

TECHNICAL PROGRAM

8:00 AM: Symposium Opening – Tortugas Room

| | Tortugas Room <i>Session Chair: Dr. Chunpei Cai, NMSU</i> | Theater <i>Session Chair: Dr. Tom Burton, NMSU</i> | Rio Hondo Room <i>Session Chair: Mr. Paul Benshoof, 746 TS</i> | Restaurant <i>Session Chair: Col. Tom Currie, Jr., 46 TG</i> |
|--------------|---|--|---|--|
| 8:30 | C-12J Store Flight Clearance <i>Capt. Jose Gutierrez, 586th Flight Test Squadron</i> | Gasifying Agent Effects Upon Self-Propagating High-Temperature Synthesis of Nanoscale Aluminum-Titanium Metallic Foams <i>Dennis Turnbull, 846th Test Squadron</i> | The State of Open Source Software <i>Dave Thomas, New Mexico Linux Corporation</i> | 746 Test Squadron Capabilities <i>2nd Lt. Seongmin Yang, 746th Test Squadron</i> |
| 9:00 | Modeling Free Shear Layers in a Symmetry-Reduced Space <i>Bashar Qawasmeh, NMSU</i> | NMSU OSCERSat Student Payload for Spaceport America Student Launch Program <i>Seve Sisneros et al, NMSU</i> | Trends in Software Development <i>Don McCoy, CodeSourcery</i> | Power Management in Embedded Systems: A Basic Approach <i>Salvador Almanza, NMSU</i> |
| 9:30 | Approximate Solutions for Low Magnetic Reynolds Number Gas Flows within a Two-Dimensional Channel <i>Khaleel Khasawneh, NMSU</i> | The Navigation Test and Evaluation Laboratory <i>2nd Lt. Matthew Steele, 746th Test Squadron</i> | Hydrogen Injection into the Internal Combustion Engine <i>George Twohy, The Twohy Group</i> | Entrepreneurship and Emerging Technologies Commercialization <i>Dr. Alberto Correa, UTEP</i> |
| 10:00 | BREAK | | | |
| 10:15 | A High-Pressure Driven Compressible Gas Flow Study Inside a Two-Dimensional Uniform Microchannel <i>Jared Hooser, Wendell Hull & Assoc. & NMSU</i> | New Mexico's Place in Space <i>Mike Shinabery, NM Museum of Space History</i> | Solar-Electric Systems <i>Patty Bruton, The Solar Biz</i> | Quality Management System: New Mexico 9000 <i>Ken Manicki, NM EDD – Office of Science and Technology</i> |
| 10:45 | ISPCS 2008 <i>Judy McShannon, NM Space Grant Consortium</i> | Advanced Inertial Test Laboratory Improvements <i>2nd Lt. William Rock, 746th Test Squadron</i> | Self-Installed Residential Solar-Electric System <i>Bob Brown, ARL</i> | High Speed Rocket Sled Testing <i>Deneen Black, 846th Test Squadron</i> |
| 11:15 | Spaceport America: Building the Dream of Commercial Space <i>Aaron Prescott, NM Space Authority</i> | 3-D Photography and Aerial Applications <i>Kevin Dunshee, Silver Linings Aviation, Inc</i> | Three Phase Power for Home Projects, Even If You Don't Have Three Phase Power <i>Kamal Shouman, 846th Test Squadron</i> | Biofuels in the Borderland <i>Victor Valenzuela, TCEQ</i> |
| 11:45 | LUNCH – Tortugas Room <i>Distinguished Luncheon Speaker Dr. George Bibel</i> <i>"Beyond the Black Box: The Forensics of Airplane Crashes"</i> | | | |
| | <i>Session Chair: Dr. Mingjun Wei, NMSU</i> | <i>Session Chair: Dr. Mike Hooser, 846 TS</i> | <i>Session Chair: Mr. David Minto, 46 TG</i> | <i>Session Chair: Mr. Tony Schauer, 846 TS</i> |
| 1:15 | Numerical Simulation of Flexible Flapping Wings in Fully-Coupled Motion <i>Tao Yang, NMSU</i> | External Fixation Devices & Application in Foot, Ankle & Leg Reconstructive Surgery <i>Dr. John J. Anderson, Alamogordo Orthopaedics</i> | Testing Gyroscopes: Helping Hubble Photograph the Final Frontier <i>2nd Lt. Christine Laning, 746th Test Squadron</i> | Good Enough Modeling at HHSTT <i>George Ayers, 846th Test Squadron</i> |
| 1:45 | Identification of UAV Dynamics Model Parameters <i>Khaled Hatamleh, NMSU</i> | Chimpanzees (Pan Troglodytes) in Aerospace and Biomedical Science <i>Dr. Paul Langner, Alamogordo Primate Facility</i> | Fracture Properties of Nanotube-reinforced Plastics <i>Dr. Pedro Cortes, NMSU</i> | Project Lead the Way: Team America Rocket Competition <i>Jon Davis, DACC</i> |
| 2:15 | Advances at the UAS Flight Center <i>Dennis Zaklan & Craig Jessin, PSL</i> | Bone Grafting & Orthobiologics in Lower Extremity Reconstructive Surgery <i>Dr. John J. Anderson, Alamogordo Orthopaedics</i> | 120" Centrifuge Testing <i>Jim Killian, 746th Test Squadron</i> | The V-2 Rocket: Technology and Legacy of a Spaceflight Icon <i>Jim Daniel, 846th Test Squadron</i> |
| 2:45 | BREAK | | | |
| 3:00 | An Innovative MAV Test Stand <i>Carlos Ortega, NMSU</i> | <i>Advances in 3D X-Ray Volume Inspection</i> <i>Stuart Baker, IMTEC</i> | Inertial Property Algorithm Verification (IPAV) <i>Micah Kecman, NMSU</i> | Rail Slipper Gate <i>Adam Goswick et al, NMTech & 846th Test Squadron</i> |
| 3:30 | Solar Powered UAV <i>Dr. Jerry Bowman, BYU</i> | <i>Complex Lower Extremity Fractures: The Good, The Bad and the Ugly</i> <i>Dr. John J. Anderson, Alamogordo Orthopaedics</i> | JAMFEST: An Innovative GPS Jamming Program <i>Paul Benshoof, 746th Test Squadron</i> | Dial-A-Pull-down <i>Jessica Culpepper et al, NMTech & 846th Test Squadron</i> |
| 4:00 | Unmanned Aircraft Systems Operator Requirements <i>Stephen Hottman et al, PSL</i> | <i>746 Test Squadron Environmental Laboratory Capabilities</i> <i>James Manns, 746th Test Squadron</i> | Instrumentation Support of Aircraft Ejection Testing at the Holloman High Speed Test Track <i>George Gregory, 746th Test Squadron</i> | Mammoth Tracks on White Sands Missile Range <i>David Bustos, White Sands National Monument</i> |

Contributing Sponsors

The Boeing Company



DISTINGUISHED LUNCHEON SPEAKER



Dr. GEORGE BIBEL

"Beyond the Black Box: The Forensics of Airplane Crashes"

Dr. George Bibel is a professor of mechanical engineering at the University of North Dakota, Grand Forks, North Dakota. He has a Ph.D. from Case Western Reserve University and is a former NASA researcher and summer faculty fellow. Additionally, Dr. Bibel is an active member of the American Society of Mechanical Engineers Pressure Vessel Code Committee and an active researcher for the Pressure Vessel Research Council, national committees that write design rules adopted by law as a matter of public safety for pressure vessels, boilers and nuclear reactors. He recently completed the Air Line Pilot's Association Advanced Accident Investigation course and published *Beyond the Black Box: The Forensics of Airplane Crashes*, where he provides a behind-the-scenes look at plane wreck investigations, showing how forensic experts, scientists, and engineers analyze factors like impact, debris, loading, fire patterns, metallurgy, fracture, crash testing, and human tolerances to determine why planes fall from the sky - and how the information gleaned from accident reconstruction is incorporated into aircraft design and operation to keep commercial aviation as safe as possible.



American Institute of
Aeronautics and Astronautics



SOUTHWEST REGIONAL TECHNOLOGY SYMPOSIUM

**New Mexico Farm & Ranch
Heritage Museum
Las Cruces, NM**

Thursday, 16 April 2009

8:00 am – 4:30 pm



THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

ALOMOGORDO - HOLLOMAN
SECTION

