

2024 SAAMI Ballistics Conference
September 10 - 12, 2024
Salt Lake City, Utah

Tuesday, September 10

- 8:30 am – 8:45 am *Welcome/Introduction* – Ryan Jibson, Vice President and General Counsel, Browning Arms Co.
- 8:45 am – 9:15 am *Keynote Address* – Governor Spencer Cox, State of Utah
- 9:15 am – 9:45 am *SAAMI Z299.6 – Standard for Commercial Manufacturers of Suppressors* - Alan Serven, SAAMI
- 9:45 am – 10:00 am Break - sponsored by **H-S Precision**
- 10:00 am – 11:00 am *Benefits of a Quality Management System in the Ballistics Range: Achieving and Improving Your Quality Policies with Data Management, Equipment, and a Culture of Excellence* - Gary Stafford, Oehler Research
- 11:00 am – 12:00 pm *Calibrating Radar Measured Drag Functions via Time of Flight* – Bufford Boone, FBI (ret.)
- 12:00 pm – 1:00 pm Lunch - sponsored by **Layered Manufacturing & Consulting**
- 1:00 pm – 2:00 pm *Advances in 3-Dimensional Laser Scanning, Barrel Material Selection & Ballistic Test Equipment* – Tim Houghton, H-S Precision
- 2:00 pm – 2:30 pm Break - sponsored by **Kistler Instrument Corp.**
- 2:30 pm - 3:30 pm *In-Process and Final Product Attribute Measurement and Data Collection* – Madison (Maddie) Melin, Keyence
- 3:30 pm - 4:15 pm *Applications of Additive Manufacturing in Firearms* – Shannon VanDeren, Layered Manufacturing & Consulting
- 4:15 pm – 5:00 pm *Radar Systems for Measurement of Downrange Trajectory and Bullet Characteristics* – Mitchell Kukson, Barnes Bullets
- 5:30 pm – 7:00 pm Reception - sponsored by **PCB Piezotronics**

Wednesday, September 11

- 8:30 am – 9:30 am *Sensors for Gun Dynamics & Human Exposure* – Melissa Maze, PCB Piezotronics
- 9:30 am - 10:30 am *Practical Use of Data Acquisition* - John Miller, DEWEsoft
- 10:30 am – 11:00 am Break - sponsored by **Kistler Instrument Corp.**
- 11:00 am – 12:00 pm *NATO “Case Mouth” and C.I.P. “Drilled Case” Direct Pressure Measurement* – Stephen Braxton, Kistler Instrument Corp.
- 12:00 pm – 1:00 pm Lunch - sponsored by **Oehler Research**
- 1:00 pm – 2:45 pm *Ballistic Pressure Sensor User’s Training* – Melissa Maze, PCB Piezotronics
- 2:45 pm - 3:15 pm Break

3:15 pm – 4:15 pm *Ballistic Pressure Sensor User's Training* – Melissa Maze, PCB Piezotronics
4:15 pm – 5:00 pm *Ballistic Pressure Sensor Calibration* – Mike Mains, The Modal Shop
5:30 pm – 7:00 pm Reception - sponsored by **DEWESoft**

Thursday, September 12

8:00 am – 9:00 am Shuttle to Three Mile Range, Perry, Utah
9:00 am – 12:00 pm Demonstration of long-range radar system in use hosted by Barnes Bullets, Demonstration of the Oehler System 89 for downrange measurement of B_c and time-of-flight hosted by Oehler, Demonstration of The Modal Shop calibration system, and shooting events generously hosted by the Browning Arms Company.
12:00 pm – 1:30 pm Lunch - sponsored by U.S. Space & Defense (formerly NTS National Testing Services).
1:30 pm – 2:30 pm Return shuttle to hotel.

A special thanks to the sponsors of the 2024 SAAMI Ballistics Conference:

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PRESENTERS

(Alphabetically)

Stephen Braxton, Kistler Instrument Corp. – Stephen serves as the North America High Speed Dynamics Lead and Southeast Manager for Kistler. He holds a Bachelor of Science degree in Physics. Stephen has over 27 years of experience in the Test and Measurement industry with a focus on Defense, Space, and Aerospace applications.

Madeline (Maddie) Floyd, Keyence Corporation of America – Maddie is a quality and metrology system specialist at Keyence, focused on optical inspection equipment that includes automated optical comparators and multi-sensor measurement systems. Currently working with over 150 companies in Utah with experience in a wide array of applications including machining, turning, stamping, wire forming, extrusion and injection molding in the aerospace, medical, oil & gas, electronics, and defense manufacturing industries.

Tim Houghton, H-S Precision – Growing up around manufacturing at his family's company H-S Precision, Tim attended Arizona State University receiving a bachelor's degree in manufacturing engineering in 2008. Upon graduation, he returned to Rapid City, South Dakota as a department supervisor. Four years later, he was promoted to Engineer, and in 2016 he was appointed Vice President and Chief Operating Officer of H-S Precision. Tim is continuously learning and is a Six Sigma Green Belt; he also owns and operates Technosphere 3D Printing which has been instrumental in research and development. Tim's sights are always set to the future. Under his leadership, H-S Precision has seen a growth in efficiency, an expanded network of OEM partners worldwide, and has introduced state-of-the-art technology into production yielding innovative results.

Melissa Maze, PCB Piezotronics – Melissa is the Business Development Manager of the Aerospace and Defense division for PCB Piezotronics and Endevco. She holds a Bachelor of Science degree in Mechanical Engineering and a master's degree in business administration from the State University of New York. Melissa has been an instrumentation engineer for 9 years, focusing on technical application support and training on ballistic pressure, shock, acoustic, and force measurements. She has been the instructor for the Ballistics Instrumentation course for PCB for the last 4 years.

Mike Mains, The Modal Shop (TMS) – Mike a Product Specialist, Software and Mechanical Engineer at The Modal Shop (TMS). Prior to joining TMS in 2022, he was an Associate Professor at the University of Cincinnati and Faculty Advisor for Bearcat Motorsports, which is the organization for the University of Cincinnati's Formula FSAE and SAE Baja teams. Prior to joining the UC in 2019, he spent 14 years as a Senior Software Developer at Brüel & Kjær. Mike has worked with TMS's Structural Test Products, Calibration Systems and, more recently, support of TMS's Nondestructive Testing Systems. One of his major areas of focus since joining TMS has been the Ultra-High Pressure Calibration system that supports the SAAMI "standard" test method for conformed ballistics pressure measurements.

John Miller, DEWEsoft, LLC – John holds a bachelor's degree from South Dakota State University and a masters from the University of Minnesota. John started his professional career as a test engineer for a consulting firm, Braun Intertec, in Bloomington, Minnesota where he was responsible for an array of instrumentation projects ranging from designing and implementing large-scale bridge monitoring systems

to conducting various dynamic measurements of blast events, amusement park failures, etc. After being a test engineer and an avid user of various data acquisition systems, John joined DEWESoft in 2016. John is the VP of Engineering for DEWESoft and works directly with most large manufacturers in the Aerospace, Automotive, and Defense industries assisting test engineers in making successful measurements and helping steer DEWESoft's future development to account for industry innovation and evolution.

Alan Serven, Sporting Arms & Ammunition Manufacturer's Institute (SAAMI) – Prior to joining SAAMI in May 2021, Alan spent 13 years with Hercules Powder (now Northrop-Grumman) at their plant in Kenvil, New Jersey. During that time, he held a variety of positions in smokeless propellant manufacturing supervision, product development & technical support, and Quality Assurance, including supervising the ballistics test laboratory. In 1995, Alan joined Remington Arms at their ammunition plant in Lonoke, Arkansas where for 18 years he managed Quality Assurance & ballistics testing, new ammunition product development, primer manufacturing and explosives safety. In 2017, he moved to the firearms division in the position of Director, Long Gun Product Development. In 2021 he moved back to the ammunition division. After 25+ years at Remington Alan joined SAAMI as the Senior Director of Technical Affairs.

Gary Stafford, Oehler Research, Inc. – With a degree in Electrical Engineering from the University of Kansas, Gary joined Oehler Research in 2009. Prior to joining Oehler, Gary specialized in nuclear gauges and elemental analysis, being involved in product definition and design through production, sales, calibration, and maintenance. Since joining Oehler, Gary has mastered the field of ballistic instrumentation including computers and the science and art of analog circuits. This experience and familiarity of the challenges of ballistic instrumentation suits him well in the of support existing instruments and the design of future instruments.

Shannon Van Deren, Layered Manufacturing & Consulting – Shannon is the President of Layered Manufacturing and Consulting (LMC). LMC focuses on advanced manufacturing solutions with a specific focus on additive manufacturing. For the last nine years, she has offered solutions within medical, automotive, defense, and commercial sectors through creating education, awareness, adoption and implementation. Manufacturing services offered through LMC include additive manufacturing (3D printing) of metal, polymers, and composites for both prototype and production applications, as well as complimentary conventional manufacturing offerings.

About SAAMI – The Sporting Arms and Ammunition Manufacturers' Institute, SAAMI, founded in 1926 at the request of the federal government, is dedicated to creating and promulgating technical and performance standards for firearms, ammunition, and components, and is committed to being the preeminent global resource for the safe and responsible design, manufacture, transportation, storage, and use of these products.