



Association of University Technology Managers®
Advancing Discoveries for a Better World®

AUTM 2015 Partnering Forum

Aerospace Technologies

Hosted by Wichita State University

Rhatigan Student Center • Wichita, KS

June 9 – 10, 2015



www.autm.net/AerospaceForum

Welcome to Wichita!

AUTM thanks the host of this partnering meeting, Wichita State University.



The AUTM Partnering Forum is a unique opportunity for technology transfer and licensing specialists from universities and research institutions to connect with their counterparts in business development and intellectual property from the aerospace industry.

AUTM Connect™

The AUTM Partnering Forum features AUTM Connect™, the online partnering and networking tool with its mobile application for iPhone and Android. The program enables attendees to create detailed organizational and personal profiles, search for other attendees, send and receive messages, easily search for licensing and collaboration opportunities and effortlessly schedule one-on-one meetings. Networking has never been easier!



About AUTM

The Association of University Technology Managers is a nonprofit organization dedicated to bringing research to life by supporting and enhancing the global academic technology transfer profession through education, professional development, partnering and advocacy. AUTM's more than 3,200 members represent managers of intellectual property from more than 300 universities, research institutions and teaching hospitals around the world as well as numerous businesses and government organizations.

AUTM 2015 Partnering Forum Committee

Committee Members:

Lauren MacLanahan, J.D., *Georgia Tech Research Corp*

Denichiro Otsuga, Ph.D., RTTP, *CSU Ventures Inc.*

Stephen Snider, *University of Toledo*

Gayatri Varma, Ph.D., *University of Maryland*

Kevin L. Wozniak, M.B.A., RTTP, *Georgia Tech Research Corp*

Registered Technology Transfer Professional (RTTP)

Demonstrate your expertise in the academic technology transfer profession by becoming a Registered Technology Transfer Professional (RTTP). All AUTM professional development courses and designated educational offerings and meetings are eligible for continuing education (CE) credits, which support your registration application. For more information about the registration process and requirements, visit the Alliance of Technology Transfer Professionals website at www.attp.info.

Certified Licensing Professionals (CLP) Continuing Education

Certified Licensing Professionals are required to demonstrate continued competence in their field to maintain their certification status. Individuals who hold the CLP designation can renew their credential by earning at least 40 continuing education (CE) credits. All AUTM professional development courses and designated educational offerings on the topics of licensing, technology transfer and technology commercialization at AUTM conferences or meetings are eligible for CLP continuing education (CE) credits for certification renewal. Visit www.licensingcertification.org for more information on the certification requirements.

AUTM thanks Partnering Forum Sponsors



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Meeting Agenda

Tuesday, June 9

6 – 8 p.m.

Registration Open

Location:

Hilton Garden Inn, Garden Room Foyer

7 – 8:30 p.m.

Welcome Networking Reception

Location:

**Garden Room 2 & 3
Hilton Garden Inn
2041 North Bradley Fair Parkway
Wichita, KS**

Wednesday, June 10

*Shuttle service from the Hilton Garden Inn to Wichita State University will be available.

7 a.m. – 4 p.m.

Registration

Location:

**Wichita State University
Rhatigan Student Center
Sage Lounge Foyer**

7 – 8 a.m.

Breakfast

Location:

Rhatigan Student Center, Sage Lounge Foyer

8 – 8:30 a.m.

Welcome and Introductions

Location:

Santa Fe Trail Room

Speakers:

John Bardo, *President, Wichita State University*
John Tomblin, Ph.D., *Vice President, National Institute for Aviation Research, Wichita State University*

8:30 – 9:30 a.m.

Panel Session A

Success Stories of Partnerships in Academia and Industry – What has Worked Historically and What Industry Needs from Academia

Location:

Santa Fe Trail Room

Moderator:

Mark Torline, *Director, Center for Entrepreneurship, Wichita State University*

Speakers:

Albert “Ab” Dirkzwager, *Director, Textron Aviation*
Vandad Espahbodi, *Co-founder, Starburst Accelerator*
Lamia Salah, Ph.D., *Senior Research Engineer & Technical Director, National Institute for Aviation Research, Wichita State University*
John Tomblin, Ph.D., *Vice President, National Institute for Aviation Research, Wichita State University*
John Welch, *Chief Scientist & Technical Fellow, Spirit AeroSystems*

This panel composed of both industry and academic contributors will detail the paths taken to increase the amount of collaborative research between academia and industry. Each industry

representative will discuss what they are seeking when evaluating university aerospace technologies and their company’s preferred structure for working with academic institutions. Discover how technology transfer professionals can better shop and position their aerospace technologies for better “matchmaking” with potential commercial partners. Whether through collaborative research projects, sponsored research, licensing or startup ventures, this panel will discuss the ways they’ve been involved in the translation process. Learn from those with first-hand experience what has worked in the past and how to increase the amount of collaborative research between your university or business.

9:30 a.m. – 10:30 a.m. Technology Showcase Introductions

Location:

Santa Fe Trail Room

One representative from each institution/company will be provided with an opportunity to speak for 2-3 minutes without slides. Four points should be covered:

- Your name and your function;
- Introduce any other colleagues who are also attending;
- Provide a brief statement about why you are here or what you hope to accomplish in the meeting; and
- If applicable, describe key strengths or areas of interest in aerospace at your institution/company; e.g. describe major centers of excellence or expertise.

10:30 – 11:30 a.m. Break and Technology Showcase Viewing

Location:

Sage Lounge Foyer

With the Technology Catalog as a guide, attendees may visit tables to learn about specific opportunities with which they may follow-up and schedule one-on-one time in the afternoon. Participants may provide a variety of opportunity descriptions, published papers, brochures, one-pagers, and other marketing collateral.

11:30 a.m. – 12:30 p.m. Networking Lunch

Location:

Shocker Dining Hall

12:30 – 1:30 p.m.

Panel Session B

Unmanned Aircraft – Past, Present and Future: How to Tap Into this Growing Field

Location:

Santa Fe Trail Room

Moderator:

Mike Moore, *Associate VP, University of North Dakota*

Speakers:

Tom Aldag, *Director of Research & Development, National Institute for Aviation Research*
Kurt Carraway, *UAS Flight Operation Manager, Applied Aviation Research Center at Kansas State University*
Walt Lappert, *Chief Technical Officer, PowerDrones*
John Martens, *Founder and CEO, NMotion UAS, LLC*

This interactive session will be led by academic researchers and industry executives involved in the growing field of unmanned aircraft. A Q&A session will follow the panel discussion.

Meeting Agenda

Tuesday, June 9

1:30 – 3:30 p.m. **Technology Showcase Viewing and Break-Out for One-on-One Meetings**

Location: **Pike Room and Lucas Room**

Take advantage of AUTM Connect™ to set up your meetings and make the most of your time in Wichita. Meeting areas are available in the Pike and Lucas rooms to discuss specific opportunities of mutual interest in greater detail.

3:30 – 4 p.m. **Meeting Conclusion and Wrap Up**

Location: **Santa Fe Trail Room**

4:00 – 4:15 p.m. **Networking During Travel to the National Center for Aviation Training (NCAT) Facility**

We will travel by bus to NCAT for a tour of the facility.

4:15 – 4:45 p.m. **Tour of the National Center for Aviation Training (NCAT) Facility**

4:45 – 5 p.m. **Travel Back to Wichita State University on Charter Bus**

Aerospace Technologies Available for Licensing

University:
Embry-Riddle Aeronautical University

Category	Type	Title
Aerodynamics/Fluid Dynamics		<i>Fuel Slosh Suppression System</i>
Structures/Solid Mechanics/Composites/ Materials	Structures	<i>Highly Vented Truss Wall Honeycomb Structures and Methods of Fabrication Imaging Technologies</i>
Flight Mechanics/Controls /Simulation	Tactical	<i>Bistatic Radar System Using Satellite-based Transmitters with Ionospheric Compensation</i>
Other	Jet Propulsion Plant	<i>Electrically Coupled Counter-Rotation for Gas Turbine Compressors</i>
Other	Jet Propulsion Plant	<i>Multi-Stage Axial Compressor with Counter-Rotation Using Accessory Drive</i>
Other	Jet Propulsion Plant	<i>Multi-Stage Axial Compressor with Counter-Rotation</i>
Other	Control System for Hybrid Motor	<i>Hybrid Clutch Assembly for an Aircraft</i>
Other	Aircraft Hybrid Motor	<i>Hybrid Assembly for an Aircraft</i>
Other	Fixed-wing Rotorcraft	<i>Lift Generating Device</i>

University:
Georgia Tech Research Corp

Category	Type	Title
Aerodynamics/Fluid Dynamics		<i>New Method To Measure Lift And Pitching Moment On A Wing</i>
Aerodynamics/Fluid Dynamics		<i>Continuous Rotation Method for Airloads</i>
Aerodynamics/Fluid Dynamics		<i>Aerodynamic Heat Exchangers</i>
Aerodynamics/Fluid Dynamics		<i>Virtual Aero-shaping of Airfoils at Low Angles of Attack</i>
Aerodynamics/Fluid Dynamics		<i>Aerodynamic Drag Reduction at Low Angles of Attack</i>
Aerodynamics/Fluid Dynamics		<i>Structural Control of Platforms in Cross Wind using Active Aerodyn Bleed</i>
Aerodynamics/Fluid Dynamics		<i>Fluidically-assisted "Artificial Nose" for Fast Sensing of Chemical and Biological Substances</i>
Aerodynamics/Fluid Dynamics		<i>Syntactic Foam With Residual Internal Pressurization</i>
Structures/Solid Mechanics/Composites/ Materials		<i>Unified Framework: To Determine Modal Response and Natural Frequencies of Damaged Structures</i>
Structures/Solid Mechanics/Wave Steering		<i>Adaptive Multiphase Materials for Impact Energy Absorption and Stress</i>

University:
Georgia Tech Research Corp (continued)

Category	Type	Title
Structures/Solid Mechanics/Composites/Materials		<i>Condor</i>
Flight Mechanics/Controls/Simulation		<i>Robotic Legged Landing Gear for Rotorcraft</i>
Flight Mechanics/Controls/Simulation		<i>Ionization CPD Gyroscope</i>
Propulsion and Combustion		<i>Carbon Nanotube Cold Cathodes (CNCC)</i>
Propulsion and Combustion		<i>Distributed Combustion Concept for Low NOx at High Temperatures</i>
Propulsion and Combustion		<i>A Thermoacoustic Engine Using a Pulse Combustion Process</i>
Unmanned Systems		<i>Vertical Take-off, Electric Reconfigurable Lifting Rotor</i>
Other		<i>Models, Algorithms and Metrics for Evaluating Resilience of Power Distribution Under Severe Weather Disruptions</i>

University:
Missouri University of Science & Technology

Category	Type	Title
Aerodynamics/Fluid Dynamics	Drag Reduction	<i>Drag Reduction Utilizing Driven Micro-cavities</i>
Structures/Solid Mechanics/ Composites/ Materials	Direct Metal Deposition	<i>Fully Forged Structure from DMD with Friction Stir Processing</i>
Structures/Solid Mechanics/ Composites/ Materials	Additive Manufacturing	<i>Controls and Sensors for Enhanced Additive Manufacturing</i>
Structures/Solid Mechanics/ Composites/ Materials	Additive Manufacturing	<i>Freeze-form Extrusion Fabrication of Functionally Gradient Composite Parts</i>
Structures/Solid Mechanics/Composites/ Materials	Welding	<i>Ceramic Welds, and a Method for Producing the Same</i>
Structures/Solid Mechanics/Composites/ Materials	Aerogel	<i>Multifunctional Porous Aramids (Aerogels) and Fabrication Thereof</i>
Structures/Solid Mechanics/Composites/ Materials	Aerogel	<i>Nanoporous Vanadium Oxide Aerogels and Methods of Preparation</i>
Structures/Solid Mechanics/Composites/ Materials	Aerogel	<i>Flexible To Rigid Nanoporous Polyurethane-Acrylate (Puac) Type Materials for Structural and Thermal Insulation Applications</i>
Unmanned Systems		<i>Adaptive Control with Nonlinear Reference Systems</i>
Unmanned Systems		<i>Distributed Adaptive Control Methods for Resilient Networked Multiagent Systems</i>
Unmanned Systems		<i>Active-Passive Networked Multiagent Systems</i>
Other	Nondestructive Evaluation	<i>Microwave and Millimeter Wave Imaging System</i>

University:
University of Kansas

Category	Type	Title
Unmanned Systems	Accurate Air Data Measurement (Sensors with Military and/or Commercial Aircraft Applications)	<i>High Accuracy Air Data Sensor Probe</i>
Unmanned Systems	UAV Avionics and Sensing	<i>Low-altitude Laser Altimeter to Assist UAV Autoland</i>
Unmanned Systems	Collision Avoidance	<i>Multichannel Sense-and-Avoid Radar for Small UAVs</i>
Unmanned Systems	UAV Navigation	<i>Navigation for Small UAVs Using Ground-based Broadcast Transmitters</i>
Unmanned Systems	Tethered UAV	<i>Tethered Hovering Platform (THP)</i>
Structures/Solid Mechanics/Composites/ Material	Structure (Certified Aerospace Materials)	<i>Pressure Adaptive Honeycomb</i>
Other	Military Applications	<i>Supersonic Hovering Air Vehicle (SHAV)</i>
Other	Anti-collision Systems/ Navigation	<i>Micro Anemometer Anti-fouling Instrumentation and Apparati</i>

University:
University of New Hampshire

Category	Type	Title
Structures/Solid Mechanics/Composites/Materials	Structures	<i>Treatment of Anodized Aluminum Components</i>
Flight Mechanics/Controls/Simulation	Tactical	<i>Sheepdog, the Data Center Watchdog - Sensor Network Monitoring Software</i>
Flight Mechanics/Controls/Simulation	Tactical	<i>Environmental Response Management Application (ERMA)</i>
Flight Mechanics/Controls/Simulation	Computational Mechanics i.e. Certification Simulations, Crash Modeling	<i>Wheeler RumI; Computer Science</i>
Unmanned Systems	Vehicle Detection, Communications and Monitoring	<i>Optical Based Pose Detection for Multiple Unmanned Underwater Vehicles (UUVs)</i>
Other	Network Interoperability/	<i>UNH-Interoperability Lab Offers Testing Tools in Over 20 Different Data Networking and Storage Technologies</i>
Other	Data Transmission	<i>Systems and Methods for Network Transmission of Big Data</i>
Other	Data Transmission	<i>Empirical Mode Decomposition for Detection of Low Power Wireless Signal</i>
Other	Energy Storage	<i>Aqueous Phase Potassium-ion Energy Storage Device Including Manganese Oxide Spinel Electrodes and Aqueous Electrolytes</i>
Other	Antenna	<i>High Frequency Magnetic Field Antenna</i>

University:
University of North Dakota

Category	Type	Title
Flight Mechanics/Controls/Simulation	Navigation & Flight Controls	<i>Airspace Risk Mitigation System</i>
Flight Mechanics/Controls/Simulation	Tactical	<i>System of Using Vehicle and Flight Data to Measure Emissions from Gas and Turbine Engines</i>
Flight Mechanics/Controls/Simulation	Tactical	<i>Micro-Electromechanical Systems (MEMS) Enhanced Flight Deck or Pilot Equipment</i>
Flight Mechanics/Controls/Simulation	Computational Mechanics	<i>Analyzing Flight Data Using Predictive Models</i>
Flight Mechanics/Controls/Simulation	Computational Mechanics	<i>Flight Parameter Prediction Using Neural Networks</i>
Unmanned Systems	Navigation	<i>Autonomous Mid-air Collision Avoidance System for UAS</i>
Unmanned Systems		<i>Method and Apparatus to Detect Laser Signals Without Ambient Light</i>
Unmanned Systems		<i>Attachment for Robotic Operations Using UAS</i>
Unmanned Systems	Other	<i>Conformal Body Capacitors for UAS Systems and RPA's</i>
Unmanned Systems	Other	<i>Conformal Body Antennas for UAS Systems and RPA's</i>
Unmanned Systems	Other	<i>Small UAS Training Course</i>

University:
University of South Alabama

Category	Type	Title
Composites	Structures	<i>Z-Aligned-Nanofiber Stitched Fiber Reinforced Polymer</i>
Advanced Materials	Functionalized Fabrics	<i>Permanent Attachment of Nanostructures to Fibers</i>

University:
University of Texas at Arlington

Category	Type	Title
Aerodynamics/Fluid Dynamics	Aerodynamics	<i>Accurate Measurement of Local Permeability Values of Complex Surfaces</i>
Aerodynamics/Fluid Dynamics	Aerodynamics / Thermodynamics	<i>Passive Flow Control Devices</i>
Structures/Solid Mechanics/Composites/ Materials	Manufacturing	<i>Complex Geometry Manufacturing System and Method</i>
Structures/Solid Mechanics/Composites/ Materials		<i>New Methods of Characterizing and Testing Composite Structures</i>
Structures/Solid Mechanics/Composites/ Materials	Health Monitoring	<i>Unpowered, Wireless Monitoring of Structural Health, Especially in Crack Development and Propagation in Fatigue Loading</i>
Structures/Solid Mechanics/Composites/ Materials	Aircraft Structure	<i>Impact Reduction Surfaces</i>
Structures/Solid Mechanics/Composites/ Materials	Furniture	<i>Automated Seat Cushion for Aircraft Selective Pressure Offloading and Dynamic Redistribution to Reduce Muscle and Joint Fatigue, Support Skin Health, and Improve Comfort</i>
Flight Mechanics/Controls/Simulation	Sensors	<i>Device-level Vacuum Packaging of Optical Sensors with Integrated Optical Filter</i>
Flight Mechanics/Controls/Simulation		<i>Non-uniform Wind Effect Modelling Techniques</i>
Unmanned Systems	Lubrication	<i>New Grease For Aerospace Applications with Better Performance and Wear Properties</i>
Other	Detonation Engines	<i>Various Technologies to Enable Sustainable Detonation Engines. New Applications Being Explored in Green Energy Production</i>

University:
Wichita State University Ventures

Category	Type	Title
Structures/Solid Mechanics/Composites/ Materials	Lightning Strike & EMP Protection	<i>Electromagnetically-hardened Composite Materials for Protection Against Lightning</i>
Structures/Solid Mechanics/Composites/ Materials	Lightning Strike & EMP Protection	<i>Aircraft Lightning Protection Design Handbook</i>
Structures/Solid Mechanics/Composites/ Materials	Structures	<i>High G Energy Absorbing Seat for Vertical Load Conditions</i>
Structures/Solid Mechanics/Composites/ Materials		<i>Field Patch Repair of Composite Materials</i>
Structures/Solid Mechanics/Composites/ Materials		<i>Nanocomposite Spheres for Self-Healing of Composite Wind Turbine Blades and Composite Repair</i>
Structures/Solid Mechanics/Composites/ Materials		<i>Temperature Measurements for Metals and Composite Materials Using the Solar Spectrum</i>
Other		<i>Hexaferrite Slant and Slot MIMO Antenna Element for Mobile Devices</i>
Other		<i>Separating Sequence Design for Multi-relay Networks Under Multipath Fading</i>
Other		<i>Assembly Line Design Application (ALDA)</i>

University:
WIPA representing Korea Aerospace Research Institute

Category	Type	Title
Structures/Solid Mechanics/Composites/ Materials	Structure Reinforcement	<i>Composite Laminated Structure Reinforced by Inserting Pins, a Method and an Apparatus for Making the Same and a Method for Making the Apparatus</i>
Structures/Solid Mechanics/Composites/ Materials	Structure of a Hybrid Panel	<i>Composite Honeycomb Sandwich Panel Equipped with Composite-Rail Aluminum I-shape Side Insert</i>
Flight Mechanics/Controls/Simulation	Automatic Landing System	<i>System for Automatically Landing Aircraft Using Image Signals and Method of Controlling the Same</i>
Flight Mechanics/Controls/Simulation	Controller	<i>Method for Improving Maneuverability and Controllability by Simultaneously Applying Both Reaction Wheel-Based Attitude Controller and Thruster-based Attitude Controller</i>

University:
WIPA representing Korea Aerospace Research Institute (continued)

Category	Type	Title
Flight Mechanics/Controls/Simulation	Localization Method Using Jammers	<i>Localization Method of Multiple Jammers Based on TDAO Method</i>
Engine	Turbo Machine	<i>Centrifugal Turbo Machine with Axial Thrust Control Member</i>
Engine	Mixture Ratio Stabilizer	<i>Mixture Ratio Stabilizer for Liquid Propellant Rocket Engine</i>
Engine	Blade Breakage Monitoring Unit and Turbo Apparatus	<i>Real-time Turbomachinery Blade Breakage Monitoring Unit and Turbo Apparatus</i>
Engine	Turbo Machine	<i>Turbo Machine Having Bellows Unit for Automatic Axial Thrust Control</i>
Engine	Flow Control Valve	<i>Flow Control Valve</i>
Engine	Ablative Baffle	<i>Ablative Baffle for a Liquid Rocket Engine Thrust Chamber</i>
Unmanned Systems	Unmanned Tilt Rotor Aircraft	<i>High Performance Tilt Rotor Aircraft in Which Nacelle Tilt Angle and Flaperon Angle Mechanically Interwork with Each Other</i>
Other	Tool for Diffusion Bonding of Multi Sheet Metal	<i>Tool for Diffusion Bonding of Multi Sheet Metal, Method of Manufacturing Structural Part Using the Same, and Structural Part Manufactured Using the Method Part</i>
Other	High Crush Strength Iridium Catalyst	<i>Method of Manufacturing High-crush-strength Iridium Catalyst for Hydrazine Decomposition Reaction</i>
Other	Airspeed Indicator	<i>Quick Test Tool and Method of Aircraft Airspeed Indicator</i>
Other	Double Wheel Control	<i>Double Wheel Control Moment Gyroscope Moment Gyroscope</i>
Other	Altitude Measurement	<i>Altitude Measurement Apparatus and Method Apparatus and Method</i>
Other	Navigation System	<i>Navigation System and Method of Recognizing Traffic Lane Using the Same</i>
Other	Navigation System	<i>Navigation Device and Road Lane Recognition Method Thereof</i>
Other	Navigation System	<i>Method Of Determining Drive Lane Using Steering Wheel Model</i>
Other	Satellite Image Fusion	<i>Satellite Image Fusion Method and System</i>
Other	Mass Measurement	<i>Mass Measurement and Method Using Inertial Force and Standard Mass in Gravity-free Environment</i>
Other	Mass Measurement and Method	<i>Mass Measurement System and Method Using Measurement of Frequency Shift of Vibrator</i>

Save the Date

Annual Meetings

2016
 February 14 – 17
 Manchester Grand Hyatt San Diego
 San Diego, CA USA

2017
 March 12 – 15
 The Westin Diplomat Resort & Spa
 Hollywood, FL USA

2018
 February 18 – 21
 JW Marriott Desert Ridge Resort & Spa
 Phoenix, AZ USA

2019
 February 10 – 13
 JW Marriott Austin
 Austin, TX USA

2015 Professional Development

AUTM 2015 Technology Operations and Organization Licensing Skills (TOOLS) Course & Essentials of Academic Technology Transfer
 October 5 – 7
 The Westin Seattle
 Seattle, WA USA

2015 Partnering Meetings

AUTM Partnering Forum Communication Technologies
 August 11 – 12
 Georgia Tech Hotel and Conference Center
 Atlanta, GA USA

AUTM Partnering Forum Animal Health & Nutrition
 September 1 – 2
 Kansas City Marriott Downtown
 Kansas City, MO USA

2015 Region Meetings

Central Region Meeting
 July 20 – 22
 Hilton Nashville Downtown
 Nashville, TN USA

Eastern Region Meeting
 August 31 – September 1
 Raleigh Marriott City Center
 Raleigh, NC USA

Western Region Meeting
 September 10 – 11
 Hyatt Regency Calgary
 Calgary, Alberta CANADA