COMVEC™
ON-HIGHWAY | OFF-HIGHWAY | DEFENSE
EVENT GUIDE
September 9-11, 2019
Indianapolis, Indiana

Official Publication
TRUCK & OFF-HIGHWAY ENGINEERING
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Bryan Wells
DENSO International America Inc.

Steven Wesolowski
Dana Holding Corp.

Kevin West
Volvo Group Trucks Technology

Daniel Williams
ZF

Lawrence Williams
Aptiv
# EVENT-AT-A-GLANCE

## MONDAY  September 9 - SOCIETAL NEEDS OF THE FUTURE

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 a.m. – 12 p.m.</td>
<td>Young Professionals Meet &amp; Greet</td>
</tr>
<tr>
<td>1 p.m. – 2:10 p.m.</td>
<td>Opening Keynote Speaker - Rich Freeland, President and COO &amp; Jennifer Rumsey, VP &amp; CTO, Cummins Inc.</td>
</tr>
<tr>
<td>2:15 p.m. – 3:45 p.m.</td>
<td>Meeting Basic Needs of Humanity</td>
</tr>
<tr>
<td>2:15 p.m. – 3:45 p.m.</td>
<td>Powertrain Paper Session</td>
</tr>
<tr>
<td>2:15 p.m. – 3:45 p.m.</td>
<td>Cross Technology Paper Session</td>
</tr>
<tr>
<td>3:45 p.m. – 4:00 p.m.</td>
<td>Networking Break</td>
</tr>
<tr>
<td>4:00 p.m. – 6:30 p.m.</td>
<td>Monday Welcome Reception in Exhibit Hall - Sponsored by Eaton Corp</td>
</tr>
</tbody>
</table>

## TUESDAY  September 10 - FUELING THE FUTURE

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 a.m. – 8:45 a.m.</td>
<td>Buckendale Breakfast &amp; Lecture - Sponsored by Cummins Inc., Dana Incorporated, Eaton, Meritor, Inc., ZF TRW</td>
</tr>
<tr>
<td>9 a.m. – 10 a.m.</td>
<td>Opening Keynote &amp; Awards Presentation - Franklin R. Chang Diaz, Ph.D., Chairman and CEO, Ad Astra Rocket Company</td>
</tr>
<tr>
<td>10 a.m. – 10:30 a.m.</td>
<td>Networking Break in Exhibit Hall - Sponsored by Sears Seating</td>
</tr>
<tr>
<td>10:30 a.m. – 12 p.m.</td>
<td>Off-highway Applications and Trends</td>
</tr>
<tr>
<td>10:30 a.m. – 12 p.m.</td>
<td>Disruptive Technologies, Part 1</td>
</tr>
<tr>
<td>10:30 a.m. – 12 p.m.</td>
<td>Aerodynamics #2 - Track Testing</td>
</tr>
<tr>
<td>12 p.m. – 1:30 p.m.</td>
<td>Networking Lunch in Exhibit Hall</td>
</tr>
<tr>
<td>1:30 p.m. – 3 p.m.</td>
<td>On-highway Applications and Trends</td>
</tr>
<tr>
<td>1:30 p.m. – 3 p.m.</td>
<td>Disruptive Technologies, Part 2</td>
</tr>
<tr>
<td>1:30 p.m. – 3 p.m.</td>
<td>Aerodynamics #3 - Platooning</td>
</tr>
<tr>
<td>1:30 p.m. – 3 p.m.</td>
<td>Charging Systems for Electric Vehicles</td>
</tr>
<tr>
<td>3:30 p.m. – 3:30 p.m.</td>
<td>Networking Break in Exhibit Hall</td>
</tr>
<tr>
<td>3:30 p.m. – 4 p.m.</td>
<td>Future of Commercial Vehicles Panel Discussion</td>
</tr>
<tr>
<td>3:30 p.m. – 5 p.m.</td>
<td>Alternative and Future Fuels</td>
</tr>
<tr>
<td>3:30 p.m. – 5 p.m.</td>
<td>Off-road Electrification</td>
</tr>
<tr>
<td>3:30 p.m. – 5 p.m.</td>
<td>Aerodynamics #4 - Aerodynamic Drag / Design</td>
</tr>
<tr>
<td>5 p.m. – 6 p.m.</td>
<td>Networking Reception in Exhibit Hall - Sponsored by Navistar</td>
</tr>
</tbody>
</table>

## WEDNESDAY  September 11 - CHARGING THE FUTURE

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 a.m. – 8:30 a.m.</td>
<td>Coffee and CARB Update - Kim A. Heroy-Rogalski, California Air Resources Board</td>
</tr>
<tr>
<td>8:30 a.m. – 9 a.m.</td>
<td>Young Professionals Meet &amp; Greet</td>
</tr>
<tr>
<td>9 a.m. – 10 a.m.</td>
<td>Opening Keynote - Carla Bailo, President and CEO, Center for Automotive Research</td>
</tr>
<tr>
<td>10 a.m. – 10:15 a.m.</td>
<td>Networking Break - Sponsored by Oshkosh Corp</td>
</tr>
<tr>
<td>10:15 a.m. – 11:45 a.m.</td>
<td>Off- and On-Highway Applications and Trends</td>
</tr>
<tr>
<td>10:15 a.m. – 11:45 a.m.</td>
<td>CAE: Vehicle System Development</td>
</tr>
<tr>
<td>10:15 a.m. – 11:45 a.m.</td>
<td>Developments and Technical Approach in Highly Automated Vehicles</td>
</tr>
<tr>
<td>10:15 a.m. – 11:45 a.m.</td>
<td>Standards Session #1: Tractor-Trailer Interconnection for North America Autonomous and Electric Vehicles</td>
</tr>
<tr>
<td>11:45 a.m. – 12:45 p.m.</td>
<td>Networking Lunch in Exhibit Hall</td>
</tr>
<tr>
<td>12:45 p.m. – 2:15 p.m.</td>
<td>Electric Infrastructure Challenges and Demands</td>
</tr>
<tr>
<td>12:45 p.m. – 2:15 p.m.</td>
<td>CAE: Vehicle Sub-system and Component Development</td>
</tr>
<tr>
<td>12:45 p.m. – 2:15 p.m.</td>
<td>Cybersecurity</td>
</tr>
<tr>
<td>2:15 p.m. – 2:30 p.m.</td>
<td>Networking Break in Foyer</td>
</tr>
<tr>
<td>2:30 p.m. – 4 p.m.</td>
<td>Globalization in Electrification</td>
</tr>
<tr>
<td>2:30 p.m. – 4 p.m.</td>
<td>Uncertainty Quantification and Robust Design</td>
</tr>
<tr>
<td>2:30 p.m. – 4 p.m.</td>
<td>Lateral Control in Automated Driving Systems</td>
</tr>
<tr>
<td>5:30 p.m. – 7:30 p.m.</td>
<td>Networking Reception at the Indianapolis Motor Speedway (this event requires a separate ticket)</td>
</tr>
</tbody>
</table>

## THURSDAY  September 12 - INDIANAPOLIS MOTOR SPEEDWAY EVENT

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 a.m. – 2:00 p.m.</td>
<td>Tech Demo &amp; Ride Along at the Indianapolis Motor Speedway (this event requires a separate ticket)</td>
</tr>
</tbody>
</table>
### EMERGENCY PROCEDURES DURING COMVEC

During the event attendees are to follow the established emergency guidelines of the facility where the emergency occurs. **Based on the location of the incident, report emergencies to the nearest venue representative and/or security personnel if available, or report to the SAE registration area.**

Should a catastrophic event occur, attendees should follow the safety and security instructions issued by the facility at the time of the event. This includes listening for instructions provided through the public address system and following posted evacuation routes if required.

In the event of an emergency or a major disruption to the schedule of events at the event, attendees and exhibitors may call this number to receive further information about the resumption of this event. Updates will also be provided via the SAE website at www.sae.org.

### SAE EMERGENCY HOTLINE

+1.800.581.9295  
**Customer Service**  
+1.877.606.7323

### CONSENT TO USE OF IMAGES

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INFORMATION

HOURS OF OPERATION

Registration
Griffin Exhibit Hall Foyer
On-Site Registration hours:
Monday, September 9
11:00 a.m.–4:30 p.m.
Tuesday, September 10
7:30 a.m.–4:00 p.m.
Wednesday, September 11
8:00 a.m.–3:00 p.m.

Member Lounge
Open During Exhibit Hours
The SAE Membership Lounge is a space to network with fellow members, enjoy snacks, prizes/giveaways, discover volunteer opportunities, and more — including an industry lecture on “Vehicle Dynamic Testing and Design for Formula SAE” by Siddarth Attravanam, Manager of Tire & Vehicle Dynamics at Cooper Tire & Rubber Co. We’re also offering a discount on professional membership if you join onsite.

Exhibit Hours
Griffin Exhibit Hall
Monday, September 9
5:30–6:30 p.m.
Tuesday, September 10
10:00 a.m.–6:00 p.m.
Wednesday, September 11
8:30 a.m.–1:00 p.m.

Concierge Club
By Invitation Only
Meeting Room 101/102
Monday, September 9
10:30 a.m.–5:00 p.m.
Tuesday, September 10
8:00 a.m.–5:00 p.m.
Wednesday, September 11
8:00 a.m.–4:00 p.m.

Member Lounge
Sponsored by

Wifi Access
The JW Marriott will have Wifi service throughout the meeting space. To access the wifi, search for COMVEC network and use Daimler2019 as the password.

Wifi Access
Sponsored by

Concierge Club
Sponsored by

Member Lounge
Sponsored by

Registration
Sponsored by

Member Lounge
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Concierge Club
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Member Lounge
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Wifi Access
Sponsored by
SAE Indianapolis Section Meeting
White River D
Monday, September 9
6:30–7:30 p.m.

Our featured speaker is Dan Williams, Director of Commercial Vehicle ADAS from ZF, discussing “Active Suspension”.

AWARDS

**L. RAY BUCKENDALE AWARD LECTURE**
Giorgio Rizzoni
Professor of Mechanical and Aerospace Engineering and of Electrical and Computer Engineering
The Ohio State University

**J. CORDELL BREED AWARD FOR WOMEN LEADERS**
Junhui (Jennifer) Li
Technical Advisor – Catalyst Technology
Cummins, Inc.

**SAE/MAGNUS HENDRICKSON INNOVATION AWARD**
Mehdi Ahmadian
Dan Pletta Professor and Director
Center for Vehicle Systems and Safety
Virginia Tech

**SAE/AEM OUTSTANDING YOUNG ENGINEER AWARD**
Rohit Saha
Machine Simulation – Senior Technical Specialist
Cummins, Inc.

**Buckendale Breakfast & Lecture:**
Transformational Technologies Reshaping Transportation – An Academia Perspective
Ballroom B/C
Tuesday, September 10
7:30–8:00 a.m. Breakfast
8:00–8:45 a.m. Lecture

Featured speaker: Giorgio Rizzoni,
The Ohio State University

**Award Presentations**

Award Presentation, Buckendale Breakfast & Lecture
Tuesday, September 10, 2019
7:30 a.m. – 8:45 a.m.
Ballroom B/C

Award Presentations
Tuesday, September 10, 2019
9:00 a.m.
White River Ballrooms E/F
Building Student Futures in STEM Through Direct Industry Executive Engagement

Tuesday, September 10
9:00 a.m.–4:00 p.m.

On September 10, 100 high school students—from 10 Indianapolis, IN area schools—will attend COMVEC to engage with industry professionals working in the commercial vehicle industry. Participating students will have the opportunity to meet with a mentor, attend technical panels, network with COMVEC committee members, and participate in an exclusive panel discussion on the “Future of Commercial Vehicles.”

Participating Schools:
Columbus East, Columbus North, Hamilton Southeastern, Lawrence Central, Lawrence North, Noblesville High School, North Central, Providence Cristo Rey, Westfield Washington School District

Get Involved with an SAE Technical Committee
Griffin Hall
Tuesday, September 10
3:00–3:30 p.m.

Join us in the Exhibit Hall to meet with Committee chairs/vice chairs, ask questions, and learn more about the COMVEC Committees on Aerodynamics, Chassis, Powertrain, and Total Vehicle Mechatronics & Integration. Each Committee chair/vice chair will be available to answer any questions for prospective committee members.

Tuesday Networking Reception
Griffin Hall
Tuesday, September 10
5:00–6:00 p.m.

Sponsored by

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• SCHEDULE your time and don’t miss out
• CONNECT with speakers, exhibitors and attendees

Sponsored by
**EVENTS AT THE INDIANAPOLIS MOTOR SPEEDWAY**

**Networking Reception at the Indianapolis Motor Speedway Museum**
Wednesday, September 11
5:30–7:30 p.m.

*Bus transportation will depart the JW Marriott from the Event Center Drive (same level as SAE meeting space) at 5:15 p.m. and return at the conclusion of the reception. Parking will be available at the track for those who wish to drive.*

**Separate registration Required, Please stop at Registration Desk prior to event: $25**

Join your industry peers for a night out at the Indianapolis Motor Speedway Museum. The COMVEC networking reception provides the opportunity to continue building relationships with fellow attendees against a backdrop of one of the world’s premier collections of automotive and motor racing vehicles and artifacts, with special emphasis on the Indianapolis 500-Mile Race.

Sponsored by

**Technology Demonstrations at the Indianapolis Motor Speedway**
Thursday, September 12
Media 8:00–10:00 a.m
COMVEC Attendees 10:00 a.m.–2:00 p.m.

*Bus transportation will depart the JW Marriott from the main hotel entrance at 9:30 a.m. and return at 2:00 p.m. Parking will be available at the track for those who wish to drive.*

**Separate registration Required, please stop at Registration Desk prior to 3:00 p.m. Wednesday: $25**

Participating companies will showcase new technologies for autonomous and electric vehicles from mid-size through Class 8 Trucks, plus off-highway equipment. Don’t miss your opportunity to see the infrastructure that is moving the commercial vehicle industry forward into the next generation.

Participating Companies include:

![Sponsor Logos]
KEYNOTE & HIGHLIGHT PRESENTATIONS

OPENING KEYNOTE – 1:00 P.M.
Monday, September 9
White River Ballroom E/F

Rich Freeland
President & Chief Operations Officer
Cummins Inc.

Jennifer Rumsey
Vice President & Chief Technical Officer
Cummins Inc.

BUCKENDALE LECTURE & BREAKFAST – 7:45 A.M.
Tuesday, September 10
White River Ballroom A/B/C

Giorgo Rizzoni
Professor of Mechanical & Aerospace Engineering and of Electrical & Computer Engineering
The Ohio State University

OPENING KEYNOTE – 9:00 A.M.
Tuesday, September 10
White River Ballroom E/F

Franklin R. Chang Diaz, Ph.D.
Chairman & Chief Executive Officer
Ad Astra Rocket Company
KEYNOTE & HIGHLIGHT PRESENTATIONS

COFFEE AND CARB UPDATE – 8:00 A.M.
Wednesday, September 11
White River Ballroom E/F

Kim A. Heroy-Rogalski
Chief, Mobile Source Regulatory Development Branch
California Air Resources Board (CARB)

OPENING KEYNOTE – 9:00 A.M.
Wednesday, September 11
White River Ballroom E/F

Carla Bailo
President & Chief Executive Officer
Center for Automotive Research

DIAGNOSTIC COMMUNICATION WITH ROAD-VEHICLES AND NON-ROAD MOBILE MACHINERY

An SAE Deep Dive

AUTHOR MEET AND GREET

Peter Subke, author of Diagnostic Communication with Road-Vehicles and Non-Road Mobile Machinery will be available to discuss his book at an Author Meet and Greet.

As the Director of Business Development and Vice-Director of Sales at Softing Automotive, Peter is considered an expert on diagnostic communication technology for the development, test and the service of automotive E/E systems. Peter has published several technical papers and participates in the SAE events WCX, COMVEC, and OBD Symposia as a speaker and panelist. He is an active member of the SAE J3138 task force on DLC security.

Please visit Booth #202 from 2 to 5 p.m. on September 10th to meet Peter!

sae.org/books
TECHNICAL SESSIONS
OUR SOCIETY IN THE FUTURE

EXECUTIVE PANEL - SOCIETAL NEEDS OF THE FUTURE: MEETING BASIC NEEDS OF HUMANITY
2:15 p.m.
White River Ballroom E/F
MODERATOR
Timothy Johnson, Corning Inc.
PANELISTS
Kanlaya Barr, Deere & Company
Daniel S. Greenbaum, Health Effects Institute
Elizabeth Kocs, University of Illinois Chicago

CROSS TECHNOLOGY PAPER SESSION
2:15 p.m.
White River Ballroom D
AUTHORS
Erik Ostergaard, Metalsa - Concept for a Freight Efficient Heavy Duty Truck Chassis
Ian Lockley, ANSYS, Inc. - Fast and Accurate Prediction of Vehicle Aerodynamics using ANSYS Mosaic Mesh
Yang Chen, Center for Vehicle Systems and Safety - Simulation Evaluation on the Rollover Propensity of Multi-trailer Trucks at Roundabouts
Daniel Aceituna, DISTek Integration Inc. - PreHaz: A Pre-Mortem Functional Safety Hazard Assessment Technique for Autonomous Vehicles

POWERTRAIN PAPER SESSION
2:15 p.m.
White River Ballrom G/H/I
MODERATOR
David Cramer, The Timken Company
AUTHORS
Gary Neely, Christopher Sharp, Southwest Research Institute; Matthew S. Pieczko, James E. McCarthy, Jr., Eaton - Simultaneous NOx and CO2 Reduction Using Diesel CDA With NVH Setup Strategy on a Heavy-Duty Diesel Engine in a Dyno Test Cell Showing Means to Meet CARB Low NOx in Steady State, Transient and Low Load Cycle
Jairo Sandoval, Cummins Inc. - Optimal Mission-Specific Dynamic Powertrain Calibration from Cloud for Class 8 Linehaul Truck Cruise Operation

For complete session descriptions and speakers visit
TECHNICAL SESSIONS
OUR SOCIETY IN THE FUTURE

AERODYNAMICS COMMITTEE: PANEL 1
4:00 p.m.
White River Ballroom D
MODERATOR
Rohit Saha, Cummins Inc
PANELISTS
Andrew Mosedale, Auto Research Center LLC
Brian McAuliffe, National Research Council Canada

POWERTRAIN COMMITTEE: POWERTRAIN STUDENT SESSION
4:00 p.m.
White River Ballroom G/H/I
Session Sponsored by

MODERATOR
Dheeraj Gosala, Cummins Inc.

AUTHORS
Siyuan Zhang, Univ. of Alabama Birmingham - A Mechanical Analogy for Modeling Distributed/Virtual Electric Drivelines
Jon Furlich, Michigan Technological Univ. - Improved Operator Comfort and Fleet Management with Sensor Proliferation
Mrunal Joshi, Purdue University - Diesel Engine Variable Valve Actuation to Enable Reduction in Engine Out Emissions with and without Requiring Exhaust Manifold Pressure Control
Luis Silva, Western Michigan Univ. - Experimental and Computational Studies of the No-Load Churning Loss of a Truck Axle

EXECUTIVE PANEL - SOCIETAL NEEDS OF THE FUTURE: TRANSPORTATION AND MOBILITY NEEDS OF THE FUTURE
4:00 p.m.
White River Ballroom E/F
MODERATOR
Claus Daniel, Oak Ridge National Laboratory
PANELISTS
Hailin Chen, Shanghai E-Drive Automobile Service Company
Boris Kort-Packard, FedEx Express
Diane Newton, HNTB Corp. - Smart Columbus Project

For complete session descriptions and speakers visit
TECHNICAL SESSIONS

FUELING THE FUTURE

EXECUTIVE PANEL - FUELING THE FUTURE: OFF-HIGHWAY APPLICATIONS AND TRENDS
10:30 a.m.
White River Ballroom E/F

MODERATOR
Navtej Singh, Navistar Inc.

PANELISTS
Shelley Knust, Cummins Inc.
Iain V. Ridley, AVL Powertrain Engineering Inc.
Michael Weinert, John Deere
Scott Woodruff, MTU America Inc.

EXECUTIVE PANEL - FUELING THE FUTURE: ON-HIGHWAY APPLICATIONS AND TRENDS
1:30 p.m.
White River Ballroom E/F

MODERATOR
Robert Wagner, Oak Ridge National Laboratory

PANELISTS
Carl Hergart, PACCAR Inc.
Charles Roberts, Southwest Research Institute
Christian Weiskirch, TRATON Group

AERODYNAMICS COMMITTEE: PANEL 2 - TRACK TESTING
10:30 a.m.
White River Ballroom D

MODERATOR
Ilhan Bayraktar, General Electric Aviation

PANELISTS
Bhargav Sowmianarayanan, Dassault Systems (USA)
Alexander Spoelstra, TU Delft
Bernard Tanguay, National Research Council Canada

POWERTRAIN COMMITTEE: DISRUPTIVE TECHNOLOGIES - PART 2
1:30 p.m.
White River Ballroom A/B/C

MODERATOR
David Gilson, SinterCast, Ltd.

PANELISTS
John Bennett, Meritor Inc.
Alexander Freitag, Robert Bosch GmbH
Philipp Rolke, IAV GmbH
Greg Shaver, Purdue University

POWERTRAIN COMMITTEE: DISRUPTIVE TECHNOLOGIES - PART 1
10:30 a.m.
White River Ballroom A/B/C

MODERATOR
Randal Goffe, PACCAR Technical Center

PANELISTS
Tracy Davis, Chevron
Michael Gerty, PACCAR Technical Center
Chung-Hsuan Huang, Cummins Inc.
Thomas Waldron, SuperTurbo Technologies Inc.

TOTAL VEHICLE & MECHATRONICS COMMITTEE: CHARGING SYSTEMS FOR ELECTRIC VEHICLES
1:30 p.m.
White River Ballroom G/H/I

MODERATOR
Fred Cartwright, Pruv Mobility

PANELISTS
Emrah Arslanturk, Cummins Inc.
Jonas Leserer, Vector
Anup Sable, KPIT Cummins Infosystems Ltd. India
Jeff Wolfe, Tritium

AERODYNAMICS COMMITTEE: PANEL 3 - PLATOONING
1:30 p.m.
White River Ballroom D

MODERATOR
Joshua Paul Kehs, PACCAR Technical Center

PANELISTS
Brian McAuliffe, National Research Council Canada
Patrick Smith, Auburn Univ.
Mart van Rijsingen, TU Delft
TECHNICAL SESSIONS

FUELING THE FUTURE

FUTURE OF COMMERCIAL VEHICLES HIGH SCHOOL PANEL DISCUSSION
3:15 p.m.
White River Ballroom G/H/I
MODERATOR
Michael Doseck, Davinci Technology Group Inc
PANELISTS
Gary Schmiedel, Sareja LLC
Kelly Schmitz, Cummins Inc.
Jacie Unpingco, PACCAR Inc.

AERODYNAMICS COMMITTEE: PANEL 4 - DRAG DESIGN
3:30 p.m.
White River Ballroom D
MODERATOR
John Kiedaisch, Navistar Inc.
PANELISTS
Onno Bartels, NLR
Brian McAuliffe, National Research Council Canada
Roy Veldhuizen, Wabco

EXECUTIVE PANEL - FUELING THE FUTURE: ALTERNATIVE AND FUTURE FUELS
3:30 p.m.
White River Ballroom E/F
MODERATOR
Lisa Farrell, Cummins Inc.
PANELISTS
Dennis Backofen, IAV GmbH
Yemane B. Gessesse, Cummins Inc.
Michael Traver, Aramco Research Center

POWERTRAIN COMMITTEE: OFF-ROAD ELECTRIFICATION
3:30 p.m.
White River Ballroom A/B/C
MODERATOR
David Cramer, The Timken Company
PANELISTS
John Kimes, Sigma Powertrain
Rustam Kocher, Daimler Trucks North America LLC
Paul Summers, Miller Technology Inc.

Activities include:
- Meet the SAE Membership Team and network with fellow members
- Tuesday, September 10, 12:30-1:30 p.m.
- Discover volunteer opportunities through SAE Propel
- Learn More about Member Connection (members-only online community)
- Sign up to become a mentor or mentee
- Wear an SAE ribbon for a chance to win a prize

NOT A MEMBER? Stop by the member lounge to join and take advantage of a special 10% on-site registration discount, and be entered to win a prize!

YOU BELONG HERE. Review all of the member career tools and benefits available to you at sae.org/membership/benefits.
TECHNICAL SESSIONS

CHARGING THE FUTURE

EXECUTIVE PANEL - CHARGING FOR THE FUTURE: OFF- AND ON-HIGHWAY APPLICATIONS AND TRENDS
10:15 a.m.
White River Ballroom E/F
MODERATOR
Michael D. Roeth, NACFE
PANELISTS
Michael Foster, Allison Transmission
Julie Furber, Cummins Inc.
Gary Horvat, Navistar Inc.
Paul Snauwaert, CNH Industria

STANDARDS SESSION 1 - TRACTOR-TRAILER INTERCONNECTION FOR NORTH AMERICA AUTONOMOUS AND ELECTRIC VEHICLES
10:15 a.m.
White River Ballroom D
MODERATOR
Dave Engelbert, Haldex Brake Products, Inc.
PANELISTS
Matthew Fry, Knorr-Bremse
Jon Intagliata, Bendix Commercial Vehicle Systems
Chris Lee, Great Dane Trailers, Inc.
Dennis Skaradzinski, Great Dane Trailers, Inc.
Wally Stegall, The Morey Corp.

CHASSIS COMMITTEE: CAE VEHICLE SYSTEM DEVELOPMENT
10:15 a.m.
White River Ballroom G/H/I
MODERATOR
Lin Li, Liebherr Mining Equip Newport News Co.
PANELISTS
Mehdi Ahmadian, Virginia Tech.
Stefano Cassara, Navistar Inc.
Boris Kort-Packard, FedEx Express
Arda Kurt, TuSimple

TOTAL VEHICLE & MECHATRONICS COMMITTEE: DEVELOPMENTS AND TECHNICAL APPROACH IN HIGHLY AUTOMATED VEHICLES
10:15 a.m.
White River Ballroom A/B/C
MODERATOR
Ananda Pandy, ZF Friedrichshafen AG
PANELISTS
Cetin Mericli, Locomation
Chuck Price, TuSimple
Alex Rodrigues, Embark Trucks
Shawn Kerrigan, PlusAI
TECHNICAL SESSIONS
CHARGING THE FUTURE

EXECUTIVE PANEL - CHARGING FOR THE FUTURE: ELECTRIC INFRASTRUCTURE CHALLENGES AND DEMANDS
12:45 p.m.
White River Ballroom E/F
MODERATOR
Mihai Dorobantu, Eaton
PANELISTS
Steven Boyd, U.S. DOE
Michael Buff, Electrify America LLC
Robbie Diamond, Securing America’s Future Energy (SAFE)
Ronald Thompson, Eaton

CYBERSECURITY PANEL - HOW WOULD YOU PREVENT THIS BREACH?
12:45 p.m.
White River Ballroom A/B/C
MODERATOR
Larry Hilkene, Cummins Inc.
PANELISTS
Faye Francy, Auto-ISAC
Kristie Pfosi, Mitsubishi Electric Automotive America
Peter Subke, Softing Automotive Electronics GmbH
Jennifer Tisdale, GRIMM

CHASSIS COMMITTEE: CAE VEHICLE SUB-SYSTEM AND COMPONENT DEVELOPMENT
12:45 p.m.
White River Ballroom G/H/I
MODERATOR
Fabian Koark, Invensity Inc.
PANELISTS
Scott Duncan, Bendix CVS
Jan Wei Pan, Autox Technologies
Guoguang Zhang, APTIV

STANDARDS SESSION 2 - BRAKING SYSTEMS FOR NORTH AMERICA AUTONOMOUS AND ELECTRIC VEHICLES
12:45 p.m.
White River Ballroom D
MODERATOR
Dave Engelbert, Haldex Brake Products, Inc.
PANELISTS
Alex Augoustidis, Graftech International Holdings Inc.
Wolfgang Hahn, WABCO
Alrik Svenson, NHTSA

For complete session descriptions and speakers visit

COMVEC™
TECHNICAL SESSIONS

CHARGING THE FUTURE

CHASSIS COMMITTEE: UNCERTAINTY QUANTIFICATION AND ROBUST DESIGN
2:30 p.m.
White River Ballroom G/H/I
MODERATOR
Nicholas Gaul, RAMDO Solutions
PANELISTS
Gavin Jones, SmartUQ
Tim Palmer, MSC Software Corp.
Tana Tjhung, FCA US LLC
Xiaobo Yang, Oshkosh Corporation

TOTAL VEHICLE & MECHATRONICS COMMITTEE: LATERAL CONTROL IN AUTOMATED DRIVING SYSTEMS
2:30 p.m.
White River Ballroom A/B/C
MODERATOR
Prasanna Srinivasan, Cummins Inc.
PANELISTS
Arda Kurt, TuSimple
Troy Schick, John Deere
James Turney, Daimler AG
Speaker TBD, ZF

EXECUTIVE PANEL - CHARGING THE FUTURE: GLOBALIZATION IN ELECTRIFICATION
2:30 p.m.
White River Ballroom E/F
MODERATOR
Stephan Tarnutzer, AVL Powertrain Engineering Inc.
PANELISTS
Jonah Leason, PACCAR Technical Center
Mark Mohr, ZF Friedrichshafen AG
Randy Sumner, Aptiv

STANDARDS SESSION 3 - STANDARDS FOR AERODYNAMICS, FUEL ECONOMY, TESTING METHODS AND APPLICATIONS
2:30 p.m.
White River Ballroom D
MODERATOR
Ilhan Bayraktar, General Electric Aviation
PANELISTS
Peter Kilcline, PACCAR
Brian McAuliffe, National Research Center Canada
Andrew Mosedale, Auto Research Center
Marius Surcel, FP Innovations
EXHIBITOR FLOOR PLAN

EXHIBITOR LIST

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Northern Illinois University - CEET .............. Exhibit Hall
Ohio State University................................. Exhibit Hall
POETS.......................................................... Exhibit Hall
Purdue University ARPA-E NEXTCAR.... Exhibit Hall
Purdue University JTRP................................. Exhibit Hall
ACCURATE TECHNOLOGIES INC  Booth 115
26999 Meadowbrook Rd
Novi, MI  48377
United States
accurateTechnologies.com
Accurate Technologies Inc. (ATI) is a supplier of automotive measurement, calibration and diagnostics hardware and software tools. With clients including global OEMs and Tier Ones, ATI’s product range includes VISION Calibration and Data Acquisition software, EMX data acquisition modules and CANary FD – a compact, rugged four channel CAN FD interface.

APTIV CONNECTED SERVICES  Booth 109
999 Republic Dr Ste 100
Allen Park, MI  48101
United States
aptiv.com/connected-services
Aptiv Connected Services helps its customers unlock the power of data by uniting rich, high-fidelity vehicle data acquisition with configurable, intelligent analytics to deliver value throughout the vehicle lifecycle. Our Aptiv Connect solutions uncover actionable insights that can help lower costs, fix problems more quickly, and discover new value streams.

BILL AUSTIN AND ASSOCIATES  Booth 108
1244 Washington St
Columbus, IN  47201
United States
billaustin.com
BAA is engaged in System and Information Engineering to help manufacturing companies bridge the gap that has arisen due to the lack of support of information systems used by product development organizations. Our core services are Requirements Management, Diagnostics, Systems Engineering Tools, Process & Project Management, and Technical & Engineering Associates.

CUMMINS  Booth 100
PLATINUM SPONSOR
Cummins
500 Jackson St
Columbus, IN  47201
United States
cummins.com
Cummins Inc., a global power leader, is a corporation of complementary business units that design, manufacture, distribute and service a broad portfolio of power solutions. Celebrating its 100th year in 2019, the company’s products range from diesel and natural gas engines to hybrid and electric platforms, as well as related technologies.

DIESEL PROGRESS  Booth 221
CONFERENCE SUPPORTER
20855 Watertown Rd Ste 220
Waukesha, WI  53186
United States
dieselprogress.com
Diesel Progress magazine covers the products, technology and industry news of all the mobile and stationary engine-powered equipment and component markets. Diesel Progress International offers a similar focus to more than 100 countries outside of North America. Both are now part of KHL, and available in print and digital editions and include NewPowerProgress covering electrification and electric vehicles.

DISTEK INTEGRATION, INC.  Booth 308
6612 Chancellor Dr Ste 600
Cedar Falls, IA  50613
United States
distek.com
DISTek Integration provides custom software development services for mobile electronics in the off-highway industry. Our areas of expertise include plant and controls modeling using MATLAB, Simulink, and similar tools; vehicle networks – CAN, J1939, ISOBUS; embedded development including AUTOSAR; and automation and test systems – Hardware-in-the-Loop, LabVIEW, and similar tools.

DSPACE INC  Booth 103
50131 Pontiac Trl
Wixom, MI  48393
United States
dspaceinc.com
dSPACE develops and distributes integrated hardware and software tools for developing and testing electronic control units. With approximately 1,700 employees worldwide, dSPACE is headquartered in Paderborn, Germany; has three project centers in Germany; and serves customers through regional dSPACE companies in the USA, the UK, France, Japan, China, and Croatia.

EATON  Booth 206
GOLD SPONSOR
Eaton
26101 Northwestern Hwy
Southfield, MI  48076
United States
eaton.com
Eaton is a power management company with energy-efficient solutions that help customers effectively manage electrical, hydraulic and mechanical power more reliably, safely and sustainably. The company is dedicated to improving the quality of life and the environment through the use of power management technologies and services. For more information, visit Eaton.com.
**ESTECO**
Booth 209
39555 Orchard Hill Pl Ste 457
Novi, MI 48375
United States
esteco.com
ESTECO is an independent software provider, highly specialized in numerical optimization and simulation data management with a sound scientific foundation and a flexible approach to customer needs. Our technology brings modularity, ease of use, standardization, and innovation to the engineering design process. ESTECO’s smart engineering suite brings enterprise-wide solutions for design optimization, simulation and process data management (SPDM), and process integration and automation. With 20 years’ experience, the company supports over 300 leading organizations in designing the products of the future, today.

**ETAS INC**
Booth 106
3021 Miller Rd
Ann Arbor, MI 48103
United States
etas.com
ETAS provides a comprehensive product portfolio of tools designed to increase quality and efficiency in embedded systems development, with solutions for software modeling/integration, hardware-in-the-loop simulation, virtual and rapid-prototyping, measurement/calibration and functional safety and security. Our tools are widely deployed in automotive, off-highway, and adjacent segments of the embedded industry.

**FEV**
Booth 107
4554 Glenmeade Ln
Auburn Hills, MI 48326
United States
fev.com
FEV experts are passionate about advancing the commercial vehicle industry through the design, development, integration and validation of vehicle and propulsion system technologies.

**G.W. LISK**
Booth 213
2 South St
Clifton Springs, NY 14432
United States
gwlisk.com
LISK is a global leader in the design and manufacture of custom solenoids, solenoid valves, sensors, and flame arrestors. We provide custom engineered solutions to thousands of customers in diverse markets throughout the world, including, aerospace, defense, on/off highway, and oil & gas. Our customers have come to rely on our years of experience and expertise.

**HBM TEST AND MEASUREMENT**
Booth 203
19 Bartlett St
Marlborough, MA 01752
United States
hbm.com
HBM Test and Measurement offers a wide range of high-performance product solutions from sensors and test instrumentation to analysis software. HBM is a leading global supplier of high-quality custom sensors, torque sensors, strain gages, load cells, high-speed and ruggedized data acquisition systems plus software for structural durability testing and analysis.

**HMS NETWORKS**
Booth 312
35 E Wacker Dr Ste 1700
Chicago, IL 60601
United States
hms-networks.com
HMS Networks is the leading independent supplier of solutions for industrial communication and the Industrial Internet of Things, IIoT. HMS develops connectivity solutions that can help you unlock new data, have clear visibility, and minimize costs. HMS Networks can help keep you connected.

**IAV AUTOMOTIVE ENGINEERING INC**
Booth 214
15620 Technology Dr
Northville, MI 48168
United States
iav.com
IAV is the single source for OEM and supplier needs. Focusing on powertrain, electrification, alternative fuels, active and functional safety, infotainment, fleet development and more. IAV has capabilities in design and concept, powertrain development, analysis, simulation, testing, optimization, validation and integration for all vehicle applications.

**IRDETO USA INC**
Booth 207
35 W Huron St
Pontiac, MI 48342
United States
irdeto.com/connected-transport
Irdeto is the world leader in digital platform security, protecting platforms and applications for video entertainment, video games, connected transport and IoT connected industries. With 50 years of security expertise, Irdeto’s software security technology and cyberservices protect over 5 billion devices and applications for some of the world’s best-known brands.
EXHIBITOR PROFILES

KIMURA FOUNDRY AMERICA  Booth 215
789 W Boomer Way
Shelbyville, IN 46176
United States
kimurafoundry.com
SAFE. CLEAN. SMART Rapid Prototype Casting & Small Lot Production

KPIT INFOSYSTEMS INC  Booth 314
28001 Cabot Dr
Novi, MI 48377
United States
kpit.com
KPIT is a global technology company with software solutions that will help mobility leapfrog towards clean, smart and safe future. Specializing in embedded software, AI & Digital solutions, KPIT enables customers across the globe accelerate implementation of next generation mobility technologies and works with leaders in mobility.

LHP ENGINEERING SOLUTIONS  Booth 116
1888 Posthard Dr
Columbus, IN 47203
United States
lhpes.com
LHP aims to create a safer, smarter, and more connected world through our knowledge in embedded controls, telematics, and data analytics. LHP focuses on the safety adherence and integration of autonomous systems within vehicles and specializes in creating comprehensive, flexible solutions that address the current needs in the transportation industry.

MECHANICAL SIMULATION  Booth 218
755 Phoenix Dr
Ann Arbor, MI 48108
United States
carsim.com
We are the world’s leader in virtual prototyping software for vehicle systems, specializing in interactions between 3D vehicle dynamics, advanced controllers, driver behavior, and the road surface. TruckSim aids in developing and validating subsystems, complete vehicles, controller designs and ADAS. Customers include more than 100 OEMs and suppliers, and more than 200 universities and government research groups worldwide.

OEM OFF-HIGHWAY  Booth 112
CONFERENCE SUPPORTER
201 N Main St
Fort Atkinson, WI 53538
United States
oemoffhighway.com
OEM Off-Highway is dedicated exclusively to the product development team at heavy-duty mobile off- and on-road equipment manufacturers. Our in-depth reporting on global market trends, technology developments, engineering innovations and new product releases keep our subscribers informed of the latest information in a dynamic and rapidly evolving industry.

OETIKER, INC.  Booth 212
6317 Euclid Street
Marlette, MI 48453
United States
oetiker.com
Oetiker provides customers with the peace of mind that their mission-critical components are reliably connected. We are the global leader in high-end connecting solutions for the commercial vehicle industry. Our expertise in high-quality clamps, rings, straps and quick-connectors ranges from powertrain and drivetrain applications to tank fastening applications.

SAE INTERNATIONAL  Booth 125
400 Commonwealth Dr
Warrendale, PA 15096
United States
sae.org
The SAE Membership Lounge is a space to network with fellow members, enjoy snacks, prizes/giveaways, discover volunteer opportunities, and more — including an industry lecture on “Vehicle Dynamic Testing and Design for Formula SAE” by Siddarth Attravanam, Manager of Tire & Vehicle Dynamics at Cooper Tire & Rubber Co. We’re also offering a discount on professional membership if you join during the event.

SEM TECHNOLOGIES INC  Booth 302
10475 Crosspoint Blvd
Indianapolis, IN 46256
United States
sem.se
SEM, Swedish Electro Magnets, is a leading global supplier with over 100 years of industrial experience and deep knowledge of electromagnetic applications. We produce advanced alternative fuel ignition systems, injector stators and linear position sensors for stationary engines and commercial vehicles, and small engine systems for premium forestry hand tools.
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**SOFTING AUTOMOTIVE ELECTRONICS GMBH**  
Booth 202  
Richard-Reitzner-Allee 6  
Haar  8550  
Germany  
[softing.com](http://softing.com)  
Softing provides a comprehensive portfolio of applications used both for developing diagnostic processes and for carrying out diagnostics. Typical areas of application are accessing the fault memory, flash programming, measured value evaluations, parameterization, the control of system components and the actual ‘diagnostics’

**SONCEBOZ CORPORATION**  
Booth 113  
Rue Rosselet Challandes 5  
Sonceboz  2605  
Switzerland  
[sonceboz.com](http://sonceboz.com)  
Our core competencies consist of design, development and production of mechatronic drive systems and electric motors that operate in harsh environments. Our application’s fields are emission and engine control, electro-hydraulics and thermal management. Innovation, quality and service are our keys to success for worldwide OEM customers and their suppliers.

**TEI**  
Booth 219  
12550 Tech Center Dr  
Livonia, MI  48150  
United States  
[teintl.com](http://teintl.com)  
A global leader in the design, engineering and manufacturing of prototype and low volume production of High Integrity Aluminum Castings with extensive capabilities in 5 Axis Precision Machining and Light Assembly.

**THOMAS MAGNETE USA**  
Booth 220  
3225 Gateway Rd Ste 350  
Brookfield, WI  53045  
United States  
Thomas is a leading manufacturer of electromagnetic actuators, pump, and valves for mobile hydraulics, automotive, commercial vehicles, and other high-tech industries like the medical technology sector. We are a development partner and system supplier of innovative, customized electronic actuator solutions for fluid and mechatronic applications based on efficient standards.

**TLX TECHNOLOGIES**  
Booth 306  
N27 W23727 Paul Rd  
Pewaukee, WI  53072  
United States  
[tlxtech.com](http://tlxtech.com)  
TLX Technologies designs and manufactures custom solenoid and valves for vehicle applications. These applications are characterized by complex environments that require precise control, near-zero power consumption, failsafe modes and integrated controls. TLX partners with OEMs and Tier 1 suppliers to meet these requirements by delivering efficient, cost-effective solenoids and valves.

**TRU-FLEX LLC**  
Booth 114  
6640 Intech Blvd Ste 200  
Indianapolis, IN  46278  
United States  
[tru-flex.com](http://tru-flex.com)  
We have six manufacturing facilities in the state, corporate headquarters in Indianapolis, and manufacturing in Europe. Products also include flexible metal hose, tubes, brackets, and shields.
Missouri S&T produces “street smart” engineers who don’t mind getting their hands dirty, can think on their feet, and understand the process of global product development, so they can contribute to their employers’ mission from the first day on the job. S&T design team alums understand that communication, teamwork, and business are all essential to engineering success.

Northern Illinois University - CEET
College of Engineering and Technology
NIU Engineering Bldg Rm 306
DeKalb, IL  60115-2828
United States
niu.edu/CEET
Northern Illinois University located in DeKalb, Ill., is a student-centered, nationally recognized public university, with expertise that spans the globe in a wide variety of fields and industries. Featuring over 40 labs and graduating over 300 seniors each year, the College of Engineering and Engineering Technology offers accredited degree programs in technology and engineering including industrial and systems, electrical, mechanical, biomedical, and mechatronics.

Ohio State University
930 Kinnear Rd
Columbus, OH  43212
United States
car.osu.edu
The Center for Automotive Research (CAR) is an interdisciplinary research center in The Ohio State University’s College of Engineering. CAR research focuses on: energy, safety and the environment, aimed at improving sustainable mobility. CAR offers state-of-the-art facilities for students, faculty, research staff and industry partners.

POETS
1304 W Springfield Ave Ste 2270Dcl
Urbana, IL  61801
United States
poets-erc.org
POETS (Power Optimization of Electro-Thermal Systems) Center was established by NSF in 2015, through a highly competitive national proposal process. POETS’s vision is one of co-design, driving synergistic thermal and electrical power for tightly-constrained mobile environments, to achieve increased power density across a broad array of industrial and commercial uses.

Purdue University
ARPA-E NEXTCAR
915 W State St # 3-315
West Lafayette, IN  47907
United States
purdue.edu/discoverypark/cav/nextcar
Up to 20% fuel savings in Class 8 trucks? Purdue, Peloton Technology, and Cummins are maximizing efficiencies with an emphasis on two-driver, platooning. The team assesses benefits of integrated, connected, vehicle and powertrain control systems for line-haul trucks through engine and vehicle validations. Oh, while keeping costs under $3,000/vehicle.

Purdue University
Joint Transportation Research Program
207 S Martin Jischke Dr
West Lafayette, IN  47907
United States
purdue.edu/jtrp
JTRP at Purdue is a partnership with INDOT to facilitate collaboration between public agencies, academia, and industry to implement innovations resulting in continuous improvement of transportation infrastructure. We are exploring opportunities to fuse modern vehicle sensor information with other data sources to help improve transportation efficiency and safety.
September 15-17, 2020
Rosemont, IL
2019

COMVEC™
September 9-11
Indianapolis, IN

Connect2Car Executive Leadership Forum
September 17-18
Chicago, IL

On-Board Diagnostics - Americas
September 17-19
Garden Grove, CA

North American International Powertrain Conference
September 18-20
Chicago, IL

Brake Colloquium & Exhibition
September 22-25
Orlando, FL

AeroTech Europe
September 24-26
Bordeaux, France

Thermal Management Systems Symposium
October 15-17
Plymouth, MI

Innovations in Mobility
October 29-31
Novi, MI

Small Engine Technology Conference & Exposition
November 19-21
Hiroshima, Japan

DoD Maintenance and Logistics Exhibition
December 9-11
Spokane, WA

DoD Maintenance Symposium
December 9-12
Spokane, WA

2020

Connect2Car at CES
January 7
Las Vegas, NV

Government/Industry Meeting
January 22-24
Washington, DC

Hybrid and Electric Vehicle Technologies
January 28-30
Pasadena, CA

AeroTech Americas
March 17-19
Pasadena, CA

On-Board Diagnostics – Europe
March 24-26
Dublin, Ireland

High Efficiency IC Engine Symposium
April 19-20
Detroit, MI

WCX SAE World Congress Experience
April 21-23
Detroit, MI

COMVEC™
September 15-17
Rosemont, IL

North American International Powertrain Conference
September 16-18
Chicago, IL

Powertrains, Fuels & Lubricants Meeting
September 22-24
Krakow, Poland

On-Board Diagnostics - Americas
September 22-24
Indianapolis, IN

Thermal Management Systems Symposium
October 6-8
Mesa, AZ

Brake Colloquium & Exhibition
October 11-14
San Antonio, TX

Heavy-Duty Diesel Emissions Control Symposium
October 13-14
Gothenburg, Sweden

Small Powertrains and Energy Systems Technology Conference
November 10-12
Minneapolis, MN

DoD Maintenance and Logistics Exhibition
December 7-9
Kansas City, MO

DoD Maintenance Symposium
December 7-10
Kansas City, MO

2021

Government/Industry Meeting
February 3-5
Washington, DC

AeroTech Americas
March 9-11
Orlando, FL

WCX SAE World Congress Experience
April 13-15
Detroit, MI

Noise and Vibration Conference & Exhibition
June 14-17
Grand Rapids, MI

COMVEC™
September 14-16
Rosemont, IL

North American International Powertrain Conference
September 15-17
Chicago, IL

On-Board Diagnostics Symposium
September 21-23
Garden Grove, CA

Brake Colloquium & Exhibition
October 17-20
Orlando, FL

For an updated listing of events, dates and locations, please refer to sae.org/events/