



Room	156A	156B	156C	157A	157B	163A	163B
	<i>SESSION 8:</i> <b>Human Factors/Biomedical</b> Chair: Prof. Julie A. Skipper - WSU	<i>SESSION 9:</i> <b>Materials II</b> Chair: Dr. Jamie Gengler - SE	<i>SESSION 10:</i> <b>CFD/ Fluid Dynamics III</b> Chair: Prof. Zifeng Yang - WSU	<i>SESSION 11:</i> <b>Manufacturing</b> Chair: Dr. Ravi Penmetsa - AFRL	<i>SESSION 12:</i> <b>Engineering Education</b> Chair: Vincent M. Raska - AFRL	<i>SESSION 13:</i> <b>Diagnostics I</b> Chair: Dr. James Gord - AFRL	<i>SESSION 14:</i> <b>Design &amp; Optimization II</b> Chair: Dr. Paul Hsu - SE
Time							
9:50	<i>DESS11-0036</i> <b>Influence of Crystallographic and Topographic Parameters on Osteoblast Growth</b> Jerry Czarniecki - UD <i>S. Jolivet, J.S. Czarniecki, M.E. Kundrat, K. Lafdi, P.A. Tsonis - UD</i>	<i>DESS11-0088</i> <b>Key Factors Influencing the Structure and Electrochemical Performances of LiFePO<sub>4</sub>/C Composite in Sol-Gel Synthesis</b> Chuang Guan - WSU <i>Hong Huang - WSU</i>	<i>DESS11-0084</i> <b>Overview of Serpentine Inlet and Transonic Fan Interaction Research Program</b> William Copenhaver - AFRL <i>Steven Puterbaugh, Darius Sanders, Chase Nessler, Michael List - AFRL</i>	<i>DESS11-0008</i> <b>Effects of Inaccuracies in Small Non-homogeneous Fiber Specimens</b> Theodore Szelag - AFIT <i>Maj. Ryan O'Hara, Dr. Anthony Palazotto - AFIT</i>	<i>DESS11-0009</i> <b>Reflections from an NSF RET program - Engineering Innovation and Design for STEM Teachers</b> Renee Beach - UD <i>Sandi Preiss - DRSC, Margaret Pinnell, Rebecca Blust - UD, Suzanne Franco - WSU</i>	<i>DESS11-0114</i> <b>2D OH and Temperature of Inverse Diffusion Flames in a Vitiated Cross-Flow using Two-Color PLIF Thermometry</b> Stanislav Kostka - SE <i>David Blunck, Amy C. Lynch - AFRL, Naibo Jiang, Sukesh Roy - SE</i>	<i>DESS11-0025</i> <b>Development of a Statistically Based Validation Process for Computational Simulation</b> Joshua Craven - UD <i>John Doty - UD</i>
10:10	<i>DESS11-0037</i> <b>The Effect of BET Surface Area and Surface Chemistry on the Biological Response of Carbon Materials</b> Jerry Czarniecki - UD <i>J.S. Czarniecki, S. Jolivet, M.E. Kundrat, K. Lafdi, P.A. Tsonis - UD</i>	<i>DESS11-0113</i> <b>Nanoscale Hierarchical Reinforcement for Robust and Durable Composites</b> Anil kumar Karumuri - WSU <i>Sharmila Mukhopadhyay - WSU</i>	<i>DESS11-0087</i> <b>The Generation of Freestream Turbulence for Study of Effects on Distortion Patterns in the Serpentine Diffuser</b> Jesse Johnson - AFRL	<i>DESS11-0005</i> <b>Fabrication of Micro Abrasive Tools by Pulse Electroplating</b> Anuj Dabholkar - UC <i>M.M. Sundaram - UC</i>	<i>DESS11-0071</i> <b>Linking Science and Sports for STEM Education: The case of the Soccer Ball, Gravity, and Friction</b> Adedeji Badiru - AFIT	<i>DESS11-0100</i> <b>Measurements of multiple gas parameters in a pulsed-detonation combustor using three multiplexed Fourier-domain modelocked lasers</b> Andrew Caswell - SE <i>Sukesh Roy - SE, Scott T. Sanders - UWM, Fred Schauer, James R. Gord - AFRL</i>	<i>DESS11-0061</i> <b>Thermal Harvesting for Thermally Activated Reconfigurable System Design</b> Brian Smyers - AFRL <i>James Joo, Gregory Reich - AFRL, Richard Beblo - UDRI</i>
10:30	<i>DESS11-0053</i> <b>Cell uptake and Toxicity of Superparamagnetic Iron Oxide Nanoparticles Functionalized for Nuclear Targeting Applications</b> Christin Grabinski - AFRL <i>Carol Garrett, Amanda Schrand, Saber Hussain - AFRL, Jatuporn Salaklang, Alke Fink, Heinrich Hofmann - EPFL</i>	<i>DESS11-0108</i> <b>The Impact on Phthalocyanine as a Thermoelectric Material When Doping With Iodine.</b> Evan Kemp - UD <i>Douglas Dudis - AFRL, Joe Shumaker, Chenggang Chen - UDRI, Nick Gothard - UTC</i>	<i>DESS11-0058</i> <b>Assessment of Laminar-Turbulent Transition Models for Use in TURBO</b> Rebecca Howard - AFRL	<i>DESS11-0015</i> <b>Optimizing control for pulse electrochemical micromachining</b> Abishek Balsamy Kamaraj - UC <i>Rachael Dyer, M. M. Sundaram - UC</i>	<i>DESS11-0095</i> <b>Developing Residential, Commercial, and Industrial Assessment Programs in Community Colleges</b> Robert Gilbert - SCC	<i>DESS11-0083</i> <b>TDLAS EXPLORER: A Computational Framework for Tunable Diode Laser Absorption Spectroscopy Simulation</b> Robert Yentsch - OSU <i>Dr. Michael S Brown - AFRL</i>	<i>DESS11-0098</i> <b>An Air Logistics Deployment Simulation Model</b> John Byrnes - AFRL
10:50	<i>DESS11-0105</i> <b>Static Posturography as a Quantitative Assessment Tool for Multiple Sclerosis</b> Daniel Petit - UD <i>Dr. Kimberly Bigelow - UD</i>	<i>DESS11-0121</i> <b>Novel Lithographic Processing Technique for Nanorods Thin Films grown Using Oblique Angle Deposition Method</b> Piyush Shah - WSU <i>Howard Knachel, Andrew Sarangan - UD</i>	<i>DESS11-0094</i> <b>Impact of Spatial Multi-Frequency Distortion Patterns on Fan Performance</b> Michael List - AFRL	<i>DESS11-0065</i> <b>Laser Fabrication of Flapping Wing Micro Air Vehicle (FWMAV) Components for Insect Inspired Design</b> Chris Taylor - MLPC	<i>DESS11-0125</i> <b>STEM Curriculum Development for the High School Environmental Science</b> Frank Harris - UVCC <i>Sivaram Gogineni - SE</i>	<i>DESS11-0103</i> <b>Simultaneous Slow and Fast Light: Spectroscopic Implications</b> Anil Patnaik - AFRL <i>Sukesh Roy - SE, James R. Gord - AFRL</i>	<i>DESS11-0001</i> <b>Comparison of Physics Based Modeling Software Tools on Representative Aircraft Gearbox and Fuel Thermal Management Systems</b> Tony Corvo - AVT <i>Matthew Rutledge, Karleine Justice - AVT</i>
11:10	<i>DESS11-0077</i> <b>Variations in In Posturography Testing Methods: Effect of Talking, Visual Fixation, and Time on Plate on Sway Measurements</b> Christopher Denzinger - UD <i>Erin Sutton, Deborah Kinor, Alexander Jules, Kimberly Edginton Bigelow - UD</i>	<i>DESS11-0022</i> <b>Atmospheric Growth of Silicon Nanowires by Chemical Vapor Deposition</b> Qiong Jiang - UD <i>L. Li, K. Lafdi - UD, M. Rummeli, A. Bachmatiuk - LISS, J. Boeckl - AFRL</i>	<i>DESS11-0010</i> <b>Modeling and Simulation of a Dynamic Turbofan Engine Using Simulink</b> Scott Eastbourn - WSU <i>Dr. Rory Roberts - WSU</i>	<i>DESS11-0124</i> <b>Surveillance for Intelligent Emergency Response Robotic Aircraft (SIERRA) Project Manufacturing Improvements</b> Robert Charvat - UC <i>Bryan Brown, William Banks, Dr. Kelly Cohen, Dr. Manish Kumar - UC</i>		<i>DESS11-0020</i> <b>Small Internal Combustion Engine Performance Characteristics at Altitude</b> Steven Crosbie - AFIT <i>Marc D. Polanka - AFIT, Paul J. Litke - AFRL</i>	<i>DESS11-0006</i> <b>Design of a Temporally-Bifurcated Dynamic Electrical System for Maximum Metastable Response with Minimal Thermal Load</b> Austin Doty - UD <i>John H. Doty - UD, Jose A. Camberos, Kirk L. Yerkes - AFRL</i>

**160 - Apollo Room**

11:30 - 12:00 Lunch & Networking, (Visit Buffet and be Seated)

12:00 - 12:50 Keynote Address: Joe Sciabica, *Executive Director of the Air Force Research Laboratory*  
**AFRL's Role in Remotely Piloted Aircraft**

12:50 - 1:00 Recognition of New ASME Fellows: Tim Leger, *ASME Dayton Section Chair*  
1:00 - 1:10 Special Announcements: Haibo Dong, *2011 DESS Co-Chair*

Room	156A	156B	156C	157A	157B	163A	163B
	<b>SESSION 15: Structures/Solid Mechanics II</b>	<b>SESSION 16: Materials III</b>	<b>SESSION 17: CFD/ Fluid Dynamics IV</b>	<b>SESSION 18: Micro Air Vehicles</b>	<b>SESSION 19: Renewable &amp; Clean Energy</b>	<b>SESSION 20: Diagnostics II</b>	<b>SESSION 21: Design &amp; Optimization III</b>
Time	Chair: Prof. Andrew J. Terzuoli - AFIT	Chair: Prof. Feng Liu - WSU	Chair: Prof. Hui Wan - WSU	Chair: Prof. Marc D. Polanka - AFIT	Chair: Dr. Tony Corvo - AVT	Chair: Dr. Robert D. Hancock - AFRL	Chair: Maj Kenneth A. Fisher - AFIT
1:20	<i>DESS11-0093</i> <b>Kinematic Synthesis of Morphing Structures for Design Profiles with Significant Differences in Arc Length</b>  Shamsul Shamsudin - UD <i>Dr. Andrew P. Murray - UD</i>	<i>DESS11-0017</i> <b>Efficient Nanomaterials for Transient Power Spikes</b>  Muhammad Omar Memon - UD	<i>DESS11-0082</i> <b>Fourier Analysis of High Speed Shadowgraph Images around a Mach 1.5 Cavity Flow Field</b>  Ryan Schmit - AFRL <i>Ryan Schmit, Frank Semmelmayer, Mitch Haverkamp, James Grove - AFRL</i>	<i>DESS11-0003</i> <b>Evaluation of the Hawkmoth Thorax for Flapping-Wing Micro Air Vehicles</b>  Alex Hollenbeck - AFIT <i>Dr. Anthony Palazotto - AFIT Dr. Mark Willis - CWU</i>	<i>DESS11-0054</i> <b>An Experimental Study on Dynamic Wind Loads and the Near Wake of a Wind Turbine Model in ABL Wind</b>  Zifeng Yang - WSU <i>Partha Sarkar, Hui Hu - ISU</i>	<i>DESS11-0081</i> <b>High Pressure Femtosecond Coherent Anti-Stokes Raman Scattering (CARS) Spectroscopy</b>  Paul Wrzesinski - NRC <i>James R. Gord - AFRL Waruna D. Kulatilaka, - SE Sukesh Roy - SE</i>	<i>DESS11-0004</i> <b>Systems Engineering in Early Development Planning for the Automated Aerial Refueling (AAR) Project</b>  Robert McCarty - SGC <i>Jacob Hinchman, Daniel Schreiter, Ba Nguyen, Karen Irvin - AFRL</i>
1:40	<i>DESS11-0013</i> <b>Development of a Wave Rotor to Turbonormalize an Internal Combustion Engines</b>  Brandon Smith - AFIT <i>Dr. Marc Polanka - AFIT Dr. John Hoke - ISSI</i>	<i>DESS11-0018</i> <b>Supercapacitance performance of Carbon Nanotubes based Composites</b>  Bakheet Alresheedi - UD <i>Lingchuan Li, C. Priem, Khalid Lafdi - UD</i>	<i>DESS11-0115</i> <b>HIFIRE-1 Aerothermodynamic Flight Measurements</b>  Roger Kimmel - AFRL <i>David Adamczak - AFRL</i>	<i>DESS11-0021</i> <b>The Use of Photogrammetry to Evaluate Dynamic Characteristics of a Manduca Sexta Wing</b>  Jeremy Murray - AFIT <i>Maj. Ryan O'Hara, Dr. Anthony Palazotto - AFIT</i>	<i>DESS11-0068</i> <b>Computational Determination of Guidelines for the Length of the Heat Exchanger Tube in a Ground Loop Geothermal Heating and Cooling System</b>  Jim Menart - WSU <i>Katie Meyer, Paul Gross, Kyle Hughes - WSU</i>	<i>DESS11-0090</i> <b>Gas-Phase Line Thermometry at 1-kHz Using Femtosecond-CARS Line Imaging</b>  Sukesh Roy - SE <i>Waruna D. Kulatilaka, Hans U. Stauffer - SE James R. Gord - AFRL</i>	<i>DESS11-0016</i> <b>Feasibility Study of Orbital Maneuvering using Existing Technology</b>  Thomas Co - AFIT <i>Jonathan Black - AFIT</i>
2:00	<i>DESS11-0067</i> <b>Hermitian Time Interpolation for Membrane Dynamics</b>  Kyle Kolsti - AFIT <i>Dr Donald L. Kunz - AFIT</i>	<i>DESS11-0033</i> <b>Kinetic Growth of Carbon Micro and Nano-Coiled Based Fibers</b>  Muneaki Hikita - UD <i>Khalid Lafdi - UD</i>	<i>DESS11-0045</i> <b>Wing Gait Analysis and Aerodynamics Performance of Dragonfly Hovering Flight</b>  Yan Ren - WSU <i>Haibo Dong, Hui Wan - WSU</i>	<i>DESS11-0046</i> <b>Hardware Integration and Testing of a Hybrid Electric Propulsion System for a Small Remotely Piloted Aircraft</b>  Joseph Ausserer - AFIT <i>Lt Col Frederick G. Harmon - AFIT</i>	<i>DESS11-0069</i> <b>Comparisons of Commercial Ground Source Heat Pump Sizing Codes</b>  Kyle Hughes - WSU <i>James Menart, Paul Gross - WSU</i>	<i>DESS11-0099</i> <b>Propulsion Measurements with Single-Beam fs-CARS</b>  James Gord - AFRL <i>Dmitry Pestov, Marcos Dantus - MSU Paul J. Wrzesinski - NRC Sukesh Roy - SE</i>	<i>DESS11-0027</i> <b>Design and Integration of an Optics Payload for a Cubesat</b>  Margaret Blackstun - AFIT
2:20	<i>DESS11-0066</i> <b>Test of Electromechanical Actuation System For Aircraft Flight Control Surface</b>  Street Barnett - AFRL <i>Justin DelMar - AFRL Zach Lammers - UDRI</i>	<i>DESS11-0048</i> <b>Characterization of composite materials for application in antenna and waveguide design in small Remotely Piloted Aircraft (RPA) structures.</b>  Gabriel Almodovar - AFIT <i>Dr Anthony Palazotto - AFIT</i>	<i>DESS11-0047</i> <b>Influence of Octane number on a Direct injection spark ignition engine</b>  M C Seakher Kasibhatla - WSU <i>Dr. Haibo Dong - WSU</i>	<i>DESS11-0049</i> <b>Low Effort Control Strategy Applicable to Flapping Flyers</b>  Samana Zeyghami - WSU <i>Haibo Dong - WSU</i>	<i>DESS11-0109</i> <b>Characterization of Seebeck Coefficient using PSM</b>  Peter Borton - AFRL <i>Michael Check, Nicholas Gothard, David Turner - UTC Douglas Dudis - AFRL</i>	<i>DESS11-0104</i> <b>Interference-Free, Kilohertz-Rate, Line Imaging of Atomic Hydrogen in Flames Using Femtosecond, Two-Photon, Laser-Induced Fluorescence (fs-TPLIF)</b>  Waruna Kulatilaka - SE <i>Sukesh Roy - SE James R. Gord - AFRL</i>	<i>DESS11-0111</i> <b>Hardware Validation of Hybrid Steering Logic for Single-Gimbal Control Moment Gyroscope Array</b>  Jonathan Wright - AFIT <i>Dr. Eric Swenson - AFIT</i>
2:40	<i>DESS11-0127</i> <b>Study of Strain Energy in Deformed Dragonfly Wings</b>  Hui Wan - WSU <i>Haibo Dong, Yan Ren - WSU</i>	<i>DESS11-0060</i> <b>Growth, Structure, and Thermal Conductivity of Ytria-Stabilized Hafnia Thin Films</b>  Jamie Gengler - SE <i>C.V. Ramana, M. Noor-A-Alam - UT John G. Jones - AFRL</i>		<i>DESS11-0070</i> <b>Limited Degree of Freedom Closed Loop Control Experiments with Flapping Wing MAVs</b>  Garrison Lindholm - AFIT <i>Michael Anderson, Richard Cobb - AFIT</i>	<i>DESS11-0116</i> <b>Algorithmic Approaches to Normalized Energy Consumption</b>  Philip Brodrick - UD <i>Kevin Hallinan - UD</i>	<i>DESS11-0086</i> <b>Spatially and Temporally Resolved Temperature and Shock-Speed Measurement Behind a Laser-Induced Blastwave of Energetic Nanoparticles</b>  Naibo Jiang - SE <i>Sukesh Roy - SE James Gord - AFRL</i>	<i>DESS11-0097</i> <b>CMOS Ultra-low Power Subthreshold Circuit Design</b>  Jian Chen - WSU
3:00	<i>DESS11-0011</i> <b>The Use of Wave Mechanics as Applied to High Speed Wear</b>  David Huber - AFIT <i>Dr. Anthony Palazotto - AFIT</i>	<i>DESS11-0012</i> <b>Transport of Silver Nanoparticles in Saturated Porous Media</b>  Jason Flory - AFIT		<i>DESS11-0106</i> <b>Reynolds Number Effects on Power Number and Thrust Number for Flapping Wing Micro Air Vehicles</b>  John Tekell - AFIT <i>M. Reeder, R. Cobb - AFIT</i>	<i>DESS11-0120</i> <b>Residential Energy Reduction Payback Given Spectrum of Energy Effectiveness</b>  Stephanie Ritchey - UD <i>Roman Villoria, Kevin Hallinan, Robert Brecha, P. Brodrick - UD</i>	<i>DESS11-0110</i> <b>Fiber-Coupled Laser Diagnostics for Temperature and Species-Concentration Measurements in Practical Combustion Devices</b>  Paul Hsu - SE <i>Waruna D. Kulatilaka, Sukesh Roy - SE Anil K. Patnaik - ISSI James R. Gord - AFRL</i>	<i>DESS11-0055</i> <b>Eigenstrain-based Method for Modeling Large-scale Laser Shock Processing</b>  Yongxiang Hu - WSU <i>Ramana V. Grandhi - WSU</i>

<p><i>DESS11-0026</i>  <b>Development of a Hybrid Electric Unmanned Aerial System</b>            Jacob English - AFIT  <i>Michael Molesworth - AFIT</i></p>	<p><i>DESS11-0034</i>  <b>Stability and Control Modeling for the Condor HE-RPA</b>            Christopher Giacomo - AFIT</p>	<p><i>DESS11-0038</i>  <b>Carbon Engineered Scaffolds May Provide An Optimum Balance Of Biologic And Mechanical Properties For Use In Tendon Repair Surgery</b>            Jerry Czamecki - UD  <i>J.S. Czamecki, K. Lafdi, R.M. Joseph, P.A. Tsonis - UD</i></p>	<p><i>DESS11-0056</i>  <b>In-Situ Ultrasonic Monitoring of Epoxy-Foam Infiltration and Cure State</b>            Darius Johnson - AFRL  <i>Michael Gillespie, Cory Snyder, Dr. James Blackshire - AFRL</i></p>	<p><i>DESS11-0062</i>  <b>Experiments in the AFIT Radar Instrumentation Laboratory</b>            Julie Jackson - AFIT  <i>Geoffrey Akers, Brian Roadruck, Aaron Evers, Jose Gutierrez - AFIT</i></p>
<p><i>DESS11-0072</i>  <b>Terahertz Spectroscopic Reflection and Scattering Measurements of Aligned CNT Arrays as a Function of Carbon Nanotube Length</b>            Satya Ganti - WSU  <i>Lindsay Owens, Stanley Smith IV, Jason Deibel - WSU</i></p>	<p><i>DESS11-0073</i>  <b>Analytical Chemical Sensing using high resolution Terahertz/submillimeter wave spectroscopy</b>            Alyssa Fosnight - WSU  <i>Benjamin L. Moran, Ivan R. Medvedev - WSU</i></p>	<p><i>DESS11-0078</i>  <b>The Effect of Carbon Nanotubes on the Biocompatibility and Electrical Activity in the Growth and Development of Neurons</b>            Tracey Hong - VU  <i>Tiffany Dai, Massoud Kraiche (PhD), Gabriel Silva, (PhD) - UCSD</i></p>	<p><i>DESS11-0079</i>  <b>Crucible Coating Analysis by THz Spectroscopy</b>            Ryan Shaver - WSU  <i>Hannah Jones, Jason Deibel - WSU</i></p>	<p><i>DESS11-0080</i>  <b>Characterization of Metamaterial Devices Using Terahertz Time-Domain Spectroscopy</b>            Hannah Jones - WSU  <i>Satya Ganti, Jason A. Deibel - WSU            Ronald Coutu - AFIT</i></p>
<p><i>DESS11-0102</i>  <b>Fabrication and Optimization of Low Temperature Sintering Die Attach Preforms via the Tape Casting Method for use in High Temperature Environments</b>            Jared McCoppin - WSU  <i>H. Vijwani, D. Young - WSU            R. Miller, M. Rottmeyer - AFRL</i></p>	<p><i>DESS11-0107</i>  <b>Thermal Transport across Water-Graphite Interfaces</b>            Daniel Forero - AFRL  <i>Patrick Shamberger - AFRL</i></p>	<p><i>DESS11-0123</i>  <b>Integrated analysis of cicada freely forward flight</b>            Kuo Gai - WSU  <i>Hui Wan, Yan Ren, Zhe Ning, Haibo Dong - WSU</i></p>		

Abbreviations:

AFIT = Air Force Institute of Technology  
 AFRL = Air Force Research Laboratory  
 AS = Applied Science Inc.  
 AVT = Avetec Inc.  
 CSU = Central State University  
 CWU = Case Western University  
 DRSC = Dayton Regional Stem Center

EPFL = Ecole Polytechnique Fédéral Lausanne  
 ISSI = Innovative Scientific Solutions Inc.  
 ISU = Iowa State University  
 LISS = Leibniz-Institute for Solid State  
 MLPC = Mound Laser & Photonics Center Inc.  
 MRI = Modus Recte, Inc.  
 MSU = Michigan State University

NRC = National Research Council  
 OSU = The Ohio State University  
 PAID = Petroleum Institute Abu Dhabi  
 SCC = Sinclair Community College  
 SE = Spectral Energies LLC  
 SGC = SynGenics Corp.  
 UC = University of Cincinnati

UCSD = University of California, San Diego  
 UD = University of Dayton  
 UDRI = University of Dayton Research Institute  
 UES = UES Inc.  
 UI = University of Idaho  
 UND = University of Notre Dame  
 UT = University of Texas

UTC = Universal Technology Corp.  
 UVCC = Upper Valley Career Center  
 UWM = University of Wisconsin-Madison  
 VU = Vanderbilt University  
 WSU = Wright State University