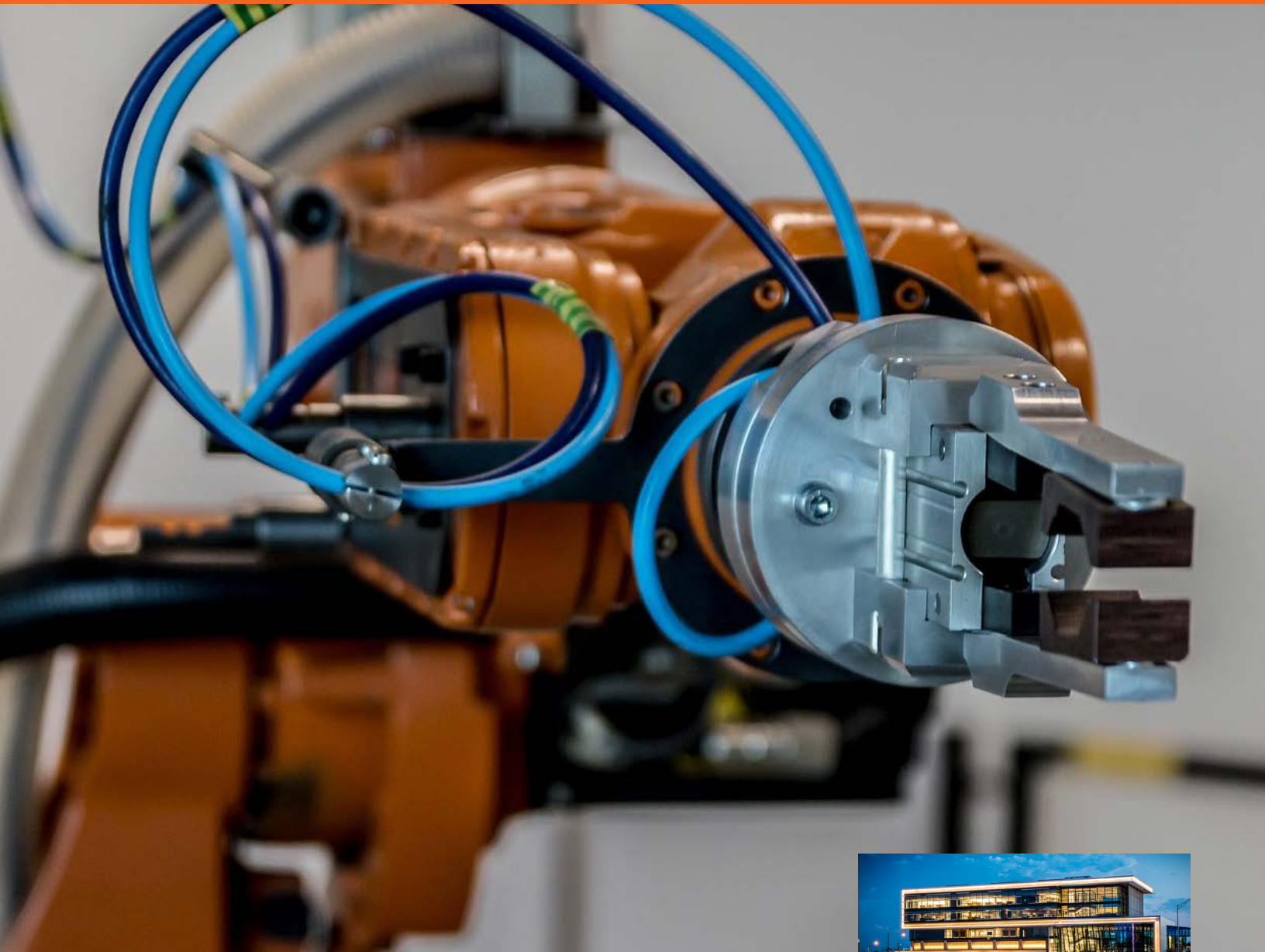


# 2023 INTERNATIONAL MECHATRONICS CONFERENCE AND EXPOSITION

IN PARTNERSHIP  
WITH BOEING

9/27-9/29/2023 (Pre-conference workshop on 9/27/2023)



This Mechatronics conference is motivated by the demand for a multi-disciplinary workforce in industry. The conference brings together academic professionals and industrial experts in mechatronics, robotics, and other electromechanical fields. It is designed to provide an opportunity to stay current in this rapidly growing field and to network with like-minded colleagues.



## LOCATION

**Hamm  
Institute for  
American  
Energy**

300 NE 9th St,  
Oklahoma City, OK 73104

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## KEYNOTE SPEAKERS



**Ryan Britton**  
Boeing

Ryan Britton is Vice President of Bombers and AWACS as well as the senior site executive for Boeing Oklahoma City within Boeing Defense, Space and Security. He is responsible for technical, quality, cost and schedule performance of some of Boeing's most complex military derivative, modification and upgrade programs to include the

B-1, B-2 and B-52 Bombers, E-3 AWACS, and ALCM. Britton joined The Boeing Company in August 2021 after serving 30 years in the United States Air Force.

Prior to Boeing, he held multiple senior positions acquiring, developing operating and sustaining vital aircraft and missile systems. Britton was the Air Force Program Executive Officer for Presidential & Executive Airlift, supporting the most senior leaders in the White House, Congress and Department of Defense. He served as the director of Global Reach and Global Power Programs, Office of the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics, where he was responsible for the fighter, bomber, nuclear, weapons, mobility, special operations, trainer, and special mission aircraft portfolios. He also previously served as the Missile Defense Agency deputy director for Acquisition, the director of the ICBM Systems Directorate and deployed as the Liaison Officer to the Iraqi Minister of Defense in Baghdad.

Britton has been recognized as both the Office of the Secretary of Defense and the United States Air Force Program Manager of the Year as well as with the Air Force Association General Welch Award for the most significant impact to the Air Force nuclear mission. In addition to his Bachelor of Science degree in Electrical Engineering from the University of Memphis, Britton received a Master's of Science in Electrical Engineering and a Master's of Science in Systems Engineering from the Air Force Institute of Technology. He holds Department of Defense Acquisition Corps Level III certifications in Program Management and Systems Planning, Research, Development and Engineering-Systems Engineering and is a RAND Fellow. Britton is a member of the Air Force Association.



**Junmin Wang, Ph.D.**  
UT Austin

Prof. Junmin Wang is the Lee Norris & Linda Steen Norris Endowed Professor in Mechanical Engineering at the University of Texas at Austin. In 2008, he started his academic career at Ohio State University where he was early promoted to Associate Professor in September 2013 and very early promoted to Full Professor in June 2016. In 2018, he left Ohio State and

joined UT Austin as the Accenture Endowed Professor. He also gained five years of full-time industrial research experience at Southwest Research Institute (San Antonio Texas) from 2003 to 2008. Prof. Wang has a wide range of research interests covering control, modeling, estimation, optimization, and diagnosis of dynamical systems, especially for automotive, smart and sustainable mobility, human-centric automation, and cyber-physical system applications. Prof. Wang's research programs at UT-Austin and Ohio State University have been funded by federal agencies and industrial companies such as National Science Foundation (NSF), Office of Naval Research (ONR), Department of Energy (DOE), National Highway Traffic Safety Administration (NHTSA), Texas Department of Transportation, GM, Ford, Honda, Tenneco, Eaton, Ftech, Denso, and others.

Dr. Wang is the author or co-author of more than 360 peer-reviewed publications including 184 journal articles and 13 U.S. patents. He is a recipient of numerous international and national honors and awards including 2019 IEEE Best Vehicular Electronics Paper Award, 2018 IEEE Andrew P. Sage Best Transactions Paper Award, 2017 IEEE Transactions on Fuzzy Systems Outstanding Paper Award, 2012 NSF-CAREER Award, 2011 SAE International Vincent Bendix Automotive Electronics Engineering Award, and 2009 ONR-YIP Award. He is an IEEE Vehicular Technology Society Distinguished Lecturer, SAE Fellow, and ASME Fellow.

Dr. Wang received the B.E. in Automotive Engineering and his first M.S. in Power Machinery and Engineering from the Tsinghua University, Beijing, China in 1997 and 2000, respectively, his second and third M.S. degrees in Electrical Engineering and Mechanical Engineering from the University of Minnesota, Twin Cities in 2003, and the Ph.D. degree in Mechanical Engineering from the University of Texas at Austin in 2007.

## PANELISTS

Mr. Justin Patterson, Engineering Director, Nordam  
Mr. Dean Guy, former Engineering Manager at Boeing  
Mr. Josh Baldrige, Director, Enovation Controls  
Mr. Jim Falasco, Sales Engineer, AeroGear Telemetry, Sachse, TX  
Prof. Thomas Henderson, Science & Mathematics, TCC  
Dr. Chulho Yang, Interim Head, Engineering Technology, OSU  
Dr. Avimanyu Sahoo, Assistant Professor, U of Alabama, Huntsville

# CALL FOR PRESENTATIONS



If you would like to present your research at the conference, you can submit a presentation using the QR code or link.

<https://tinyurl.com/2p86e2ts>

## Due Dates

- Sessions and Workshops | **March 31, 2023**
- Abstract Submission Deadline | **July 31, 2023**
- Acceptance Notice | **August 7, 2023**

## Wednesday, September 27

8:00AM - Registration Opens

**Preconference Workshops** (offered concurrently from 9:00am-4:00pm)

- Geometric Dimensioning & Tolerancing (GD&T)
- Intro to Python

6:00pm - 9:00pm MET/EET Alumni Reception

## Thursday, September 28

8:00am - Registration

9:00am - 9:20am Opening/Welcome Remarks - Dr. Veenstra (Interim Dean, OSU CEAT)

9:20am - 10:20am Keynote - Ryan Britton | **Aircraft Modernization and Modification Defense, Space & Security**

10:20am - 10:30am Break

10:30am - 12:00pm Technical Session 1 - Robotics, Control & Automation

12:00pm - 1:00pm Networking Lunch

1:00pm - 3:00pm Dr. Huaxia Wang | **First-person Robotic Arm Control with Hand Motions in Virtual Reality**

2:00pm - 3:15pm Technical Session 2 - Smart Adaptive Structures

3:15pm - 3:30pm Break

3:30pm - 5:00pm Technical Session 3 - Mechatronics Application & Education 1

5:00pm - 5:15pm Closing Comments

5:15pm - 7:00pm Vendor Reception

# CONFERENCE SCHEDULE

## Friday, September 29

8:00am - Registration

8:30am - 9:30am Welcome & Keynote - Dr. Junmin Wang | **Mechatronics in Cyber-Humans-Vehicles System**

9:30am - 9:45am Break

9:45am - 11:15am Technical Session 4 - AI/DL in Mechatronics

11:15am - 12:00 pm Dr. Amanda de Oliveira Barros | **Assertion-evidence Presentation Method workshop**

12:00pm - 1:00pm Lunch

1:00pm - 2:00pm Dr. He Bai | **Sensor Fusion in Autonomous Systems**

2:00pm - 3:00pm Technical Session 5 - Smart Manufacturing/Industry 4.0

3:00pm - 3:15pm Break

3:15pm - 4:15pm Panelist and Q&A

4:15pm - 5:00 Closing Ceremony

## PRICES

Registrations may be canceled 5 business days prior to the start of the course and receive a full refund. Within 5 days prior to the start of the course, registrants who cancel will be responsible for 25% of the course fee. Registrants who fail to attend the course without any prior notification will be responsible for the full course fee. Substitutions may be made at any time without penalty prior to the course starting date. In the event OSU has to cancel a course, OSU will not be responsible for any cancellation charges assessed by airlines, travel agencies, or hotels. \*Registration fees cover necessary training curriculum, course materials, breaks, lunches, and reception foods\*

**Early Bird Prices**  
Participant \$325  
Student \$50

**After July 1, 2023**  
Participant \$375  
Student \$75

**Vendor \$625**, includes two Registrations, vendor booth, one 6 ft. table, & two chairs

# 2023 International Mechatronics Conference and Exposition **PRE-CONFERENCE WORKSHOP**

Hamm Institute for American Energy, Oklahoma City, OK  
September 27, 2023 | Early Bird **\$350**; After 7/1/23 **\$395**

## **GEOMETRIC DIMENSIONING & TOLERANCING (GD&T) WORKSHOP** 9am-4pm

### **Instructor**



Dr. Chulho Yang received a Ph.D. degree in Mechanical Engineering from Purdue University as well as M.S. and B.S. degrees from Hanyang University in Korea. He also has a professional engineer (PE) license registered in Oklahoma. Before joining OSU in 2008, Dr. Yang acquired 11 years of industrial experience with ArvinMeritor technical center, IBM Korea, and KIA Motors R&D Center. Much of his work focused on vehicle structure design/optimization, vehicle NVH test and development, CAD/CAM/CAE, and engineering consulting on design methodologies. He also received an “Innovation and Achievement Award” from ArvinMeritor, Inc., a “Best Paper Award” from the International Symposium on Advanced Material and Mechanical Application, and an “Outstanding Presenter Award” from the International Symposium on Green Manufacturing and Applications. He has performed research and published in the areas of mechanical system analysis and design, noise and vibration, experimental sensitivity analysis, structural dynamics and health monitoring, design optimization, biomechanics, and protective device/structure.

### **Description**

Geometric dimensioning and tolerancing (GD&T) is a systematic method for defining and communicating engineering tolerances. GD&T can improve quality and reduce cost through enhanced producibility. In the current industry, GD&T is considered as one of the most critical and important skillsets for design, manufacturing, and quality control engineers. Modern GD&T inspection practice in industry has moved away from simple pass/fail gauging to usage of measurement equipment that produces numerical results. Therefore, it has become more important to know how to define numerical values to measure parts and report per the ASME standards. The concepts and theories on GD&T will be discussed, then how to examine parts for verification and how to create an inspection report according to ASME Y14.45-2021 will be practiced.

**Please contact CEAT Professional  
Development at 405-744-5714  
for registration information**

### **Intended audience**

Any design/manufacturing/inspection engineers, engineering managers, engineering students, teachers or faculty members who are willing to learn GD&T technique and its applications.



# HOTEL BOOKING

## Embassy Suites Oklahoma City Downtown

741 N. Phillips Avenue, Oklahoma City, Oklahoma 73104

Toll Free Reservations Line 1-800-445-8667

Group Rate: \$104 per night | Group Code: ROB

Room Block Group Cutoff Date: Monday, August 28, 2023

[tinyurl.com/msw2444y](http://tinyurl.com/msw2444y)

# OKC ATTRACTIONS

## Bricktown

Located just over a mile south of the conference, Bricktown offers a variety of dining and entertainment options.

[bricktownokc.com](http://bricktownokc.com)



## National Cowboy & Western Heritage Museum

A museum that collects, preserves and exhibits internationally renowned western art and artifacts.

[nationalcowboymuseum.org](http://nationalcowboymuseum.org)



# SPONSORSHIPS

### Platinum \$5000

2 Registrations, Promotional Material, Expo Reception and a vendor booth & table.

### Gold \$3000

2 Registrations, Promotional Material, Lunch Presentation, and a vendor booth & table.

### Silver \$1500

2 Registrations, Promotional Material, Refreshment Break, and a vendor booth & table.

### Copper \$300

Promotional Material

## Conference sponsored by



DIVISION OF  
**ENGINEERING TECHNOLOGY**  
College of Engineering, Architecture and Technology



## General Conference Chair

Dr. Chulho Yang

## Technical Committee

Dr. Avimanyu Sahoo

Dr. He Bai

Dr. Zeki Ilhan

Dr. Huaxia Wang

Dr. Amanda Oliveira Barros

## Will Rogers World Airport

7100 Terminal Dr,  
Oklahoma City, OK 73159

(405) 316-3200

[flyokc.com](http://flyokc.com)



# REGISTER

Please contact  
**CEAT Professional  
Development at  
405-744-5714  
for registration  
information**