Liu, Yucheng**, Meghat, V., and Machen, B., "Design and Prototyping of an *In Situ* Robot to Clean a Cylinder Head Conveying Line Following an Engineering Systems Design Approach", *International Journal of Design Engineering*, 7(2), 2017, pp. 106 – 122.
58. **Liu, Yucheng**, "Renovation of a Mechanical Engineering Senior Design Class to An Industry-Tied and Team-Oriented Course", *European Journal of Engineering Education*, 42(6), 2017, pp. 800 – 811.
59. Dou, Y.-Q., Ricks, T. M., DuBien, J. L., Lacy, T. E., and **Liu, Yucheng**, "Response Surface Modeling to Facilitate the Parametric Study of Transversely Impacted Pressurized Pipelines", *Thin-Walled Structures*, 119, 2017, pp. 647 – 653.
60. Dou, Y.-Q. and **Liu, Yucheng**, "Analytical Investigation and Parametric Study of Lateral Impact Behavior of Pressurized Pipelines and Influence of Internal Pressure", *International Journal for Computational Methods in Engineering Science & Mechanics*, 18(4-5), 2017, pp. 266 – 276.
61. Liu, Y.-M., **Liu, Yucheng**, Junk, T., and Tzeng, N.-F., "Normal Mode Analysis of Isotopic Shifts in Raman Spectrum of TNT-d5", *Journal of Molecular Structure*, 1143(5), 2017, pp. 438 – 443.
62. **Liu, Yucheng**, Batte, J. A., Collins, Z. H., Bateman, J. N., Atkins, J., Davis, M., Salley, D., Bethel, C. L., Ball, J. E., and Archibald, C., "Mechanical Design, Prototyping, and Validation of a Martian Robot Mining System", *SAE International Journal of Passenger Cars – Mechanical Systems*, 10(1), 2017, pp. 1289-1297.
63. Dou, Y.-Q., **Liu, Yucheng**, Hammi, Y. and Whittington, W., "Application of a Microstructure-

Based ISV Plasticity Damage Model to Study Penetration Mechanics of Metals and Validation through Penetration Study of Aluminum", *Modelling and Simulation in Engineering*, 6189168, 2017, pp. 1 – 10.

64. Liu, Y.-M., Perkins, R., **Liu, Yucheng**, and Tzeng, N.-F., "Normal Mode and Experimental Analysis of TNT Raman Spectrum", *Journal of Molecular Structure*, 1133(5), 2017, pp. 217-225.
65. Pastor, J. and **Liu, Yucheng**, "Wave Climate Resource Analysis for Deployment of Wave Energy Conversion Technology", *Sustainability*, 8(12), 2016, pp. 1321-1334.
66. Setia, A., Sharma, V. and **Liu, Yucheng**, "Numerical Solution of Cauchy Singular Integral Equation with An Application to A Crack Problem", *Neural, Parallel, and Scientific Computations*, 23, 2015, pp. 387 – 392.
67. Akinyemi, O. S. and **Liu, Yucheng**, "CFD Modeling and Simulation of a Hydropower System in Generating Clean Electricity from Water Flow", *International Journal of Energy and Environmental Engineering*, 6(4), 2015, pp. 357 – 366.
68. Guiberteau, K. L., Lee, J., **Liu, Yucheng**, Dou, Y.-Q. and Kozman, T. A., "Wave Energy Converters and Design Considerations for Gulf of Mexico", *Distributed Generation and Alternative Energy Journal*, 30(4), 2015, pp. 55 – 76.
69. Akinyemi, O. S., Chambers, T. L. and **Liu, Yucheng**, "Evaluation of the Power Generation Capacity of Hydrokinetic Generator Device using Computational Analysis and Hydrodynamic Similitude", *Journal of Power and Energy Engineering*, 3(8), 2015, pp. 71 – 82.
70. Dou, Y.-Q. and **Liu, Yucheng**, "Computational Investigation of Lateral Impact Behavior of Pressurized Pipelines and Influence of Internal Pressure", *Thin-Walled Structures*, 95, 2015, pp. 40 – 47.
71. Liu, Y.-M., **Liu, Yucheng**, Muru, S., Tzeng, N.-F. and Srivastava, R. S., "Quantum Mechanics Study of Repulsive π-π Interaction and Flexibility of Phenyl Moiety in The Iron Azodioxide Complex for Catalysis of Allylic C-H Amination", *Journal of Molecular Structure*, 1097, 2015, pp. 226-230.
72. **Liu, Yucheng** and Peymani, F. Y., "Development and Computational Verification of an Analytical Model to Evaluate Performance of Paddle Wheel in Generating Electricity from Moving Fluid", *Distributed Generation and Alternative Energy Journal*, 30(1), 2015, pp. 58-80.
73. Liu, Y.-M., Junk, T., **Liu, Yucheng**, Tzeng, N.-F. and Perkins, R., "Benchmarking Quantum Mechanical Calculations with Experimental NMR Chemical Shifts of 2-HADNT", *Journal of Molecular Structure*, 1086, 2015, pp. 43 – 48.
74. Liu, Y.-M., **Liu, Yucheng**, Gallo, A. A., Knierim, K. D., Taylor, E. R. and Tzeng, N.-F., "Performances of DFT Methods Implemented in G09 for Simulations of the Dispersion-Dominated CH-π in Ligand-Protein Complex: A Case Study with Glycerol-GDH", *Journal of Molecular Structure*, 1084, 2015, pp. 223 – 228.
75. Pastor, J. and **Liu, Yucheng**, "Wave Energy Resource Analysis for Use in Wave Energy Conversion", *ASME Journal of Offshore Mechanics and Arctic Engineering*, 137(1), 2015, 011903 (9 pages).

76. Liu, Y.-M., Li, Z., Perkins, R., Junk, T. and **Liu, Yucheng**, "Quantum Mechanical and Experimental Analyses of TNT Metabolite 2-Hydroxylamino-2,4,6-Dinitrotoluene", *Journal of Molecular Structure*, 1080, 2015, pp. 145 – 152.
77. Peymani, Y. F., **Liu, Yucheng** and Hayatdavoudi, A., "CFD Simulation and Validation of Phase Particle Entrapment", *International Journal for Computational Methods in Engineering Science & Mechanics*, 15(5), 2014, pp. 438 – 447.
78. Setia, A., **Liu, Yucheng** and Vatsala, A. S., "Numerical Solution of Fractional Integro-Differential Equations with Nonlocal Boundary Conditions", *Journal of Fractional Calculus and Applications*, 5(2), 2014, pp. 155 – 165.
79. Pastor, J. and **Liu, Yucheng**, "Power Absorption Modeling and Optimization of a Point Absorbing Wave Energy Converter Using Numerical Method", *ASME Journal of Energy Resources Technology*, 136(2), 2014, 021207 (8 pages).
80. Pastor, J. and **Liu, Yucheng**, "Frequency and Time Domain Modeling & Power Output for a Heaving Point Absorber Wave Energy Converter", *International Journal of Energy and Environmental Engineering*, 5(2), 2014, pp. 1 – 13.
81. **Liu, Yucheng**, "Application of Legendre Polynomials in Solving Volterra Integral Equations of The Second Kind", *Applied Mathematics*, 3(5), 2013, pp. 157 – 159.
82. **Liu, Yucheng** and Glass, G. A., "Choose the Best Element Size to Yield Accurate FEA Results while Reduce FE Model's Complexity", *British Journal of Engineering and Technology*, 1(7), 2013, pp. 13 – 28.
83. **Liu, Yucheng** and Chand, M., "The Use of He's Variational Iteration Method for Solving the One-Dimensional Parabolic Equation with Non-Classical Boundary Conditions", *Applied Mathematical Sciences*, 7(85), 2013, pp. 4213 – 4221.
84. Liu, W.-L. and **Liu, Yucheng**, "General Approaches of Solving Seismic Source Dynamic Parameters and Q Value of the Medium", *Journal of Earth Sciences & Geotechnical Engineering*, 3(2), 2013, pp. 1 – 19.
85. **Liu, Yucheng** and Wang, Q.-K., "Strengthening Effects of Arbitrarily Stiffened Plates and Regularly Stiffened Plates Subject to Biaxial Stress", *Thin-Walled Structures*, 68, 2013, pp. 85 – 91.
86. **Liu, Yucheng** and Chand, M., "Development of an Efficient Numerical Method for Solving Heat Equations Applying He's Variational Iteration Method", *Applied Mathematical Sciences*, 7(2), 2013, pp. 93 – 102.
87. **Liu, Yucheng**, Cavalier, G., Pastor, J., Viera, R. J., Guillory, C., Judice, K., Guiberteau, K. and Kozman, T. A., "Design and Construction of a Wave Generation System to Model Ocean Conditions in the Gulf of Mexico", *International Journal of Energy and Technology*, 4(31), 2012, pp. 1 – 7.
88. Liu, W.-L. and **Liu, Yucheng**, "Commonly Used Earthquake Source Models", *Geologos*, 18(3), 2012, pp. 197 – 209.
89. **Liu, Yucheng**, Alidoust, S. and Qi, B., "Design, Modeling, and Evaluation of a Cost Effective Particulate Control System", *SAE International Journal of Aerospace*, 5(1), 2012, pp. 68 – 73.

90. Liu, W.-L. and **Liu, Yucheng**, "Group Features of Small Seismic Waveforms", *International Journal of Modern Engineering Research*, 5(2), 2012, pp. 2998 – 3004.
91. Guiberteau, K. L., **Liu, Yucheng**, Lee, J., and Kozman, T. A., "Investigation of Developing Wave Energy Technology in the Gulf of Mexico", *Distributed Generation and Alternative Energy Journal*, 27(4), 2012, pp. 36 – 52.
92. Kozman, T. A., **Liu, Yucheng**, Simon, W. E. and Guidry, J. J., "A Revitalized Steam Lab and Its Impacts on Both Industry and Engineering Education", *International Journal of Energy Engineering*, 2(4), 2012, pp. 114 – 118.
93. **Liu, Yucheng** and Chu, S. J., "Advance Application of Wind Technology and Wind Power in Louisiana", *International Journal of Energy Engineering*, 2(3), 2012, pp. 60 – 66.
94. Liu, W.-L. and **Liu, Yucheng**, "Trend Prediction of Seismicity in Lower Reaches of Yangtze River – Yellow Sea (Y-Y) Seismic Belt in 2011-2020", *Geosciences*, 2(3), 2012, pp. 39 – 50.
95. **Liu, Yucheng** and Wang, Q.-K., "Strengthening Effects of Stiffeners on Regular and Arbitrary Stiffened Plates", *Thin-Walled Structures*, 59, 2012, pp. 78 – 86.
96. Liu, W.-L. and **Liu, Yucheng**, "Variation of Focal Parameters and Medium Characteristics during Small Earthquakes", *Geosciences*, 2(2), 2012, pp. 14 – 24.
97. Liu, W.-L. and **Liu, Yucheng**, "Applicability of Several Seismic Wave Parameters in Earthquake Prediction", *International Research Journal of Geology and Mining*, 2(2), 2012, pp. 32 – 40.
98. Liu, W.-L., **Liu, Yucheng**, Xu, Y.-L., Zhang, C., Zhang, H., Shen, W.-D., and Zhong, W.-X. "Investigation and Analysis of Seismic Wave Parameters of Seismic Gap, Seismic Belt and Foreshock", *ISET Journal of Earthquake Technology*, 48(1), 2011, pp. 29 – 60.
99. Bi, X.-G. and **Liu, Yucheng**, "Modeling, Simulation, and Analysis of a Multi-Degree-of-Freedom Aircraft Wing Model", *Mathematic Scientific Journal*, 7(1), 2011, pp. 21 – 62.
100. **Liu, Yucheng** and Kurra, S. N., "Solution of Blasius Equation by Variational Iteration", *Applied Mathematics*, 1(1), 2011, pp. 24 – 27.
101. **Liu, Yucheng**, Chu, S. J. and Viera, R. J., "Analysis of Structural Impact and Crashworthiness using Experimental, Analytical and Computational Techniques: An Overview and Recent Developments", *International Journal of Vehicle Structures & Systems*, 3(3), 2011, pp. 144 – 153.
102. **Liu, Yucheng**, "A Programming Course Including C# and MATLAB for Mechanical Engineering Students", *ASEE Computers in Education Journal*, 2(3), 2011, pp. 106 – 112.
103. **Liu, Yucheng** and Gurram, C. S., "Solving Nonlinear Differential Difference Equations Using He's Variational Iteration Method", *Applied Mathematical and Computational Sciences*, 3(1), 2011, pp. 33 – 46.
104. **Liu, Yucheng**, Artigue, A. J., Sommers, J. D. and Chambers, T. L., "Theo Jansen Project in Engineering Design Course and a Design Example", *European Journal of Engineering Education*, 36(2), 2011, pp. 187 – 198.
105. **Liu, Yucheng**, "Teaching Continuum Mechanics in Mechanical Engineering Program", *Journal of STEM Education: Innovations and Research*, 12(1/2), 2011, pp. 17 – 23.

106. **Liu, Yucheng**, "A Refined Shear Deformation Plate Theory", *International Journal for Computational Methods in Engineering Science and Mechanics*, 12(3), 2011, pp. 141 – 149.
107. **Liu, Yucheng**, "Development of Instructional Courseware in Thermodynamics Education", *Computer Applications in Engineering Education*, 19(1), 2011, pp. 115 – 124.
108. **Liu, Yucheng** and Glass, G. A., "Effects of Wall Thickness and Geometric Shape on Thin-Walled Parts Structural Performance", *Thin-Walled Structures*, 49, 2011, pp. 223 – 231.
109. **Liu, Yucheng**, "Solving Abel Integral Equation by Using Chebyshev Wavelets", *Mathematic Scientific Journal*, 6(1:12), 2010, pp. 51 – 17.
110. **Liu, Yucheng**, "Modeling Abstractions of Vehicle Suspension Systems Supporting the Rigid Body Analysis", *International Journal of Vehicle Structures & Systems*, 2(3-4), 2010, pp. 117 – 126.
111. **Liu, Yucheng**, "Development of Simplified Truck Chassis Model for Crash Analysis in Different Impact Scenarios", *International Journal of Crashworthiness*, 15(5), 2010, pp. 457 – 467.
112. **Liu, Yucheng**, "Crashworthiness Design of Thin-Walled Curved Beams with Box and Channel Cross Sections", *International Journal of Crashworthiness*, 15(4), 2010, pp. 413 – 423.
113. **Liu, Yucheng**, "Thin-Walled Curved Hexagonal Beams in Crashes – FEA and Design", *International Journal of Crashworthiness*, 15(2), 2010, pp. 151 – 159.
114. **Liu, Yucheng**, "A Beam Element Using Touratier Theory", *International Journal for Computational Methods in Engineering Science and Mechanics*, 11(3), 2010, pp. 142 – 145.
115. **Liu, Yucheng**, "Development and Evaluation of a Finite Element Truck Chassis Crash Model", *International Journal of Crashworthiness*, 15(1), 2010, pp. 107 – 113.
116. Bi, X.-G. and **Liu, Yucheng**, "Experimental Techniques of Measuring Vibratory Force for Aircraft Wings", *SAE International Journal of Aerospace*, 2(1), 2010, pp. 291 – 296.
117. **Liu, Yucheng**, "Optimization of the Crushing Performance of Tubular Structures", *HKIE (The Hong Kong Institution of Engineers) Transactions*, 17(1), 2010, pp. 16 – 25.
118. Liu, W.-L. and **Liu, Yucheng**, "Application of Seismic Wave Method in Early Estimation of Wencheng Earthquake", *International Journal of Engineering and Applied Sciences*, 6(3), 2010, pp. 195 – 202.
119. **Liu, Yucheng** and Gurram, C. S., "The Use of He's Variational Iteration Method for Solving Free Vibration of Euler-Bernoulli Beam", *Mathematical and Computer Modelling*, 50(11/12), 2009, pp. 1545 – 1552.
120. **Liu, Yucheng**, "Validation of Simplified Truck Chassis Model in Different Impact Scenarios", *SAE Transactions*, SAE Technical Paper 2009-01-1674, June 2009.
121. **Liu, Yucheng**, "Dynamic Crushing Behaviors of Steel Beams with Box Section", *International Journal of Vehicle Structures & Systems*, 1(1-3), 2009, pp. 45 – 49.
122. **Liu, Yucheng**, "Application of Chebyshev Polynomial in Solving Fredholm Integral Equations", *Mathematical and Computer Modelling*, 50(3/4), 2009, pp. 465 – 469.

123. **Liu, Yucheng**, "Adomian Decomposition Method with Second Kind Chebyshev Polynomials", *Proceedings of the Jangjeon Mathematical Society*, 12(1), 2009, pp. 57 – 67.
124. **Liu, Yucheng**, "Simulating Torsional Collapse Behavior of Thin-Walled Beams Using Simplified Finite Element Models", *International Journal for Computational Methods in Engineering Science and Mechanics*, 10(4), 2009, pp. 259 – 265.
125. **Liu, Yucheng**, "Collapse Behavior and Simplified Modeling of Triangular Cross-Section Columns", *Indian Journal of Engineering & Material Sciences*, 16(2), 2009, pp. 71 – 78.
126. **Liu, Yucheng**, "Adomian Decomposition Method with Orthogonal Polynomials: Legendre Polynomials", *Mathematical and Computer Modelling*, 49(5/6), 2009, pp. 1268 – 1273.
127. **Liu, Yucheng** and Day, M. L., "Concept Modeling of Tapered Thin-Walled Tubes", *Journal of Zhejiang University Science A*, 10(1), 2009, pp. 44 – 53.
128. **Liu, Yucheng**, "Crashworthiness Design of Multi-Corner Thin-Walled Columns", *Thin-Walled Structures*, 46(12), 2008, pp. 1329 – 1337.
129. **Liu, Yucheng**, "Improved Concept Models for Straight Thin-Walled Columns with Box Cross Section", *Journal of Zhejiang University Science A*, 9(11), 2008, pp. 1473 – 1479.
130. **Liu, Yucheng** and Day, M. L., "Multi-Axis Bending of Channel Section Beam and Modeling", *Thin-Walled Structures*, 46(11), 2008, pp. 1290 – 1303.
131. **Liu, Yucheng**, "Design Optimization of Tapered Thin-Walled Square Tubes", *International Journal of Crashworthiness*, 13(5), 2008, pp. 543 – 550.
132. **Liu, Yucheng** and Day, M. L., "Simplified Truck Chassis Modeling and Crashworthiness Analysis", *International Journal of Heavy Vehicle Systems*, 15(2/3/4), 2008, pp. 237 – 254.
133. **Liu, Yucheng**, "Constructing Equations of Motion for a Vehicle Rigid Body Model", *SAE International Journal of Passenger Cars – Mechanical Systems*, 1(1), 2008, pp. 1289-1297.
134. **Liu, Yucheng**, "Recent Innovations in Vehicle Suspension Systems", *Recent Patents on Mechanical Engineering*, 1(3), 2008, pp. 206 – 210.
135. **Liu, Yucheng**, "ANSYS and LS-DYNA Used for Structural Analysis", *International Journal of Computer Aided Engineering and Technology*, 1(1), 2008, pp. 31 – 44.
136. **Liu, Yucheng**, "Design Enhancement of Thin-Walled Steel Beams with Improved Stiffness and Reduced Weight", *International Journal of Design Engineering*, 1(2), 2008, pp. 149 – 165.
137. **Liu, Yucheng**, "Structural and NVH Analyses of Mixed Thin-Walled Structures Using FEA Concept Models", *International Journal of Computer Applications in Technology*, 32(1), 2008, pp. 63 – 68.
138. **Liu, Yucheng** and Day, M. L., "Bending Collapse of Thin-Walled Circular Tubes and Computational Application", *Thin-Walled Structures*, 46(4), 2008, pp. 442 – 450.
139. **Liu, Yucheng**, "Optimum Design of Thin-Walled Box Section Beams for Crashworthiness Analysis", *Finite Elements in Analysis and Design*, 44(3), 2008, pp. 139 – 147.
140. **Liu, Yucheng** and Day, M. L., "Impact Experimental Analysis and Computer Simulation on Automotive Bumper System", *International Journal for Computational Methods in Engineering Science and Mechanics*, 9(1), 2008, pp. 51 – 59.

141. **Liu, Yucheng** and Day, M. L., "Simplified Modeling of Cross Members in Vehicle Design", *SAE Transactions: Journal of Passenger Cars – Mechanical Systems*, paper no. 2007-01-2135, 2007.
142. **Liu, Yucheng** and Day, M. L., "Development of Simplified Thin-Walled Beam Models for Crashworthiness Analysis", *International Journal of Crashworthiness*, 12(6), 2007, pp. 597 – 608.
143. **Liu, Yucheng** and Day, M. L., "Development of Simplified Finite Element Model for Straight Thin-Walled Tubes with Octagonal Cross Section", *International Journal of Crashworthiness*, 12(5), 2007, pp. 503 – 508.
144. **Liu, Yucheng** and Day, M. L., "Simplified Modeling of Thin-Walled Box Section Beam", *International Journal of Crashworthiness*, 11(3), 2006, pp. 263 – 272.
145. **Liu, Yucheng** and Day, M. L., "Bending Collapse of Thin-Walled Beams with Channel Cross Section", *International Journal of Crashworthiness*, 11(3), 2006, pp. 251 – 262.

Under Review

146. Cowl, A., Cowl, A., Decker, M., Spilde, R., and **Liu, Yucheng**, "System Design of Drivetrain for a Baja SAE Four-Wheel Drive Vehicle", submit to *SAE International Journal of Vehicle Dynamics, Stability, and NVH*, under review.
147. Wang, S.-S., Deng, X.-Q., Wang, H.-W., **Liu, Yucheng**, Dong, C.-L., Qi, L.-Z., Zeng, Z.-L., "A Study of a Novel Precision Reducer Based on the Logarithmic Spiral: Tooth Profile Design, Meshing Characteristics, and Surface Contact Mechanism", submitted to *Chinese Journal of Mechanical Engineering*, under review.
148. Jouhari, C. and **Liu, Yucheng**, "Investigation of Self-Diffusion and Specific Heat Capacity of Al-Si Systems Using Molecular Dynamics Simulations", submitted to *International Journal for Computational Methods in Engineering Science and Mechanics*, under review.
149. Horstemeyer, M. F., Horstemeyer, S. J., Whittington, W., and **Liu, Yucheng**, "High Strain Rate Mechanical Properties of Salt Single Crystals", submitted to *Scripta Materialia*, under review.

Dissertation

Liu, Yucheng, "Development of Simplified Models for Crashworthiness Analysis", University of Louisville, Louisville, KY, USA, 2005.

Peer-Reviewed Conference and Technical Papers

1. Foss, M., Baugh, M., and **Liu, Yucheng**, "Promoting Diversity in Welding Engineering Technology through the Medium of Art", Proceedings of 2024 ASEE Annual Conference & Exposition, Portland, OR, USA, June 23 – 26, 2024.
2. Essassi, F. E. and **Liu, Yucheng**, "Engineering a Cost-Effective Solution for Measuring Sea Turtles' Responses to Hypoxia", IMECE2023-111634, Proceedings of ASME 2023 International Mechanical Engineering Congress & Exposition, New Orleans, LA, USA, October 29 – November 2, 2023.
3. **Liu, Yucheng**, "Development of an Online Phase-Field Theory Course for Mechanical

Engineering Graduate Students", Proceedings of 2023 ASEE Annual Conference & Exposition, Baltimore, MD, USA, June 25 – 28, 2023.

4. **Liu, Yucheng**, "Continuous Improvement of a Mechanical Engineering Senior Seminar Using Student Feedback", Proceedings of 2023 ASEE Annual Conference & Exposition, Baltimore, MD, USA, June 25 – 28, 2023.
5. Jouhari, C., **Liu, Yucheng**, and Dickel, D., "Molecular Dynamics Study of Gradient Energy Coefficient and Grain-Boundary Migration in Aluminum Foam", TMS 2023 152nd Annual Meeting & Exhibition Supplemental Proceedings, pp. 623 – 631.
6. Jouhari, C., **Liu, Yucheng**, and Dickel, D., "Phase-Field Modeling of Aluminum Foam Based on Molecular Dynamics Simulations", TMS 2023 152nd Annual Meeting & Exhibition Supplemental Proceedings, pp. 632 – 641.
7. Foss, M. and **Liu, Yucheng**, "Promoting Sustainable Development Goals through Project-Based Learning: A Case Study of the Concept Center", Proceedings of the 1st International Academy Conference on the Sustainable Development Goals, October 5 – 7, 2022, Utah Valley University, Orem, UT, USA.
8. Yenusah, C. O., Stone, T. W., Morgan, N. R., Robey, R. W., **Liu, Yucheng**, and Chen, L., "Incorporating Performance Probability and Data-Oriented Design in Phase-Field Modeling", IDETC2022-89513, Proceedings of the ASME 2022 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (IDETC/CIE 2022), August 14 – 17, 2022, St. Louis, MO, USA.
9. Foss, M. and **Liu, Yucheng**, "Lessons Learned from 5 Years of Parent Daughter Engineering Outreach: Using Project-Based Learning to Introduce Families to Engineering Disciplines", Proceedings of 2022 ASEE Annual Conference and Exposition, Minneapolis, MN, USA, June 26 – 29, 2022.
10. **Liu, Yucheng**, Ball, J. E., Abdelwahed, S., and He, G., "An Automatic Emergency Braking System for Collision Avoidance Assist of Multi-Trailer Vehicle Based on Model Prediction Control", SAE Technical Paper 2021-01-0117, Proceedings of SAE Digital Summit, Online, June 16 – 18, 2021.
11. Foss, M. and **Liu, Yucheng**, "Developing Creativity through Project-Based Learning", Proceedings of Wasatch Aerospace and Systems Engineering Mini-Conference, Virtual Conference, April 15 – 16, 2021.
12. Wang, Z., Wang, X., Yang, W.-H., Xiao, Y.-H., **Liu, Yucheng**, and Chen, L., "yNet: A Multi-Input Convolutional Network for Ultra-Fast Simulation of Field Evolvement", arXiv:2012.10575 (Computational Science. Computational Engineering, Finance, and Science), 2020.
13. Brown, W. B. and **Liu, Yucheng**, "Electrical Axle Sizing for the Conversion of a Conventional Production Vehicle to a Prototype Battery Electric Vehicle", SAE Technical Paper 2020-01-5093, 2020.
14. Davis, M., Ball, J. E., **Liu, Yucheng**, and Stone, T. W., "Design and Fabrication of Mount Plate for Integration of Multiple Cameras in UAV Using 3D Printing and Traditional Manufacturing Method", IMECE2020-24426, Proceedings of ASME 2020 International Mechanical Engineering Congress & Exposition, Virtual Conference, Online, November 16 –

19, 2020.

15. Yenusah, C. O., Ji, Y.-Z., **Liu, Yucheng**, Stone, T. W., Horstemeyer, M. F., and Chen, L., "Investigation of Precipitation Kinetics and Hardening Effects of γ" in Inconel 625 using a Combination of Meso-Scale Phase-Field Simulations and Macro-Scale Precipitates Strengthening Calculations", IMECE2020-23328, Proceedings of ASME 2020 International Mechanical Engineering Congress & Exposition, Virtual Conference, Online, November 16 – 19, 2020.
16. Foss, M. and **Liu, Yucheng**, "Project-Based Learning Center to Bridge to Students with Technology", Proceedings of 2020 Intermountain Engineering Technology and Computing (IETC), Orem, UT, USA, September 2020.
17. **Liu, Yucheng**, "Design of Instructional Tools to Facilitate Understanding of Fluid Viscous Dampers in a Vibration and Controls Class and Course Assessment", Proceedings of 2020 ASEE Virtual Annual Conference, June 22 – 26, 2020.
18. Yang, W.-H., Wang, Z., Yenusah, C. O., and **Liu, Yucheng**, "An Integrated Model for Predicting the Porosity Effect on the Mechanical Behavior of Additively Manufactured Al-10Si-Mg Alloy", SAE Technical Paper 2020-01-1075, Proceedings of SAE 2020 World Congress Experience, Detroit, MI, USA, April 21 – 23, 2020.
19. **Liu, Yucheng**, "Implementation of MATLAB/Simulink into a Vibration and Control Course for Mechanical Engineering Students", Proceedings of ASEE SE Section Annual Conference, Auburn University, Auburn, AL, USA, March 8 – 10, 2020.
20. Perkins, R. A., Yang, W.-H., **Liu, Yucheng**, Chen, L., and Yenusah, C. O., "Finite Element Analysis of the Effect of Porosity on the Plasticity and Damage Behavior of Mg AZ31 and Al 6061 T651 Alloys", IMECE2019-10672, Proceedings of ASME 2019 International Mechanical Engineering Congress & Exposition, Salt Lake City, UT, USA, November 11 – 14, 2019.
21. Deng, X.-Q., Wang, J., Wang, S.-K., Wang, S.-S., **Liu, Yucheng**, and He, G., "Meshing Characteristics and Engagement of Anti-Backlash Single- and Double-Roller Enveloping Hourglass Worm Gear", IMECE2019-11332, Proceedings of ASME 2019 International Mechanical Engineering Congress & Exposition, Salt Lake City, UT, USA, November 11 – 14, 2019.
22. **Liu, Yucheng** and Dou, Y.-Q., "A Computational Study of Crystal Orientation Effects on High Strain Rate Performance of Single Crystal Copper", SAE Technical Paper 2019-01-0714, Proceedings of SAE 2019 World Congress Experience, Detroit, MI, USA, April 9 – 11, 2019.
23. Deng, X.-Q., **Liu, Yucheng**, and He, G., "Design and Assessment of An Antibacklash Single Roller Enveloping Hourglass Worm Gear", SAE Technical Paper 2019-01-1071, Proceedings of SAE 2019 World Congress Experience, Detroit, MI, USA, April 9 – 11, 2019.
24. He, G. and **Liu, Yucheng**, "Theoretical Modeling of the Mechanical Degradation of Polymer Composites due to Moisture/Water Absorption and Damage Progression", SAE Technical Paper 2019-01-1376, Proceedings of SAE 2019 AeroTech Americas, Charleston, SC, USA, March 26 – 28, 2019.
25. **Liu, Yucheng** and Baker, F., "Development of Vibration and Control Systems through Student Projects", Proceedings of ASEE SE Section Annual Conference, North Carolina State

University, Raleigh, NC, USA, March 10 – 12, 2019.

26. **Liu, Yucheng**, Chander, H., Knight, A., and Bell, J., "Educating Tomorrow's Engineering Entrepreneur through Participating NSF I-Corps Program", Proceedings of ASEE SE Section Annual Conference, North Carolina State University, Raleigh, NC, USA, March 10 – 12, 2019.
27. Stranburg, T., **Liu, Yucheng**, Chander, H., and Knight, A., "Computational Design and Analysis of Nitinol-Based Arch Wedge Support", IMECE2018-86287, Proceedings of ASME 2018 International Mechanical Engineering Congress & Exposition, Pittsburgh, PA, USA, November 9 – 15, 2018.
28. Dimitrov, N., **Liu, Yucheng**, and Horstemeyer, M. F., "A Thermo-Electro-Elasto-Viscoplastic Damage Internal State Variable Model for Ductile Metals", IMECE2018-86598, Proceedings of ASME 2018 International Mechanical Engineering Congress & Exposition, Pittsburgh, PA, USA, November 9 – 15, 2018.
29. He, G., **Liu, Yucheng**, Horstemeyer, M. F., and Bammann, D. J., "An Elastothermovisco-Plasticity Anisotropic Damage Model for Short Fiber Reinforced Polymer Composites", IMECE2018-86286, Proceedings of ASME 2018 International Mechanical Engineering Congress & Exposition, Pittsburgh, PA, USA, November 9 – 15, 2018.
30. **Liu, Yucheng**, LeClair, A., Doude, M., and Burch, R. F., "Design, Installation, and Validation of a Data Acquisition System", IMECE2018-87071, Proceedings of ASME 2018 International Mechanical Engineering Congress & Exposition, Pittsburgh, PA, USA, November 9 – 15, 2018.
31. Davis, M., Cagle, L., Morgan, C., Ball, J. E., Anderson, D. T., Bethel, C. L., and **Liu, Yucheng**, "Hydra: A Modular, Universal Multisensor Data Collection System", 10643-14, Proceedings of SPIE DCS Defense and Security Program and Symposium, Orlando, FL, USA, April 15 – 19, 2018.
32. Dou, Y.-Q. and **Liu, Yucheng**, "A Multiscale Study of Single Crystal Copper Plate with Octal Orientation Struck by A Nickel Projectile", SAE Technical Paper 2018-01-1210, Proceedings of SAE 2018 World Congress & Exhibition, Detroit, MI, USA, April 10 – 12, 2018.
33. **Liu, Yucheng**, Meghat, V., Machen, B., and He, G., "Design and Prototyping of Cleaning Systems for Cylinder Head and Engine Block Conveying Lines", SAE Technical Paper 2018-01-1387, Proceedings of SAE 2018 World Congress & Exhibition, Detroit, MI, USA, April 10 – 12, 2018.
34. **Liu, Yucheng** and Baker, F., "A Course Assessment Tool for A Mechanical Engineering Design Class", Proceedings of ASEE SE Section Annual Conference, Embry-Riddle Aeronautical University, Daytona Beach, FL, USA, March 4 – 6, 2018.
35. He, G., **Liu, Yucheng**, Dou, Y.-Q., and Guo, X., "Effects of Grain Size on Ballistic Response of Copper Materials", IMECE2017-70585, Proceedings of ASME 2017 International Mechanical Engineering Congress & Exposition, Tampa, FL, USA, November 3 – 9, 2017.
36. He, G., **Liu, Yucheng**, Horstemeyer, M. F., and Bammann, D. J., "A Multiphase Internal State Variable Model for Predicting the Plasticity and Damage Mechanisms of Fiber-Reinforced Polymers", IMECE2017-70582, Proceedings of ASME 2017 International Mechanical Engineering Congress & Exposition, Tampa, FL, USA, November 3 – 9, 2017.
37. **Liu, Yucheng**, Sippel, T., and He, G., "Improve Heat Resistance of Composite Engine

Cowlings using Ceramic Coating Materials, Experimental Design and Testing", SAE Technical Paper 2017-01-2130, Proceedings of SAE 2017 AeroTech Congress & Exhibition, Fort Worth, TX, USA, September 26 – 28, 2017.

38. Setia, A., Sharma, V., and **Liu, Yucheng**, "Numerical Method to Solve Cauchy Type Singular Integral Equation with Error Bounds", *AIP Conference Proceedings*, 2017 1798(1) 020141-1 – 020141-8.
39. **Liu, Yucheng**, Davenport, C., Gafford, J., Abdelwahed, S., Mazzola M., Ball, J. E., Doude, M., and Burch, R. F., "Development of a Dynamic Modeling Framework to Predict Instantaneous Status of Towing Vehicle Systems", SAE Technical Paper 2017-01-1588, Proceedings of SAE 2017 World Congress & Exhibition, Detroit, MI, USA, April 4 – 6, 2017.
40. **Liu, Yucheng**, "Development of a Particulate Trapping System and Investigation of Effects of Viscosity of the Filter Media Using Experimental and Computational Methods", SAE Technical Paper 2017-01-1320, Proceedings of SAE 2017 World Congress & Exhibition, Detroit, MI, USA, April 4 – 6, 2017.
41. **Liu, Yucheng**, Batte, J. A., Collins, Z. H., Bateman, J. N., Atkins, J., Davis, M., Salley, D., Bethel, C. L., Ball, J. E., and Archibald, C., "Mechanical Design, Prototyping, and Validation of a Martian Robot Mining System", SAE Technical Paper 2017-01-1305, Proceedings of SAE 2017 World Congress & Exhibition, Detroit, MI, USA, April 4 – 6, 2017.
42. Dou, Y.-Q., **Liu, Yucheng**, and Hammi, Y., "Comparison of Johnson-Cook Model and An ISV Plasticity Damage Model in Penetration Simulation", IMECE2016-68195, Proceedings of ASME 2016 International Mechanical Engineering Congress & Exposition, Phoenix, AZ, USA, November 11 – 17, 2016.
43. Dou, Y.-Q., **Liu, Yucheng**, Whittington, W., and Miller, J., "Experimental Calibration of ISV Damage Model Constants for Pure Copper for High-Speed Impact Simulation", IMECE2016-65690, Proceedings of ASME 2016 International Mechanical Engineering Congress & Exposition, Phoenix, AZ, USA, November 11 – 17, 2016.
44. **Liu, Yucheng** and Sampath, S. M., "Development and Implementation of Beam Elements for Crashworthiness Analysis of Thin-Walled Beam Structures", SAE Technical Paper 2016-01-0401, Proceedings of SAE 2016 World Congress & Exhibition, Detroit, MI, USA, April 12 – 14, 2016.
45. Dou, Y.-Q., **Liu, Yucheng**, and Hammi, Y., "Computational Investigation of High Velocity Penetration of Copper Subjected to Impact from Nickel Projectiles", IMECE2015-50241, Proceedings of ASME 2015 International Mechanical Engineering Congress & Exposition, Houston, TX, USA, November 13 – 19, 2015.
46. **Liu, Yucheng**, Dou, Y.-Q., Justin, W., Horstemeyer, S. J., Thirumalai, R. V. K. G. and Williams, W., "Experimental Study of High Velocity Penetration of an Aluminum Target Plate by A Spherical Projectile", IMECE2015-50243, Proceedings of ASME 2015 International Mechanical Engineering Congress & Exposition, Houston, TX, USA, November 13 – 19, 2015.
47. **Liu, Yucheng**, "An Efficient Algorithm for Solving Differential Equations to Facilitate Modeling and Simulation of Aerospace Systems", SAE Technical Paper 2015-01-2402, Proceedings of SAE 2015 AeroTech Congress & Exhibition, Seattle, WA, USA, September 22 – 24, 2015.

48. Setia, A., Sharma, V. and **Liu, Yucheng**, "Numerical Solution of Cauchy Singular Integral Equation with an Application to a Crack Problem", Proceedings of the 7th International Conference on Dynamic Systems and Applications and the 5th International Conference on Neural, Parallel, and Scientific Computations, Morehouse College, Atlanta, GA, USA, May 27 – 30, 2015.
49. **Liu, Yucheng** and Dou, Y.-Q., "Design of An Industry-Tied and Team-Oriented Course for Mechanical Engineering Seniors", Proceedings of ASEE SE Section Annual Conference, University of Florida, Gainesville, FL, USA, April 12 – 14, 2015.
50. Dou, Y.-Q. and **Liu, Yucheng**, "Computerized Database Decision Management System in Production Traveler Sheet", IMECE2014-36395, Proceedings of ASME 2014 International Mechanical Engineering Congress & Exposition, Montreal, Quebec, Canada, November 14 – 20, 2014.
51. Li, N.-Y., **Liu, Yucheng** and Zhang, J., "The Configuration Recommendation Strategy Based on Similarity in Product Configuration for Manufacturing", IMECE2014-36684, Proceedings of ASME 2014 International Mechanical Engineering Congress & Exposition, Montreal, Quebec, Canada, November 14 – 20, 2014.
52. Dou, Y.-Q. and **Liu, Yucheng**, "A Combined Computational and Analytical Study of Lateral Impact Behavior of Pressurized Pipelines", IMECE2014-36371, Proceedings of ASME 2014 International Mechanical Engineering Congress & Exposition, Montreal, Quebec, Canada, November 14 – 20, 2014.
53. **Liu, Yucheng** and Pastor J., "Time Domain Modeling & Power Output for a Heaving Point Absorber Wave Energy Converter", IMECE2014-36374, Proceedings of ASME 2014 International Mechanical Engineering Congress & Exposition, Montreal, Quebec, Canada, November 14 – 20, 2014.
54. Guiberteau, K. L., Kozman, T. A., Lee, J. and **Liu, Yucheng**, "Guidelines in Wave Energy Conversion System Design", Proceedings of Industrial Energy Technology Conference (IETC 2014), New Orleans, LA, USA, May 20 – 23, 2014.
55. Guiberteau, K. L., **Liu, Yucheng**, Lee, J. and Kozman, T. A., "Potential of Development and Application of Wave Energy Conversion Technology in the Gulf of Mexico", Proceedings of Industrial Energy Technology Conference (IETC 2014), New Orleans, LA, USA, May 20 – 23, 2014.
56. Pastor, J., Dou, Y.-Q. and **Liu, Yucheng**, "Wave Energy Resource Analysis for Use in Wave Energy Conversion", Proceedings of Industrial Energy Technology Conference (IETC 2014), New Orleans, LA, USA, May 20 – 23, 2014.
57. Pastor, J., Dou, Y.-Q. and **Liu, Yucheng**, "Wave Energy Conversion and Its Renewable Energy Potential for the Oil and Gas Industry", Proceedings of Industrial Energy Technology Conference (IETC 2014), New Orleans, LA, USA, May 20 – 23, 2014.
58. Setia, A. and **Liu, Yucheng** and Vatsala, A. S., "The Solution of the Bagley-Torvik Equation by Using Second Kind Chebyshev Wavelet", Proceedings of 11th International Conference on Information Technology: New Generations (ITNG 2014), Las Vegas, NV, USA, April 7 – 9, 2014.
59. Setia, A., **Liu, Yucheng** and Vatsala, A. S., "Solution of Linear Fractional Fredholm Integro-

Differential Equation by Using Second Kind Chebyshev Wavelet", Proceedings of 11th International Conference on Information Technology: New Generations (ITNG 2014), Las Vegas, NV, USA, April 7 – 9, 2014.

60. Dou, Y.-Q. and **Liu, Yucheng**, "Computational Study of Lateral Impact Behavior of Pressurized Pipelines", IMECE2013-62971, Proceedings of ASME 2013 International Mechanical Engineering Congress & Exposition, San Diego, CA, USA, November 13 – 21, 2013.
61. **Liu, Yucheng**, Kozman, T. A., Cavalier G., Pastor J. and Viera, R. J., "Establishment of a Wave Energy and Technology Lab to Promote the Experimental Study of Ocean and Wave Energy", IMECE2013-62968, Proceedings of ASME 2013 International Mechanical Engineering Congress & Exposition, San Diego, CA, USA, November 13 – 21, 2013.
62. **Liu, Yucheng** and Glass, G. A., "Effects of Mesh Density on Finite Element Analysis", SAE Technical Paper 2013-01-1375, Proceedings of SAE 2013 World Congress & Exhibition, Detroit, MI, USA, April 16 – 18, 2013.
63. **Liu, Yucheng**, "Instructional Courseware Developed for Thermodynamics Course", Proceedings of 2013 ASEE Gulf Southwest Annual Regional Conference, University of Texas at Arlington, Arlington, TX, USA, March 21 – 23, 2013.
64. **Liu, Yucheng** and Wang, Q.-K., "Modeling and Simulation of Performance of Stiffened Plates during Strength Analysis", IMECE2012-85122, Proceedings of ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, TX, USA, November 9 – 15, 2012.
65. **Liu, Yucheng** and Wang, Q.-K., "Comparison of Regular Stiffeners and Arbitrarily Oriented Stiffeners in Buckling Analysis", IMECE2012-85123, Proceedings of ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, TX, USA, November 9 – 15, 2012.
66. **Liu, Yucheng** and Peymani, F. Y., "Evaluation of Paddle Wheels in Generating Hydroelectric Power", IMECE2012-85121, Proceedings of ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, TX, USA, November 9 – 15, 2012.
67. **Liu, Yucheng**, Alidoust, S. and Qi, B., "Design, Modeling, and Evaluation of a Cost Effective Particulate Control System", SAE Technical Paper 2012-01-1882, Proceedings of SAE 2012 Aerospace Manufacturing and Automated Fastening Conference & Exhibition, Fort Worth, TX, USA, September 18 – 20, 2012.
68. **Liu, Yucheng**, "Numerical Methods for Solving Abel Integral Equation and Fredholm Integration Equation", Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
69. **Liu, Yucheng**, "A Modified Adomian Decomposition Method", Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
70. **Liu, Yucheng**, "A New Developed Shear Deformation Plate", Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
71. **Liu, Yucheng**, "A New Beam Element for Structural Analysis", Proceedings of 2012

International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.

72. **Liu, Yucheng** and Gurram, C. S., "A Numerical Method for Solving Free Vibration of Euler-Bernoulli Beam", Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
73. **Liu, Yucheng**, "Application of Legendre Polynomials in Adomian Decomposition Method", Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
74. **Liu, Yucheng** and Glass, G. A., "Structural Performance of Thin-Walled Panels", Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
75. **Liu, Yucheng** and Kurra, S. N., "Solving Blasius Equation using HVIM", Proceedings of 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 13 – 14, 2012.
76. Pastor, J. and **Liu, Yucheng**, "Hydrokinetic Energy Overview and Energy Potential for the Gulf of Mexico", Proceedings of 2012 IEEE Green Technologies Conference (GTC'12), Tulsa, OK, USA, April 19 – 20, 2012.
77. Peymani, Y. F. and **Liu, Yucheng**, "Development of an Analytical Model to Predict the Performance of Paddle Wheel in Generating Electricity and Its Validation Using Computational Fluid Dynamics (CFD)", Proceedings of 2012 IEEE Green Technologies Conference (GTC'12), Tulsa, OK, USA, April 19 – 20, 2012.
78. Peymani, Y. F., Ghanbari, S. A., **Liu, Yucheng** and Hayatdavoudi, A., "Design and Validate a Particulate Matter Management System Computationally", IMECE2011-64063, Proceedings of ASME 2011 International Mechanical Engineering Congress & Exposition, Denver, CO, USA, November 11 – 17, 2011.
79. **Liu, Yucheng**, "A Numerical Method of Solving Volterra Integral Equation", Proceedings of 2011 Hawaii University International Conferences (HUIC) on Mathematics & Engineering Conference, Honolulu, HI, USA, June 13 – June 15, 2011.
80. **Liu, Yucheng**, "A Numerical Method of Solving Nonlinear Differential Difference Equations", Proceedings of 2011 Hawaii University International Conferences (HUIC) on Mathematics & Engineering Conference, Honolulu, HI, USA, June 13 – June 15, 2011.
81. Kozman, T. A., Simon, W. E., **Liu, Yucheng** and Guidry, J. J., "Revitalization of a Steam Lab to Meet Energy Challenge and Strengthen Mechanical Engineering Education", Proceedings of Industrial Energy Technology Conference (IETC 2011), New Orleans, LA, USA, May 17 – 19, 2011.
82. Chu, S. J. and **Liu, Yucheng**, "Prospects of Wind Energy and Wind Power in Louisiana", Proceedings of 2011 IEEE Green Technologies Conference (GTC'11), Baton Rouge, LA, USA, April 14 – 15, 2011.
83. **Liu, Yucheng**, "Design of Lightweight Thin-Walled Beams with Enhanced Stiffness", Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.

84. **Liu, Yucheng**, "Modeling, Analysis, and Design of Multi-Corner Thin-Walled Columns", Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
85. **Liu, Yucheng**, "Modeling and Simulation of Thin-Walled Columns with Triangular Cross-Section", Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
86. **Liu, Yucheng**, "Study of Crash Energy Absorption Capability of Thin-Walled Curved Beams with Box and Channel Cross Sections Using FEA", Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
87. **Liu, Yucheng**, "Modeling, Analysis, and Design of Thin-Walled Curved Hexagonal Beams in Crash", Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
88. **Liu, Yucheng**, "Crashworthiness Response and Design of Tapered Thin-Walled Square Beams", Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
89. **Liu, Yucheng**, "Design and Modeling of Thin-Walled Tubular Structures During Crashworthiness Analysis", Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
90. **Liu, Yucheng**, "Crashworthiness Design of Thin-Walled Box Section Beams Using FEA and RSM", Proceedings of 2010 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering, December 6 – 20, 2010.
91. **Liu, Yucheng**, "Crashworthiness Analysis of Finite Element Truck Chassis Model Using LS-DYNA", Proceedings of 11th International LS-DYNA Users Conference, Dearborn, MI, USA, June 6 – 8, 2010.
92. **Liu, Yucheng**, "Study of Thin-Walled Box Beams Crushing Behaviors Using LS-DYNA", Proceedings of 11th International LS-DYNA Users Conference, Dearborn, MI, USA, June 6 – 8, 2010.
93. Artigue, A. J., Sommers, J. D., **Liu, Yucheng** and Chambers, T. L., "Achieve Objectives of Engineering Design Course Through Theo Jansen Project and a Design Sample", Proceedings of ASEE Southeastern Annual Conference, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA, April 18 – 20, 2010.
94. Bi, X.-G. and **Liu, Yucheng**, "Analytical Methods of Evaluating Aerodynamic Forces of Aircraft Wings", SAE Technical Paper 2009-01-3281, Proceedings of SAE 2009 AeroTech Congress & Exhibition, Seattle, WA, USA, November 10 – 12, 2009.
95. Bi, X.-G. and **Liu, Yucheng**, "Experimental Techniques of Measuring Vibratory Force for Aircraft Wings", SAE Technical Paper 2009-01-3283, Proceedings of SAE 2009 AeroTech Congress & Exhibition, Seattle, WA, USA, November 10 – 12, 2009.
96. **Liu, Yucheng** and Day, M. L., "Parametric Study on Axial Crushing of Thin-Walled Beams with Box Section", Proceedings of Symposium on Mechanics of Slender Structures (MoSS 2008), University of Maryland Baltimore County, Baltimore County, MD, USA, July 23 – 25, 2008.

97. **Liu, Yucheng** and Day, M. L., "Bending and Modeling of Channel Section Beam", Proceedings of Symposium on Mechanics of Slender Structures (MoSS 2008), University of Maryland Baltimore County, Baltimore County, MD, USA, July 23 – 25, 2008.
98. **Liu, Yucheng** and Day, M. L., "Simplified Modeling of Thin-Walled Tubes with Octagonal Cross Section – Axial Crushing", Proceedings of World Congress on Engineering and Computer Science (WCECS 2007), San Francisco, CA, USA, October 24 – 26, 2007.
99. **Liu, Yucheng** and Day, M. L., "Simplified Modeling of Thin-Walled Tubes with Octagonal Cross Section – Axial Crushing", Proceedings of 6th European LS-DYNA Users' Conference, Gothenburg, Sweden, May 29 – 30, 2007.
100. **Liu, Yucheng** and Day, M. L., "Development of Simplified Truck Chassis Model for Crashworthiness Analysis", Proceedings of LS-DYNA International Users Conference, Dearborn, MI, USA, June 4 – 6, 2006.
101. **Liu, Yucheng** and Day, M. L., "Impact Experimental Analysis and Computer Simulation Using ANSYS", Proceedings of 2006 International ANSYS Conference, Pittsburgh, PA, USA, May 2 – 4, 2006.
102. **Liu, Yucheng** and Day, M. L., "Comparisons between Detailed and Simplified Models for Thin-Walled Beams Structures", Proceedings of 2005 Huntsville Simulation Conference, Huntsville, AL, USA, October 25 – 28, 2005.

SEMINARS AND CONFERENCE PRESENTATIONS

1. "Utilizing Project-Based Learning to Promote Diversity in Welding Engineering and Technology", Presentation at the 2024 ASEE Annual Conference & Exposition, Portland, OR, USA, June 25, 2024.
2. "Computational Investigation of Structure-Property relationship of Triply Periodic Bi-Continuous Piezocomposites using an Integrated Multiscale Modeling and Deep Learning Methodology," Invited Talk, School of Mechanical Engineering, Hefei University of Technology, Hefei, Anhui, China, June 14, 2024.
3. "Understanding of Coupled Effects of Microstructure and Topology on Piezoelectricity of AM-Produced Triply Periodic Bi-Continuous Piezocomposites through a Combined Two-Scale and Data-Driven Approach", Distinguished Lecture, Chengdu University of Technology, Chengdu, Sichuan, China, June 4, 2024.
4. "Analysis of Lubrication Mechanism of a High Precision Reducer Consisting of a Worm Gear Drive with Complicated Spatial Surface Interactions", Presentation at SAE 2024 World Congress Experience, Detroit, MI, USA, April 16, 2024.
5. "Effects of Roller Shape of Enveloping Speed Reducer on Its Lubrication Performance", Presentation at the 2023 ASME International Mechanical Engineering Congress & Exposition, New Orleans, LA, USA, October 30, 2023.
6. "Development of an Online Phase-Field Theory Course for Mechanical Engineering Graduate Students", Presentation at the 2023 ASEE Annual Conference & Exposition, Baltimore, MD, USA, June 26, 2023.
7. "Continuous Improvement of a Mechanical Engineering Senior Seminar Using Student

Feedback", Presentation at the 2023 ASEE Annual Conference & Exposition, Baltimore, MD, USA, June 26, 2023.

8. "An ISV Model to Predict the Dynamic Plastic and Damage Behaviors of Fiber Reinforced Polymer Composites", Presentation at the 4th International Conference on Damage Mechanics (ICDM4), Louisiana State University, Baton Rouge, LA, USA, May 15, 2023.
9. "Three-Dimensional Phase-Field Simulation of γ" Precipitation Kinetics in Inconel 625 During Heat Treatment", Presentation at ASME 2022 International Mechanical Engineering Congress & Exposition, Columbus, OH, USA, November 3, 2022.
10. "Phase-Field Modeling and Simulation of γ" Precipitation Mechanism in a Nickel-Based Superalloy During Heat Treatment", The 16th International Lecture on Advanced Materials and Structural Mechanics, School of Mechanical Engineering, Tianjin University, Online, July 11, 2022.
11. "Lessons Learned from 5 Years of Parent Daughter Engineering Outreach: Using Project-Based Learning to Introduce Families to Engineering Disciplines", Presentation at 2022 ASEE Annual Conference, Minneapolis, MN, June 26 – 29, 2022.
12. "Attapulgite Clay Crushing Mechanisms of Bio-Inspired Tooth Plates", Virtual Seminar, School of Mechanical and Automotive Engineering, Hefei University of Technology, Online, June 14, 2022.
13. "A Data-Driven Approach for the Investigation of Coupled Effects of Microstructure and Topology on the Piezoelectricity of AM-Produced Triply Periodic Bi-Continuous Piezocomposite", Invited Talk, Los Alamos National Laboratory, Los Alamos, NM, USA, June 2, 2022.
14. "Fatigue and Failure Analysis of a Socket Drive Adapter Following an Integrated Experimental and Computational Approach", Presentation at SAE 2022 World Congress Experience, Detroit, MI, USA, April 5, 2022.
15. "Achieving Preeminence in Teaching, Research, and Service in Mechanical Engineering Department, South Dakota State University", Invited Talk, Department of Mechanical Engineering, South Dakota State University, Brookings, SD, March 26, 2021.
16. "Investigation of Process-Structure-Property-Performance Relationship of Materials through A Combined Experimental-Computational Approach", Research Seminar Series, Department of Mechanical Engineering, University of North Texas, March 17, 2021.
17. "A Vision for Mechanical Engineering Department, University of North Texas", Virtual Invited Talk, March 16, 2021.
18. "Design and Fabrication of Mount Plate for Integration of Multiple Cameras in UAV using 3D Printing and Traditional Manufacturing Method", Presentation at ASME 2020 International Mechanical Engineering Congress & Exposition, Virtual Conference, November 19, 2020.
19. "Design of Instructional Tools to Facilitate Understanding of Fluid Viscous Dampers in a Vibration and Controls Class and Course Assessment", Presentation at 2020 ASEE Virtual Annual Conference, June 24, 2020.
20. "Implementation of MATLAB/Simulink into a Vibration and Control Course for Mechanical Engineering Students", Presentation at ASEE SE Section Annual Conference, Auburn

University, Auburn, AL, USA, March 9, 2020.

21. "A Computational Study of Human Head Response to Impact from a Small Unmanned Aircraft System", Presentation at 36th South Biomedical Engineering Conference 2020, Kenner, LA, USA, March 7, 2020.
22. "Meshing Characteristics and Engagement of Anti-Backlash Single- and Double-Roller Enveloping Hourglass Worm Gear", Presentation at ASME 2019 International Mechanical Engineering Congress & Exposition, Salt Lake City, UT, USA, November 14, 2019.
23. "Design and Prototyping of Cleaning Systems for Cylinder Head and Engine Block Conveying Lines", Presentation at the 2019 Southeast Symposium on Contemporary Engineering Topics and UNO Engineering Forum, University of New Orleans, New Orleans, LA, USA, September 13, 2019.
24. "Introduction of an Electroplastic Internal State Variable Model for Nonferromagnetic Ductile Metals", Invited Talk, Yulin Normal University, Yulin, Guangxi, China, June 17, 2019.
25. "An Integrated Computational-Experimental Study on Electroplasticity of Nonferromagnetic Ductile Metals", Invited Talk, Institute of Mechanics, Chinese Academy of Sciences, Beijing, China, June 10, 2019.
26. "Experimental Analysis and Computational Modeling of Electroplasticity of Nonferromagnetic Ductile Metals", Invited Talk, School of Aeronautics Colloquium, Northwestern Polytechnical University, Xi'an, Shaanxi, China, June 5, 2019.
27. "Design and Assessment of An Antibacklash Single Roller Enveloping Hourglass Worm Gear", Presentation at SAE 2019 World Congress Experience, Detroit, MI, USA, April 11, 2019.
28. "A Computational Study of Crystal Orientation Effects on High Strain Rate Performance of Single Crystal Copper", Presentation at SAE 2019 World Congress Experience, Detroit, MI, USA, April 10, 2019.
29. "Constitutive Modeling of Elasto-Thermo-Visco-Plastic and Anisotropic Damage Behavior of Fiber Reinforced Polymers", Invited Talk in the Department of Mechanical Engineering, Clemson University, Clemson, SC, March 29, 2019.
30. "Theoretical Modeling of the Mechanical Degradation of Polymer Composites due to Moisture/Water Absorption and Damage Progression", Presentation at SAE 2019 AeroTech Americas, Charleston, SC, USA, March 27, 2019.
31. "Development of Vibration and Control Systems through Student Projects", Presentation at ASEE SE Section Annual Conference, North Carolina State University, Raleigh, NC, USA, March 12, 2019.
32. "Educating Tomorrow's Engineering Entrepreneur through Participating NSF I-Corps Program", Presentation at ASEE SE Section Annual Conference, North Carolina State University, Raleigh, NC, USA, March 11, 2019.
33. "Crystal Orientations Effects of Copper Single Crystals Simulated by LAMMPS Employing Modified Embedded Atomic Method", Presentation at ASME 2018 International Mechanical Engineering Congress & Exposition, Pittsburgh, PA, USA, November 12, 2018.
34. "Computational Design and Analysis of Nitinol-Based Arch Wedge Support", Presentation at

ASME 2018 International Mechanical Engineering Congress & Exposition, Pittsburgh, PA, USA, November 12, 2018.

35. "Design, Installation, and Validation of a Data Acquisition System", Presentation at ASME 2018 International Mechanical Engineering Congress & Exposition, Pittsburgh, PA, USA, November 12, 2018.
36. "Design and Prototyping of Cleaning Systems for Cylinder Head and Engine Block Conveying Lines", Invited Talk at the 2018 Southeast Symposium on Contemporary Engineering Topics and UAH Engineering Forum, University of Alabama at Huntsville, Huntsville, AL, USA, August 3, 2018.
37. "An Automatic Emergency System for Collision Avoidance Assist of Multi-Trailer Vehicles", Invited Talk, Intelligence Tec Co., Ltd., Suzhou, Jiangsu, China, July 11, 2018.
38. "Development of A Cargo Tractor-Aircraft Collision Avoidance System", Invited Talk, School of Mechanical and Automotive Engineering, Hefei University of Technology, Hefei, Anhui, China, July 9, 2018.
39. "Introduction of a Combined Viscoelasticity-Viscoplasticity-Anisotropic Damage Model with Evolving Internal State Variables for Fiber Reinforced Polymer Composites", Invited Talk, College of Mechanical and Aerospace Engineering, Jilin University, Changchun, Jilin, China, June 28, 2018.
40. "A Multiphase Internal State Variable Model with Rate Equations for Predicting Elastothermoviscoplasticity and Damage of Fiber Reinforced Polymer Composites", Invited Talk, School of Mechanical Engineering and Automation, Xihua University, Chengdu, Sichuan, China, June 21, 2018.
41. "A Course Assessment Tool for A Mechanical Engineering Design Class", Presentation at ASEE SE Section Annual Conference, Embry-Riddle Aeronautical University, Daytona Beach, FL, USA, March 5, 2018.
42. "Development and Optimization of A Wave Energy Conversation System for Deepwater Offshore Platform Applications", Presentation at 2017 Louisiana Energy R&D Forum, Lafayette, LA, USA, October 24, 2017.
43. "Improve Heat Resistance of Composite Engine Cowlings using Ceramic Coating Materials, Experimental Design and Testing", Presentation at SAE 2017 AeroTech Congress & Exhibition, Fort Worth, TX, USA, September 26, 2017.
44. "Mechanical Design, Prototyping, and Validation of a Martian Robot Mining System", Presentation at SAE 2017 World Congress & Exhibition, Detroit, MI, USA, April 6, 2017.
45. "Development of a Particulate Trapping System and Investigation of Effects of Viscosity of the Filter Media Using Experimental and Computational Methods", Presentation at SAE 2017 World Congress & Exhibition, Detroit, MI, USA, April 5, 2017.
46. "Development of a Dynamic Modeling Framework to Predict Instantaneous Status of Towing Vehicle Systems", Presentation at SAE 2017 World Congress & Exhibition, Detroit, MI, USA, April 5, 2017.
47. "Computational Investigation of Penetration Mechanics of Copper with Different Grain Sizes and Nanotwin-Strengthened Copper", Invited Talk at ASME 2016 International Mechanical

Engineering Congress & Exposition, Phoenix, AZ, USA, November 17, 2016.

48. "Process-Structure Relationship of Dynamic Recrystallization Process: Experimental and Computational Study", Invited Talk at the 2016 Southeast Symposium on Contemporary Engineering Topics and JSU Engineering Forum, Jackson, MS, USA, August 26, 2016.
49. "Investigation of Process-Structure-Property-Performance Relation of Alloys Through Multiscale Modeling and Simulation", Invited Talk, School of Mechanical Engineering, Tianjin University, Tianjin, China, June 28, 2016.
50. "Multiscale Experimental-Computational Framework for Process-Structure-Property-Performance Sequence of Materials", Invited Talk, Institute of Mechanics, Chinese Academy of Sciences, Beijing, China, June 27, 2016.
51. "High Velocity Penetration of Metallic Materials, Computational and Experimental Study", Presentation at ASME 2015 International Mechanical Engineering Congress & Exposition, Houston, TX, USA, November 18, 2015.
52. "Development and Application of ISV Plasticity Theory and Multiscale Modeling Approach for Impact and Penetration Simulation of CFRPs and Process-Structure-Property-Performance Study of Metal Foams", Presentation at SAE 2015 AeroTech Congress & Exhibition, Seattle, WA, USA, September 23, 2015.
53. "Understanding of High Velocity Penetration of Copper Subjected to Impact from Nickel Projectiles", Invited Talk, School of Mechanical and Automotive Engineering, Hefei University of Technology, Hefei, Anhui, China, July 2, 2015.
54. "Understanding of Penetration Mechanics of Metals Using a Microstructure-Based ISV Plasticity Damage Model", Invited Talk, State Key Laboratory of Advanced Design and Manufacturing for Vehicle Body, Hunan University, Changsha, Hunan, China, June 16, 2015.
55. "Multiscale Modeling and Simulation of Ni-Cu Penetration", Invited Talk, School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, China, June 4, 2015.
56. "The Configuration Recommendation Strategy Based on Similarity in Product Configuration for Manufacturing", Presentation at ASME 2014 International Mechanical Engineering Congress & Exposition, Montreal, Quebec, Canada, November 20, 2014.
57. "Analytical Investigation and Parametric Study of Lateral Impact Behavior of Pressurized Pipelines and Influence of Internal Pressure", Presentation at ASME 2014 International Mechanical Engineering Congress & Exposition, Montreal, Quebec, Canada, November 19, 2014.
58. "Design, Modeling, and Assessment of a Wave Energy Conversation System for Offshore Oil & Gas Industry and Other Research and Teaching Highlights", Invited Talk at ME Seminar, University of Maine, Orono, ME, March 29, 2014.
59. "Application and Commercialization of Wave Energy Conversion Technology for Offshore Oil and Gas Industry", Invited Talk at Lunch Meeting of Instrument Society of America, Lafayette Section, Lafayette, LA, March 25, 2014.
60. "Research, Teaching, and Plans in Impact and Crashworthiness Analysis, Vehicle Design and Analysis, Computational Solid Mechanics, Wave and Ocean Energy and Other Areas", Invited Talk at ME Seminar, Mississippi State University, Starkville, MS, March 5, 2014.

61. "Establishment of a Wave Energy and Technology Lab to Promote the Experimental Study of Ocean and Wave Energy", Presentation at ASME 2013 International Mechanical Engineering Congress & Exposition, San Diego, CA, USA, November 19, 2013.
62. "Development of an Efficient WEC System to Convert both Kinetic and Thermal Energy from Ocean Waves", Presentation at ASME 2013 International Mechanical Engineering Congress & Exposition, San Diego, CA, USA, November 19, 2013.
63. "Application of Computational Techniques in Structural Impact and Crashworthiness Analysis", Presentation at Graduate Seminar at the Department of Chemical Engineering, University of Louisiana at Lafayette, October 7, 2013.
64. "Instructional Courseware Developed for Thermodynamics Course", Presentation at 2013 ASEE Gulf Southwest Annual Regional Conference, University of Texas at Arlington, Arlington, TX, USA, March 22, 2013.
65. "Research of Structural Mechanics and Other Engineering Problems using Computational, Experimental and Analytical Methods", Invited Talk at ME Seminar, University of Arkansas, Fayetteville, AR, February 22, 2013.
66. "Modeling and Simulation of Performance of Stiffened Plates during Strength Analysis", Presentation at ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, TX, November 14, 2012.
67. "Comparison of Regular Stiffeners and Arbitrarily Oriented Stiffeners in Buckling Analysis", Presentation at ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, TX, November 14, 2012.
68. "Evaluation of Paddle Wheels in Generating Hydroelectric Power", Presentation at ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, TX, November 14, 2012.
69. "Assessing the Potential of Power Production from a Stacked Paddle Hydroturbine", Invited Talk at VerTech 2012 Conference, Crowley, LA, November 7, 2012.
70. "Revitalization of UL Lafayette Steam Lab and Incorporation into Mechanical Engineering Curriculum", Invited Talk, CLECO/UL Alternative Energy Center, Crowley, LA, October 11, 2012.
71. "LaSPACE Related Activities at the University of Louisiana at Lafayette", Briefing at 2012 LaSPACE Council Meeting, Shreveport, LA, October 5, 2012.
72. "Design, Modeling, and Evaluation of a Cost-Effective Particulate Control System", Presentation at SAE 2012 Aerospace Manufacturing and Automated Fastening Conference & Exhibition, Fort Worth, TX, September 19, 2012.
73. "Recent Research Achievements in Engineering Numerical Method and Analysis", Presentation at 2012 International Conference on Computer, Electrical, and Systems Sciences (ICCESSE 2012), Amsterdam, Netherlands, May 14, 2012.
74. "Development of an Analytical Model to Predict the Performance of Paddle Wheel in Generating Electricity and Its Validation Using Computational Fluid Dynamics (CFD)", Presentation at 2012 IEEE Green Technologies Conference (GTC'12), Tulsa, OK, April 19, 2012.

75. "Demonstration of a Cost Effective, Portable and Efficient Particulate Management System", Presentation at NASA Stennis Space Center, MS, April 9, 2012.
76. "CFD Simulation of Phase Particle Entrapment", Presentation at ASME 2011 International Mechanical Engineering Congress & Exposition, Denver, CO, November 17, 2011.
77. "Thin-Walled Parts Structural Performance during Static, Modal, and Dynamic Analysis", Presentation at ASME 2011 International Mechanical Engineering Congress & Exposition, Denver, CO, November 15, 2011.
78. "Computer Modeling and Simulation in Engineering Design and Analysis", Invited Talk, The Center for Advanced Computer Studies Colloquium, University of Louisiana at Lafayette, Lafayette, LA, November 11, 2011.
79. "Application of He's Variational Iteration Method to Solve Nonlinear Differential Difference Equations", Presentation at 2011 Hawaii University International Conferences (HUIC) on Mathematics & Engineering Conference, Honolulu, HI, June 15, 2011.
80. "Solving Volterra Integral Equation of The Second Kind by Applying Legendre Polynomials", Presentation at 2011 Hawaii University International Conferences (HUIC) on Mathematics & Engineering Conference, Honolulu, HI, June 13, 2011.
81. "A Revitalized Steam Lab in UL Lafayette", Presentation at 2011 Industrial Energy Technology Conference (IETC 2011), New Orleans, LA, May 18, 2011.
82. "Application of Computational Techniques in Structural Impact and Crashworthiness Analysis", Invited Talk, Department of Mechanical Engineering, Louisiana State University, Baton Rouge, LA, February 18, 2011.
83. "Crushing Behavior of Thin-Walled Beams", Invited Talk at MCHE Seminar, University of Louisiana at Lafayette, Lafayette, LA, December 2, 2008.
84. "A Review of My Recent Research, Teaching, and Projects", Invited Talk at MEIE Seminar, Texas A&M University – Kingsville, Kingsville, TX, November 3, 2008.
85. "Bending and Modeling of Channel Section Beam", Presentation at 2008 Symposium on Mechanics of Slender Structures, University of Maryland Baltimore County, Baltimore County, MD, July 24, 2008.
86. "Parametric Study on Axial Crushing of Thin-Walled Beams with Box Section", Presentation at 2008 Symposium on Mechanics of Slender Structures, University of Maryland Baltimore County, Baltimore County, MD, July 24, 2008.
87. "Crushing Behaviors of Thin-Walled Members, Modeling and Design", Invited Talk at ME Seminar, Mississippi State University, Starkville, MS, January 25, 2008.
88. "Impact Experimental Analysis and Computer Simulation Using ANSYS", Presentation at 2006 International ANSYS Conference, Pittsburgh, PA, May 2 – 4, 2006.
89. "Development of Simplified Models for Crashworthiness Analysis", Presentation at ME Seminar, University of Louisville, Louisville, KY, January 24, 2006.
90. "Comparisons between Detailed and Simplified Models for Thin-Walled Beams Structures", Presentation at 2005 Huntsville Simulation Conference, Huntsville, AL, October 25 – 28, 2005.

POSTERS AND ABSTRACTS

1. Perkins, R. A., Yang, W.-H., **Liu, Yucheng**, Chen, L., and Yenusah, C., "A Finite Element Analysis to the Effect of Porosity on the Plasticity and Damage Behavior of Mg Az31 and Al 6061 T651 Alloys", ASME 2019 International Mechanical Engineering Congress & Exposition, Salt Lake City, UT, USA, November 10, 2019.
2. Yenusah, C., **Liu, Yucheng**, Ji, Y., Yang, W.-H., Horstemeyer, M. F., and Chen, L., "Investigation of Precipitation of γ" in Inconel 625 at Non-Equilibrium Thermal Conditions during Additive Manufacturing", NSF Mechanics of Materials and Structures (MOMS) Grantees' Meeting, Washington University in St. Louis, St. Louis, MO, October 13, 2019.
3. Yang, W.-H., **Liu, Yucheng**, He, L., Yang, T.-N., Wang, Z., Song, X., Yenusah, C., and Chen, L., "Microstructural Effects on the Effective Piezoelectric Responses of Additively Manufactured Triply Periodic Co-Continuous Piezocomposite", NSF Mechanics of Materials and Structures (MOMS) Grantees' Meeting, Washington University in St. Louis, St. Louis, MO, October 13, 2019.
4. He, G. and **Liu, Yucheng**, "Predicting Flow Stress of Mechanically Milled Aluminum through Artificial Neural Network", Institute for Mathematics and Its Applications (IMA) Hot Topics Workshop, University of Minnesota, Minneapolis, MN, March 6 – 8, 2018.
5. He, G., **Liu, Yucheng**, Bammann, D.J., Francis, D. K., Chandler, M. Q., and Horstemeyer, M. F., "A Multiphase Internal State Variable Model with Rate Equations for Predicting Elastothermoviscoplasticity and Damage of Fiber Reinforced Polymer Composites", Mathematical Modeling of 2D Materials Workshop, University of Minnesota, Minneapolis, MN, May 16 – 19, 2017.
6. Honegger, J. and **Liu, Yucheng**, "Role of Computer Simulation in Exploring Oil and Gas in the Arctic", IMECE2013-66929, 2013 ASME International Undergraduate Research and Design Exposition, San Diego, CA, USA, November 13 – 21, 2013.
7. Baheri, A. K., **Liu, Yucheng** and Hedayati, M., "Study on Tube Hydroforming Process using Finite Element Analysis and Experimental Validation", 2013 ASEE Gulf Southwest Annual Regional Conference, University of Texas at Arlington, Arlington, TX, USA, March 21 – 23, 2013.
8. Chand, M. and **Liu, Yucheng**, "Development of a Numerical Algorithm for Effectively Modeling and Analyzing Aerospace Systems", 2012 LaSPACE Council Meeting, Shreveport, LA, October 5 – 6, 2012.
9. Honegger, J. and **Liu, Yucheng**, "Expedient Wind Energy Potential in Louisiana", 2012 IEEE Green Technologies Conference (GTC'12), Tulsa, OK, April 19 – 20, 2012.
10. Wang, Q.-K. and **Liu, Yucheng**, "Assessing Ultimate Limit Strength of Stiffened Plates through ANSYS Nonlinear Simulation", 2012 ANSYS Simulation Symposium, Dallas, TX, February 7, 2012.
11. Wang, Q.-K. and **Liu, Yucheng**, "A Semi-Analytical Algorithm of Using ANSYS for Pre- and Post-buckling Analysis of Stiffened Plates", 2012 ANSYS Simulation Symposium, Dallas, TX, February 7, 2012.
12. **Liu, Yucheng**, "Research and Education Goals on Computer Modeling and Simulation", 2011

CAREER Award Regional Forum, Louisiana State University, Baton Rouge, LA, November 8 – 9, 2011.

13. Peymani, Y. F., **Liu, Yucheng**, Hayatdavoudi, A. and Ghanbari, S. A., "CFD Simulation of Phase Particulate Entrapment", 2011 ANSYS Regional Conference, Houston, TX, August 31 – September 1, 2011.
14. Wang, Q.-K. and **Liu, Yucheng**, "Using of ANSYS for the Modeling and Simulation of Stiffened Plates", 2011 ANSYS Regional Conference, Houston, TX, August 31 – September 1, 2011.

PROJECTS

Externally Funded Projects (Total Amount: $15.5M)

1. "INTERN Supplement Request for CMMI 1662854", National Science Foundation, 06/01/2021 – 12/31/2021, $43,457, PI.
2. "Machine-Learning-Based Surrogate Modeling of Human Vehicular Vibrational Injuries (HPC Enabled Surrogate Models and Data Analytics", US Army Engineer Research and Development Center, 03/01/2021 – 02/29/2024, $744,698, Award No. W912HZ21C0011, PI.
3. "Development of A Phase Field Model to Simulate Microstructural Evolution in Metal Foaming Process", Mississippi Space Grant Consortium (MSSGC), 08/03/2020 – 07/30/2021, $54,000 (External Grant $36,000 + Institutional Match $18,000), PI.
4. "Surrogate Model Based Design Optimization of Portable Polymer Matrix Fiber Reinforced Composite Structure for Ballistic Impact and Blast Protection", Combat Capabilities Development Command/Department of Defense, 01/22/2020 – 01/06/2022, $404,800, PI.
5. "Developing A Software Tool for Modeling Vehicular Vibration-Related Human Fatigue", US Army Engineer Research and Development Center, 10/01/2019 – 09/30/2021, $349,236, Award No. W912HZ19C0036, Co-PI.
6. "Supplement Request for Travel Funding for G00002928 (CMMI 1662854)", National Science Foundation, 10/01/2019 – 10/31/2019, $7,150, PI.
7. "High Mobility Multipurpose Wheeled Vehicle (HMMWV) Light-Weighting Project", AM General LLC, 03/12/2019 – 5/6/2022, $7,002,907, Co-PI.
8. "Advanced Modeling and Simulation of Multi-Physics Material Response in Geo-Environments: Multiscale Modeling of Cementitious Materials", US Army Engineer Research and Development Center, 09/22/2017 – 09/22/2020, $496,053, Co-PI.
9. "Ground Collision Severity Studies", Federal Aviation Administration (FAA), 08/01/2017 – 01/31/2019, $536,486 (External Grant $268,243 + Institutional Match $268,243), Co-PI.
10. "Airborne Collision Severity Evaluation", Federal Aviation Administration (FAA), 07/01/2018 – 09/30/2020, $561,970 (External Grant $280,985 + Institutional Match $280,985), Co-PI.
11. "I-Corps: Customer Discovery for A Novel Performance-Enhancing Foot Orthoses", National Science Foundation, 04/01/2018 – 09/30/2018, $50,000, Award No. IIP 1824666, PI.
12. "REU Supplement for G00002928 (CMMI 1662854)", National Science Foundation,

01/16/2018 – 01/15/2019, $8,000, PI.

13. "Modeling and Simulation of Multi-Physics Material Response in Geo-Environments", Department of Defense/U.S. Army Tank-Automotive and Armaments Command, 09/30/2016 – 08/31/2018, $599,372, Co-PI.
14. "Theoretical Understanding of Porosity-Induced Mechanisms during Solidification of Cast Alloys and Their Influence on Process-Structure-Property-Correlations", National Science Foundation, 08/01/2017 – 07/31/2020, $386,689, Award No. CMMI 1662854, PI.
15. "Development of A Multiphase Computational Framework for Understanding and Predicting Plasticity and Damage Mechanisms Governing High Strain Rate Performance of Composite Structures", Mississippi Space Grant Consortium (MSSGC), 08/31/2017 – 08/31/2018, $64,988 (External Grant $32,494 + Institutional Match $32,494), PI.
16. "Tractor Collision Avoidance Prototype and GPS-Augmented Brassboard", Industrial Sponsor, 05/01/2017 – 04/30/2018, $709,826, Co-PI.
17. "Improving the Course *Introduction to Vibrations and Controls* by Replacing Current Textbook with Open Course Materials from MIT OpenCourseWare", University of Mississippi and William and Flora Hewlett Foundation, 01/01/2017 – 07/31/2017, $4,000, PI.
18. "Tug Data Acquisition", Industrial Sponsor, 09/17/2015 – 04/30/2016, $224,474, Co-PI.
19. "Tug – Plane Collision Avoidance/Automated Approach to Aircrafts/Inputs", Industrial Sponsor, 08/26/2015 – 10/31/2016, $385,548, Contract No. 15-0049-011, Co-PI.
20. "Recruiting Superior Ph.D. Students in Systems Engineering", Louisiana Board of Regents, 08/01/2015 – 07/31/2019, $240,000, Co-PI.
21. "Microstructure-Property Relationships in Aluminum Foam Sandwich Panels during Impact and Perforation", Louisiana Space Consortium (LaSPACE), 02/01/2014 – 01/31/2015, $67,844 (External Grant $33,922 + Institutional Match $33,922), Contract No. 86301, PI.
22. "Study of Impact Properties and Mechanisms of PP/CNT Nanocomposites through Multiscale Modeling and Simulation", National Science Foundation and Louisiana Board of Regents, 01/01/2014 – 12/31/2014, $10,000, Contract No. LEQSF-EPS(2014)-PFUND-384, PI.
23. "Field Investigation of the Wave Suppressor Sediment Collection (WSSC) System", National Science Foundation and Louisiana Board of Regents, 01/01/2014 – 12/31/2014, $44,706, Contract No. LEQSF-EPS(2014)-OPT-IN-36, Co-PI.
24. "Computational Investigation of Mechanical Behavior and Plasticity Mechanisms of CFRP Composite Panels during Impact and Perforation", NASA EPSCoR Research Award Program (RAP), 09/01/2013 – 08/31/2014, $68,023 (External Grant $34,915 + Institutional Match $33,108), Contract No. LEQSF-EPS(2013)-RAP-04, PI.
25. "Build a Scale Model of the Hydroelectricity Barge and Evaluate Its Electric Generation Ability through Experimental Validation and Computer Simulation", National Science Foundation and Louisiana Board of Regents, 01/01/2013 – 12/31/2013, $20,000, Contract No. LEQSF-EPS(2013)-OPT-IN-21, PI.
26. "Preliminary Evaluation of ANSYS Fluent in Modeling and Solving Environmental Problems", Enviro-Tech Systems, L.L.C., 06/01/2012 – 07/31/2012, $1,500, PI.

27. "Modeling and Simulation of Cyclic Impact of Iceberg on Platforms in the Arctic", National Science Foundation and Louisiana Board of Regents, 09/01/2012 – 06/30/2013, $4,500, Contract No. LEQSF-EPS(2012)-SURE-69, PI.
28. "Investigation of Lateral Impact Behavior of Pressurized Pipelines and Influence of Internal Pressure", Louisiana Board of Regents, 06/01/2012 – 06/30/2015, $280,047 (External Grant $152,290 + Institutional Match $127,757), Contract No. LEQSF(2012-15)-RD-A-28, PI.
29. "Development of Cross-Sectional Warping Functions for Modeling Thin-Walled Beam's Buckling during Dynamic Analysis", National Science Foundation and Louisiana Board of Regents, 03/01/2012 – 02/28/2013, $10,000, Contract No. LEQSF-EPS(2012)-PFUND-297, PI.
30. "UL Ocean Energy and Technology Research Development – Phase I", Chevron Corporation, 10/01/2012 – 04/30/2013, $23,595, PI.
31. "Enhance Modeling and Simulation of Aerospace Systems by Developing an Efficient Algorithm for Solving Differential Equations", Louisiana Space Consortium (LaSPACE), 01/01/2012 – 12/31/2012, $60,831 (External Grant $35,817 + Institutional Match $26,287), Contract No. 63095, PI.
32. "Student Participation in 4th IEEE Region Annual Green Technologies Conference", Advanced Research Projects Agency – Energy (ARPA-E), 04/19/2012 – 04/22/2012, $6,890, PI.
33. "Louisiana State Save Energy Now – Phase II", US Department of Energy (DoE), 10/01/2011 – 09/30/2012, $327,758 (External Grant $178,747 + Institutional Match $149,011), DNR No. 2025-12-01, Co-PI.
34. "Development of a Cost Effective, Portable Particulate Control System to Safely Process Accumulated Particular Matter", NASA EPSCoR program and Louisiana Board of Regents, 07/01/2011 – 06/30/2012, $61,025 (External Grant $30,000 + Institutional Match $31,025), Contract No. NASA(2011)-DART-49, PI.
35. "Travel Application to Visit Dr. Agui at NASA Research Center", NASA EPSCoR program and Louisiana Board of Regents, 07/25/2011 – 07/27/2011, $1,270, PI.
36. "Development of Prototype for Particulate Matter Management System to Promote Safe Removal and Disposal of Accumulated Particles", National Science Foundation and Louisiana Board of Regents, 07/01/2011 – 06/30/2012, $19,982, Contract No. LEQSF-EPS(2011)-OPT-IN-08, PI.
37. "A Technical Review of the Application Potential of a Hydropower Electricity Barge", United International Corporation, 04/15/2011 – 08/15/2011, $10,000, PI.
38. "Training in Modeling and Simulation of Nano-Indentation at OSU Lab", National Science Foundation and Louisiana Board of Regents, 02/13/2011 – 02/27/2011, $3,396 (External Grant $2,000 + Institutional Match $1,396), Contract No. NSF (2011)-LINK-52, PI.
39. "Pilot Solar Thermal Power Plant Installation", Empower Louisiana Renewable Energy Grant Program, Louisiana Department of Natural Resources (DNR) and CLECO, 07/01/2010 – 04/30/2012, $1,210,000 (DNR $565,000 + CLECO $645,000), Co-PI.
40. "Development of a Computationally Efficient Analytical Method for Design and Analysis of Stiffened Plates", Louisiana Space Consortium (LaSPACE), 10/15/2010 – 10/14/2011,

$59,680 (External Grant $29,984 + Institutional Match $29,696), Contract No. 51735, PI.

41. "Computer Design and Simulation of Liquid and Foam Trap for Particulate Matter Management", Louisiana Space Consortium (LaSPACE), 09/01/2010 – 05/31/2011, $41,024 (External Grant $20,235 + Institutional Match $20,789), Contract No. 50137, PI.
42. "Louisiana State Save Energy Now", US Department of Energy (DoE), 10/01/2009 – 02/28/2011, $300,869, Co-PI.
43. "LaSPACE Minority Research Scholarship", Louisiana Space Consortium (LaSPACE), 06/01/2010 – 02/28/2011, $5,000, Contract No. 46982, PI.

Internally Funded Projects (Total Amount: $82.6K)

1. "Engineering Design Inspired by Nature: Culturally Integrated Materials Science Education", Wokini Challenge Grant, South Dakota State University, 6/22/2022 – 6/21/2023, $10,000, PI.
2. "Implementation of MATLAB and Simulink into Vibrations and Controls Class", Teaching Improvement and Innovation Small Grants, Center for Teaching and Learning, Mississippi State University, 8/15/2019 – 5/15/2020, $1,500, PI.
3. "Application of Graduate Recruitment Assistance Grants to Enhance Graduate Student Recruitment and to Increase the Diversity of the Student Body in Department of Mechanical Engineering", Graduate School, Mississippi State University, 11/1/2018 – 9/15/2019, $25,000, Co-PI.
4. "Application of Graduate Recruitment Assistance Grants to Enhance the Graduate Program in the Department of Mechanical Engineering", Graduate School, Mississippi State University, 11/1/2017 – 9/7/2018, $30,000, Co-PI.
5. "Novel Foot Orthotics Design Team", NSF I-Corps Site at MSU, 08/16/2017 – 12/31/2017, $3,000, PI.
6. "Improve Teaching and Learning in Vibrations and Controls Class by Addition of Lab Experiences", Ottilie Schillig Special Teaching Project, Center for Teaching and Learning, Mississippi State University, 05/01/2017 – 05/01/2018, $2,500, PI.
7. "Innovative Foot Orthotics in the Military – Impact of Material and Human Factors", Cross-College Research Grant, Office of Research and Economic Development, Mississippi State University, 01/01/2017 – 12/31/2018, $4,000, Co-PI.
8. "Modeling and Simulation of Mild Steel's Moderate Velocity Impact Behavior at Multi-Length Scales", UL Lafayette Summer Research Project, 05/15/2012 – 08/15/2012, $6,600, PI.

Other Projects

2020-2022 Senior Advisor, "Design and Optimization of a Deployment Structure for a Modular Protection System", US Army Combat Capabilities Development Command.

2017-2020 Senior Advisor, "Transitioning Material Systems from Laboratory to Fabrication", Army Research Laboratory.

2007-2008 Post-Doctor, "Development of Software Tools Supporting Structural Assessment of Wheeled Tactical Vehicles: Phase 3 – CMTS Reliability and Safety

Module", Department of Defense/U.S. Army Tank-Automotive and Armaments Command.

2007-2008 Post-Doctor, "Development of Software Tools Supporting Structural Assessment of Wheeled Tactical Vehicles: Phase 2 – CMTS Functionality Enhancements: Closures, Armor, and Nonstructural Components", Department of Defense/U.S. Army Tank-Automotive and Armaments Command.

2005-2007 Post-Doctor, "Development of Software Tools Supporting Structural Assessment of Wheeled Tactical Vehicles", Department of Defense/U.S. Army Tank-Automotive and Armaments Command.

2004-2005 Research Assistant, "Development of Software Tools Supporting Structural Assessment of Wheeled Tactical Vehicles", Department of Defense/U.S. Army Tank-Automotive and Armaments Command.

2000-2002 Research Assistant, "Improved Design Architectures for Light Platforms – Phase III", Ford Motor Company, US Army.

1998-2000 Product Engineer, "Shanghai General Motor (SGM) Automotive Instrumental Panel Design Project", Shanghai General Motor Company.

OTHER RESEARCH HIGHLIGHTS

- Received a Prototype Grant of $2000 from the Thad Cochran Endowment for Entrepreneurship, Mississippi State University, 2018.
- Research featured in Louisiana EPSCoR Newsletters, 10(1), 2014.

TEACHING

TEACHING INTERESTS

- Computer aided design and engineering
- Finite element analysis
- Kinematics and dynamics
- Mechanics of materials
- Continuum mechanics
- Mechanical and advanced machine design
- Optimum design
- Engineering mathematics
- Thermodynamics

COURSES TAUGHT (TOTAL: **21** courses taught at **4** universities)

Start from	*Course Name*	*Times*
South Dakota State University		
Fall 2024	ME 321 – Fundamentals of Machine Design	1

Spring 2024	ME 323 – Vibrations	1
Fall 2023	ME 492/502 – Continuum Mechanics	1
Spring 2022	ME 791 – Independent Study	2
Fall 2021	ME 490 – Mechanical Engineering Seminar (1hr)	4

Mississippi State University

Summer 2020	ME 8990 – Phase Field Theory (3hr)	1
Fall 2018	GE 3011 – Engineering Entrepreneurship Seminar (1hr)	6
Spring 2017	ME 4643 – Introduction to Vibrations and Controls (3hrs)	9
Spring 2016	ME 7000 – Directed Individual Study (3hrs)	14
Fall 2014	ME 4443 – Mechanical Systems Design (3hrs)	6

University of Louisiana at Lafayette

Summer 2013	ENGR 313 – Dynamics (3hrs)	1
Summer 2012	ENGR 597 – Independent Study (3hrs)	1
Fall 2011	ENGR 513 – Engineering Mathematics (3hrs)	3
Spring 2011	ENGR 597 – Special Topics (3hrs)	1
Spring 2011	MCHE 470 – Special Topics (3hrs)	1
Spring 2011	MCHE 578 – Special Topics (3hrs)	1
Fall 2010	MCHE 478 – Finite Element Analysis (3hrs)	7
Spring 2009	MCHE 301 – Engineering Analysis (3hrs)	5
Spring 2009	MCHE 363 – Engineering Design (3hrs)	8

University of Louisville

Fall 2007	ME 252 – Thermodynamics I (3hrs)	1
Fall 2007	ME 280 – Structured Programming (3hrs)	1
Summer 2007	ME 310 – Thermodynamics II (3hrs)	1
Fall 2006	ME 606 – Continuum Mechanics (3hrs)	1

COURSE AND CURRICULUM DEVELOPED

- Introduced the "Continuum Mechanics" (ME 492/592) course and incorporated it into the Mechanical Engineering curriculum at South Dakota State University, 2023.
- Introduced the "Phase-Field Theory" (ME 8990) course and incorporated it into the Mechanical Engineering curriculum at Mississippi State University, 2020.
- Introduced the "Continuum Mechanics" (MCHE 562) course and incorporated it into the Mechanical Engineering curriculum at the University of Louisiana at Lafayette, 2012.
- Renovated and integrated Steam Laboratory into Mechanical Engineering Curriculum, University of Louisiana at Lafayette, 2011.

INVITED LECTURES

- ACS 102 – Exploratory Studies, South Dakota State University, one lecture each semester since Fall 2021.
- GE 101 – Introduction to Engineering & Technology Professions, South Dakota State University, one lecture each semester since Fall 2021.

- Taught FE Exam review course at University of Louisiana at Lafayette since 2013.
- "Graduate Studies Orientation and Option", MCHE 490 Senior Seminar, University of Louisiana at Lafayette, 2012 – 2014

VISITING SCHOLARS MENTORED

1. Dr. Hao Yu, Associate Professor, College of Mechanical and Electric Engineering, Changchun University of Science and Technology, Changchun, Jilin, P.R. China, 2016-2017.
2. Dr. Qi Gu, Associate Professor, School of Mechanical Engineering, Yancheng Institute of Industry Technology, Yancheng, Jiangsu, P.R. China, 2016-2017.
3. Dr. Xia Wang, Professor, Department of Applied Chemistry, Southwest Petroleum University, Chengdu, Sichuan, P.R. China, 2014-2015.
4. Dr. Niya Li, Associate Professor, College of Computer Science and Technology, Jilin University, Changchun, Jilin, P. R. China, 2013-2014.
5. Dr. Amit Setia, Assistant Professor, Department of Mathematics, Birla Institute of Technology & Science, Pilani – K. K. Birla Goa Campus, Goa, India, 2013-2014.

GRADUATE STUDENTS SUPERVISED

Ph.D. Students Advised/Co-Advised

1. Mary Foss, Ph.D. of Mechanical Engineering, South Dakota State University, "Project-Based Learning in Non-Traditional Settings in Engineering Education", November 2022. Presently Associate Professor at Weber State University.
2. Francie Baker, Ph.D. of Mechanical Engineering, Mississippi State University, "Assessment of Mechanical Engineering Skills: A Synthesis of Industry and Academic Graduate Level Curriculum Requirements", March 2022. Presently Chemist at Naval Surface Warfare Center Dahlgren Division.
3. Caleb O. Yenusah, Ph.D. of Mechanical Engineering, Mississippi State University, "Phase-Field Simulations of the Precipitation Kinetics and Microstructure Development in Nickel-Based Superalloys", March 2022. Presently Postdoctoral Researcher at Los Alamos National Laboratory.
4. Jake Reeves, Ph.D. of Mechanical Engineering, Mississippi State University, "Automation and High-Speed Forming of Thin Layer Composite Materials", February 2022. Presently Senior Hardware Engineer at Amazon.
5. William B. Brown, Ph.D. of Mechanical Engineering, Mississippi State University, "Torque Vectoring to Maximize Straight-Line Efficiency in an All-Electric Vehicle with Independent Rear-Motor Control", October 2021. Presently Modeling and Simulation Engineer at NTA, Inc.
6. Wenhua Yang, Ph.D. of Mechanical Engineering, Mississippi State University, "A Data-Driven Approach for the Investigation of Coupled Effects of Microstructure and Topology on the Piezoelectricity of Additively Manufactured Triply Periodic Bi-Continuous Piezocomposite", July 2021. Presently Lecturer at the University of Houston – Dalian Maritime University Institute.

7. Mounia Malki, Ph.D. of Mechanical Engineering, Mississippi State University, "A Multiphysics Internal State Variable (ISV) Magneto-Thermo-Plasticity-Damage Model", February 2020. Presently Assistant Professor at International University of Rabat.
8. Bradley Huddleston, Ph.D. of Mechanical Engineering, Mississippi State University, "A Multiscale Continuum Fragmentation Model Motivated by Lower Length Scale Simulations", December 2019. Presently Postdoctoral Researcher at Idaho National Laboratory.
9. Nikolay Dimitrov, Ph.D. of Mechanical Engineering, Mississippi State University, "Internal State Variable Modeling of Electroplastic Effects in Metals", December 2018.
10. Ge He, Ph.D. of Mechanical Engineering, Mississippi State University, "A Combined Viscoelasticity-Viscoplasticity-Anisotropic Damage Model for Fiber Reinforced Polymer Composites", December 2018. Presently Assistant Professor at the Lawrence Technological University.
11. Yangqing Dou, Ph.D. of Mechanical Engineering, Mississippi State University, "A Multiscale Study of a Nickel Penetrator Striking a Copper Plate under Very High Strain Rates", December 2018. Presently Data Scientist at Johnson & Johnson.

M.S. Students Advised

1. Swastika Bera, M.Sc. of Mechanical Engineering, South Dakota State University, "Development of Corn Kernel-Based Biocomposite Films for Food Packaging Applications", March 2023.
2. Allen Perkins, M.Sc. of Mechanical Engineering, Mississippi State University, "Development of a Finite Element Model for Ballistic Impact Predictions", July 2021.
3. Hatim Raji, M.Sc. of Mechanical Engineering, Mississippi State University, "PSPP Map of Vitreloy", November 2020.
4. Mouad Benkirane, M.Sc. of Mechanical Engineering, Mississippi State University, "Crystal Plasticity of Steel: α Phase (BCC) Surrounded by γ Phase (FCC) at Grain Boundaries – Impact on Properties", November 2020.
5. Udayan Manikandan, M.Sc. of Mechanical Engineering, Mississippi State University, "Sealing Test Analysis of Rubber Seat in a Knife Gate Valve FEA", November 2020.
6. Nicolas Geeslin, M.Sc. of Mechanical Engineering, Mississippi State University, "Overview of Work Completed and Current Status of Ecocar: Mobility Challenge", March 2020.
7. Madelyn Davis, M.Sc. of Mechanical Engineering, Mississippi State University, "Development and Comparison of 3D Printed Mount Plate vs. G10 Fiberglass Mount Plate for UAV Integration of Multiple Sensors", March 2020. Presently Project Engineer at Dynetics, Inc.
8. Me'Lanae Garrett, M.Sc. of Mechanical Engineering, Mississippi State University, "Stereology of the North American Paddlefish (Polyodon Spathula)", March 2020.
9. Matthew Bilson, M.Sc. of Mechanical Engineering, Mississippi State University, "Analysis and Design of a Custom Vehicle Suspension and Testing of Additive Manufacturing Infill Design", October 2019.
10. Michelle Truong, M.Sc. of Mechanical Engineering, Mississippi State University, "Literature

Review of Additive Manufacturing", September 2019. Presently Product Design Engineer at Apple, Inc.

11. Cameron Boswell, M.Sc. of Mechanical Engineering, Mississippi State University, "Becoming a Mechanical Engineer through the Use of PSPP Creation and Finite Element Simulation", May 2019.
12. Tyler Stranburg, M.Sc. of Mechanical Engineering, Mississippi State University, "Assessment of Nitinol-based Arch Wedge Supports through Finite Element Analysis", October 2017.
13. Evan S. Handler, M.Sc. of Mechanical Engineering, Mississippi State University, "Characterization and Possible Thermal Applications of Additively-Manufactured Inconel 718", March 2017. Presently Engineer at Naval Surface Warfare Center, U.S. Navy.
14. Collin Davenport, M.Sc. of Mechanical Engineering, Mississippi State University, "Dynamic Modeling Framework to Predict Instantaneous Status of a Tractor-Dolly System", March 2017. Presently Research Engineer at the U.S. Army Engineering Research and Development Center.
15. Andrew M. LeClair, M.Sc. of Mechanical Engineering, Mississippi State University, "Tug Data Acquisition and Autonomy Refitting Design", August 2016. Presently Research Engineer at the Energy Production & Infrastructure Center, University of North Carolina at Charlotte.
16. Yangqing Dou, M.Sc. of Mechanical Engineering, Mississippi State University, "Computational Investigation and Parametric Study of Lateral Impact Behavior of Pressurized Pipelines and Influence of Internal Pressure", May 2016.
17. Oladapo S. Akinyemi, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Similitude and Computational Fluid Dynamics (CFD) Simulation of the Model of a Hydropower System in Generating Clean Electricity from Water Flow", May 2015. Presently Adjunct Professor at University of Louisiana at Lafayette.
18. Jeremiah Pastor, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Early Development of a Wave Energy Converter with Applications in the Offshore Oil and Gas Industry", May 2014. Presently Consultant at Strategic Energy Planning LLC.
19. Manoj Chand, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Development of An Efficient Numerical Method for Solving Differential Equations using He's Variational Iteration Technique", December 2013. Presently Senior Mechanical Engineer at Bridgestone Americas.
20. Fengchun Xie, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Design, Prototyping, and Experimental Validation of a Particulate Control System", July 2013.
21. Qingkui Wang, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Numerical Study of Strengthening Effects of Stiffeners on Stiffened Plates Subject to Uniaxial and Biaxial Stress", July 2012.
22. Gary A. Glass, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Investigation of Thin-Walled Structural Performance through Finite Element Analysis and Choose the Best Element Size for Analysis Results", November 2011. Presently Electronic Technician, U.S. Navy.

GRADUATE COMMITTEE MEMBERSHIP

1. Yifan Chen, M.Sc. of Mechanical Engineering, South Dakota State University, "Computational Fluid Dynamics Simulation of Battery Thermal Management System at the Pack Level in Electric Vehicles", April 2024.
2. Mark Rizkalla, M.Sc. of Mechanical Engineering, South Dakota State University, "Feasibility Study of Managing Peak Electrical Loads and Energy Cost Reduction in A Northern Climate Campus", March 2024.
3. Jacob Moore, Ph.D. of Mechanical Engineering, Mississippi State University, "ELEMENTS: A Unified Framework for Supporting Low and High Order Numerical Methods for Multi-Physics Material Dynamics Simulations", June 2021.
4. Sarajane Hill, Ph.D. of Mechanical Engineering, Mississippi State University, "Thermal Experimentation of PA6 and PA66 Thermoplastic in Through Transmission Laser Welding", June 2021.
5. Zouhair El Hadri, M.Sc. of Mechanical engineering, Mississippi State University, "Finite Element and Fatigue Analyses of a P4 Powertrain Mounting System", April 2021.
6. Oudayl Massat, M.Sc. of Mechanical Engineering, Mississippi State University, "Bumper Reinforcement Analysis", November 2020.
7. Chaimae Jouhari, M.Sc. of Mechanical Engineering, Mississippi State University, "Strain Rate Dependence of Cork", November 2020.
8. Narjisse Snoussi, M.Sc. of Mechanical Engineering, Mississippi State University, "Application of Cold Spray Using Natural Materials", November 2020.
9. Safae Belhaj, M.Sc. of Mechanical Engineering, Mississippi State University, "NASA Dynamic Safety Factor", November 2020.
10. Fatima Hilali, M.Sc. of Mechanical Engineering, Mississippi State University, "Side Impact Test and Analysis of Tank-Car (Full vs Empty)", November 2020.
11. Khaoula Chougag, M.Sc. of Mechanical Engineering, Mississippi State University, "Biomechanical Analysis of Human Femur Bone Using FEA", November 2020.
12. Anas Ben Hammad, M.Sc. of Mechanical Engineering, Mississippi State University, "PDB Fuse Insertion Automation", November 2020.
13. Yassine El Marnissi, M.Sc. of Mechanical Engineering, Mississippi State University, "Gasoline Direct Injection", November 2020.
14. Hao Wei Lo, M.Sc. of Mechanical Engineering, Mississippi State University, "Plasma Study on Jet Flame", March 2019.
15. Alex Smith, M.Sc. of Biological Engineering, Mississippi State University, "Finite Element Analysis of Traumatic Brain Injury due to Small Unmanned Aircraft Systems to the Human Head", March 2019.
16. Colby Williams, M.Sc. of Mechanical Engineering, Mississippi State University, "Comparison of Polyether Ether Ketone (PEEK) and Ti-6Al-4V PLIF Implants Applied in Human Spine", October 2018.

17. Michelle Price, M.Sc. of Mechanical Engineering, Mississippi State University, "Design Optimization of A Magnesium Subframe", July 2018.
18. Kalyan Raj Kota, Ph.D. of Aerospace Engineering, Mississippi State University, "Development and Verification of A Finite Element Model of A Fixed-Wing Unmanned Aerial System for Airborne Collision Severity Evaluation", June 2018.
19. Wenhua Yang, M.Sc. of Mechanical Engineering, Mississippi State University, "Microstructural Effects on the Effective Piezoelectric Responses of Additively Manufactured Triply Periodic Co-Continuous Piezocomposite", June 2018.
20. Azizi Turner, M.Sc. of Mechanical Engineering, Mississippi State University, "Eggshell Tailored Polyurethane Foam Composites for Structural Material Design", March 2018.
21. Pushkaraj Sakhare, M.Sc. of Mechanical Engineering, Mississippi State University, "MSU EcoCAR 3 Vehicle Simulation and Controls Contributions", March 2018.
22. Robert W. Fuller, Ph.D. of Mechanical Engineering, Mississippi State University, "Fatigue Life and Crack Growth Predictions of Irradiated Stainless Steels", December 2017.
23. Trevor Smith, M.Sc. of Mechanical Engineering, Mississippi State University, "An ICME Approach to Modeling Plasticity in Copper", October 2017.
24. Mohammad Ali Bagheri, Ph.D. of Mechanical Engineering, Mississippi State University, "Microstructural Behavior and Multiscale Structure-Property Relations for Cyclic Loading of Metallic Alloys Procured from Additive Manufacturing (Laser Engineered Net Shaping – LENS)", October 2017.
25. Omar T. Ibrahim, Ph.D. of Mechanical Engineering, Mississippi State University, "Design Configurations and Operating Limitations of An Oscillating Heat Pipe", June 2017.
26. Thomas McIntyre, M.Sc. of Mechanical Engineering, Mississippi State University, "A Hysteretic Contact Model for the Discrete Element Method", March 2017.
27. Abiodun A. Babalola, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Energy Assessment in Small and Medium Scale Enterprises", November 2013.
28. Ninad P. Dhundur, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Modeling and Control of Cable-Riding Robots", September 2013.
29. Suchethan M. Srinath, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Strain Control and Optimization in Cup Drawing", May 2013.
30. Oluseun Osho, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Energy Management Planning for the Oil Service Industry", May 2013.
31. Anjani K. Mishra, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Six Sigma Based Fixture Design and Process Improvement", May 2013.
32. Edward Evans, M.Sc. of Petroleum Engineering, University of Louisiana at Lafayette, "Prevention and Mitigation of Asphaltene Deposition in an Intermittent CO_2 Flood", May 2012.
33. Zhao Pan, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Fast Modeling and Performance Analysis of a Concentrated Solar Thermal Power Plant", May 2012.
34. Kelly L. Guiberteau, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette,

"Capturing Wave Energy in the Gulf of Mexico", May 2012.

35. Yoosef Peymani F., M.Sc. of Petroleum Engineering, University of Louisiana at Lafayette, "Three Phase Simulation and Optimization of Dissolved Air Floatation Folded Flow (DAF-FF) System Computationally", November 2011.
36. Kirkrai Yuvamitra, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Energy Management Planning for Manufacturing Industry", July 2011.
37. Chunzai Liu, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Mechanical and Thermal Behavior of Vapor Grown Carbon Nanofiber/Low Density Polyethylene Composites", May 2011.
38. Pengfei Zhang, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Process Development and Characterization of Fiber/Polymer Composites Reinforced with Carbon Nanofibers Using a Spraying Technique and Fabricated by VARTM", May 2011.
39. Richard J. Jones, Jr, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Validating Annealed SS304 Properties through Various Material Testing Techniques at the Meso and Micro Scales", May 2011.
40. Sumant S. Kulkarni, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Optimal Design of Fixture Layout in Multi-station Assembly Processes: A Highly Optimized Tolerance Inspired Procedure", May 2011.
41. Amir Pishahang, M.Sc. of Petroleum Engineering, University of Louisiana at Lafayette, "Two New Correlations for CO_2 and Flue Gas Injection under Miscible Condition", June 2010.
42. Venkata M. K. Boyapati, M.Sc. of Mechanical Engineering, University of Louisiana at Lafayette, "Simulation Aided Future State Mapping of Make-To-Order Production Shop", December 2009.

UNDERGRADUATE ADVISING

1. Advisor to Jackrabbit Baja SAE team, South Dakota State University, 2021 – present
2. Advisor of The Makers Guild, Mississippi State University, 2019 – 2021.
3. Advisor to MSU Formula SAE competition team, Mississippi State University, 2018 – 2021.
4. Advisor to MSU Baja SAE competition team, Mississippi State University, 2018 – 2021.
5. Mechanical Engineering Advisor of MSU NASA Robotic Mining Competition team, Mississippi State University, 2015 – 2017.
6. Allen Perkins, Undergraduate Student of Mechanical Engineering, Mississippi State University, 2018 – 2019.
7. Nanqiao Wang, Undergraduate Student of Mechanical Engineering, Mississippi State University, 2017 – 2018.
8. Johnathan Dowell, Undergraduate Student of Mechanical Engineering, Mississippi State University, 2016 – 2017.
9. Jasmin D. Honegger, Undergraduate Student of Mechanical Engineering, University of Louisiana at Lafayette, 2011 – 2014. Earned a PhD degree from Colorado School of Mines

and presently Adjunct Professor at that school.

10. Raul J. Viera, Undergraduate Student of Mechanical Engineering, University of Louisiana at Lafayette, 2010 – 2011.
11. Stefan J. Chu, Undergraduate Student of Mechanical Engineering, University of Louisiana at Lafayette, 2009 – 2011.
12. Rafael M. Alvergue, Jr., Bachelor of Industrial Design, University of Louisiana at Lafayette, "Development of Light Industrial Transport Option", May 2014.

UNDERGRADUATE FUNDED PROJECTS

1. "Design of Conveyor Roller Cleaner", ME 4443 Mechanical Systems Design, Fall 2014, $4,000, Sponsor: PACCAR, Inc.
2. "Cleaning of Gaps in Heavy Duty Diesel Engine Conveying Line", ME 4443 Mechanical Systems Design, Fall 2014, $4,000, Sponsor: PACCAR, Inc.
3. "Improved Heat Resistance of Engine Cowlings through The Implementation of Advanced Processes, Materials and Design Improvements", ME 4443 Mechanical Systems Design, Fall 2014, $10,000, Sponsor: Airbus Helicopters, Inc.

HIGH SCHOOL STUDENT RESEARCHERS

1. Leah Pettit, Mississippi School for Mathematical and Science, MSMS Research Program, 2017-2018.

EXTERNAL PHD DISSERTATION EXAMINER

1. Muhammad Ayaz, Ph.D. of Mathematics, University of Karachi, Pakistan, "The Development of Mathematical Model in the Applied Sciences with Reference to Environmental Quantification of Coastal Water", May 2018.
2. Oyoon Abdul Razzaq, Ph.D. of Mathematics, University of Karachi, Pakistan, "Numerical and Analytical Methods for Solving Fuzzy Differential Equations", January 2017.
3. Nadeem Alam Khan, Ph.D. of Mathematics, University of Karachi, Pakistan, "Analytical Solutions and Numerical Results of Some Nonlinear Oscillators", September 2015.
4. Ram Ranjan Sahu, Ph.D. of Civil Engineering, Indian Institute of Technology Roorkee, India, "Large Deformations on Metallic Shell Structures", June 2013.
5. Najeeb Alam Khan, Ph.D. of Mathematics, University of Karachi, Pakistan, "Analytical Study of Linear and Nonlinear Fractional Order Differential Equations", December 2012.

STUDENT AWARDS AND HONORS

1. Adam Cowl, Alan Cowl, Marcus Decker, and Riley Spade, "Baja SAE Drivetrain", 2024 Engineering Expo, April 23, 2024, South Dakota State University, Second Place.
2. Wenhua Yang, Summer 2021 Bagley College of Engineering Bridge Assistantship, Mississippi State University.

3. Wenhua Yang, 2020 ASME-CIE Hackathon: Identifying, Extracting, Analyzing Value from Large Unstructured Data Sets in Mechanical Engineering, Virtually November 14 – 15, 2020, First Place.
4. Caleb O. Yenusah, Spring 2021 Bagley College of Engineering Bridge Assistantship, Mississippi State University.
5. Ge He, 2019 Graduate Student Researcher Award, Bagley College of Engineering, Mississippi State University.
6. Yangqing Dou, SAE Excellence in Outstanding Oral Presentation Award, SAE 2018 World Congress & Exhibition, Society of Automotive Engineers.
7. Ge He, Fall 2018 Bagley College of Engineering Bridge Assistantship, Mississippi State University.
8. Yangqing Dou, Spring 2018 Bagley College of Engineering Bridge Assistantship, Mississippi State University.
9. Nanqiao Wang, 2017-2018 Undergraduate Research Award from the Bagley College of Engineering, Mississippi State University.
10. Jasmin D. Honegger, 2017 NSF Graduate Research Fellowship.
11. Jonathan Dowell, 2016-2017 Undergraduate Research Award from the Bagley College of Engineering, Mississippi State University.
12. Jasmin D. Honegger, "Role of Computer Simulation in Exploring Oil and Gas in the Arctic", 2013 Engineering and Technology Week – E. R. DesOrmeaux Undergraduate Student Technical Paper Contest, March 2013, University of Louisiana at Lafayette, First Place.
13. Kelly C. Schlabach, President of ASME student chapter (2012-2013), Nominee of the Charles T. Main Student Section Award, nominated by ASME District E in 2013.
14. Yoosef F. Peymani and Arash S. Ghanbari, "CFD Simulation of Phase Particulate Entrapment", 2011 Engineering and Technology Week – Graduate Student Poster Competition, March 2011, University of Louisiana at Lafayette, Third Place.
15. Stefan J. Chu, "Wind Energy in Louisiana", 2010 Engineering and Technology Week – E.R. DesOrmeaux Undergraduate Student Technical Paper Contest, March 2010, University of Louisiana at Lafayette, Third Place.