

Fall 2026 ICAIA Conference Technical Sessions

Waubonsee Community College

Session Title: Diagnostic Processes

Presenter: Ken Zanders

Description: This seminar provides college automotive instructors with a clear, teachable framework for guiding students through modern diagnostic thinking. In 1 hour and 45 minutes, participants learn how to break the diagnostic workflow into practical, repeatable steps that strengthen student reasoning, reduce guesswork, and improve lab performance.

The session covers:

- Modeling effective concern verification and information gathering
 - A strong analysis format showing the use of lab scopes for failure diagnosis
- Teaching efficient visual and preliminary inspection habits
- Helping students interpret DTCs, freeze-frame data, and scan tool information
- Coaching students to form diagnostic hypotheses and select the correct test path
- Integrating meter and scope testing into student-friendly routines
- Improving documentation, task sheets, and communication of diagnostic results

Instructors leave with classroom-ready strategies and examples they can immediately apply to reinforce a structured diagnostic process across their courses and ASE-aligned assessments.

Session Title: Leading body shops follow OEM repair procedures.

Presenter: Todd Korpi-3M

Description: Help protect yourself, your shop, and your customer by repairing the vehicle the right way, every time.

Over the last few years there has been increased emphasis placed on the responsibility that body shops have in delivering a vehicle to its original OEM design. It is not just about completing the repair, it's about completing the repair the right way, properly and safely.

Vehicle construction and technology is also changing rapidly and can impact the way a repair should be performed. How do shops keep up with the changing industry and deliver proper repairs? It all starts with researching OEM repair procedures and guidelines.

Session Title: Scopes don't need to be scary.

Presenter: Jim Van Bladel & Eric Dieterich- John Hersey High School

Description: High level scope use may be essential for a master technician, but when teaching an introductory automotive course they can be an awesome tool for visual learners to "see electricity". We will do a series of hands-on labs using relatively inexpensive uScopes and test boards to get a waveform on the screen. We are not going to focus on multi-channel custom

PICO templates. You will see A/C signals to simulate two wire PM sensors (Wheel Speed, CKP, CMK), and we will create a simple circuit to show how voltage regulation and PWM are used on modern LED brake light systems. If time and facilities permit we will also demonstrate some single channel PICO functions that take less than 5 mins, only a few clicks, to visualize what the battery is doing when we start a car. Kids can see the "chugs" as you try and start the engine.

This class is designed for people with limited or no experience using a scope, people who think scopes are too advanced for their intro classes, or people looking for different ways to teach electrical theory.

Session Title: This isn't your grandpa's body filler

Presenter: Steve Touchton – ITW Evercoat

Description: Excessive pin holes, hard to sand, mapping issues, cracking, etc., why is this happening now, I've used filler for 20 years and never had this happen until now. Do you want to know why? Do you want to spend less time applying and sanding filler? This class is for you, I'll show you how these issues happen and what you can do to prevent them. We'll discuss the advancement in polyester fillers and how product application has changed.

Session Title: The 3Cs of Automotive Education

Presenter: Todd Fortier- Future Educators Forever

Description: This presentation is designed for instructors who deliver content to automotive students. I compiled all of my mistakes from a thirty-year career in higher ed in an attempt to flatten the learning curve. Using practical approaches for simplifying instruction, addressing student needs, improving assessment and retention, and building instructor confidence. Most of all, it focuses on using their skills as a technician to help them teach. Topics covered (very quickly and with a lot of words): Career and Technical Education misconceptions, Meeting students where they are, Educational Assumptions, Identifying learning styles, How you can teach without trying, Student needs, Classroom simplification, Effective Assessments, Imposter Syndrome, Retention, Failing Forward, Case studies.

Session Title: Make it memorable or just do whatever you did last time

Presenter: Todd Fortier- Future Educators Forever

Description: In this presentation, I will help you, help students' families get an answer when they ask the question. What did you learn in school today? Seriously, this presentation will dive into what we can do to increase retention, buy in, and lifelong learning for students. If you have students that can tell you all about your lecture topic one day but cannot even remember the name of it the next week, you need this class. If you find yourself repeating material from prior

semesters daily to your students, you need this class. If you are question how your students find their way to your campus every day because they cannot remember anything you say, you need this class. If you want to have your students hanging on your every word, good luck! If you would like to get some options to put into practice to increase retention. Retention of material. Retention in your program. Retention in the Industry. Then this class should have a good ROI.

Session Title: Electric Vehicle Thermodynamics

Presenter: Al Santini- ConsuLab

Description: In this seminar we will look at the modern electric vehicle and see how it cools or heats both the passenger compartment and the EV battery. Topics will include: EV heat pump, internal and external heat exchangers, chiller, PTC heater, electronic expansion valves, glycol loop, latent heat, thermodynamics, sub-cool and Super Heat. We will use 4 digital thermometers, High and Low A/C pressure gauges, and look at various operating modes for both the glycol side and the refrigerant side, using the new ConsuLab EV-2000 Electric Vehicle Thermodynamics Trainer. The class will be partially hands-on, PowerPoint based. You will leave with colorized diagrams for various heat and cool modes.

Session Title: EV Circuits

Presenter: Al Santini- ConsuLab

Description: This seminar will cover in depth the two common circuits found in Electric Vehicles: the High Voltage and the High Voltage Interlock Loop. We will use Consulab's EV-400 trainers with 12 available for hands on use. We will look at common problems and how the module in charge sets DTC's. Some basic diagnostics will be covered with opens, shorts and isolation issues.

Session Title: Hybrid and Electric Vehicle Low Voltage Battery Systems

Presenter: Curt Ward -Joliet Junior College

Description: One of the most overlooked systems on a hybrid or electric vehicle is the low voltage battery system. This class will highlight the operation and the diagnostics of the low voltage battery and the DC-DC converter. Case studies will be used to demonstrate real-world repairs. Simple lab activities will be shared that can be used to enhance a basic electrical course or a stand-alone hybrid and electric vehicle class.

Session Title: From Screen to Shop: Instructor-Led Strategies That Improve Automotive Learning

Presenter: Alex Richards and Wendy McNally-Electude

Description: Automotive instructors often develop their most effective teaching practices through experimentation, adaptation, and collaboration with other educators. In this instructor-led session, automotive educators will present concise case studies showing how they have used digital learning, classroom routines, student performance information, and hands-on activities to address real instructional challenges.

Each presenter will explain the challenge, the strategy implemented, the student response, evidence of improvement, and lessons learned. Electude will moderate the discussion and facilitate an audience challenge clinic. Attendees will leave with a practical collection of peer-tested techniques they can adapt for their own programs, whether or not they currently use Electude.

Learning Objectives: By the end of the session, participants will be able to:

1. Identify at least three instructor-tested practices for improving automotive student engagement and understanding.
2. Apply a repeatable framework for connecting online theory instruction with hands-on automotive activities.
3. Describe how student performance information can support earlier and more targeted instructional intervention.
4. Select one strategy to implement or adapt within their own program.

Session Title: EV and Hybrid Training. What we need to be teaching our Learners as the industry Evolves

Presenter: Tim Wallace and Kevin O'Neill- Otago Polytech

Description: We have been teaching EV and Hybrid vehicle training in New Zealand for almost 10 years across all learner levels. From people who are just entering the industry through to advanced diagnostics for experienced technicians. We will share our journey, talk about how it has evolved over the years and then focus on what the future of EV and Hybrid training looks like. We will focus on how we deliver to learners and what practical content is important to ensure the next generation of technicians are prepared to fix these vehicles in the real world

Session Title: Preliminary Overview & Usage of Acoustic Imaging for Automotive Applications

Presenter: Andrew Tillman- SIU

Description: We will provide a basic introduction to acoustic imaging technology and its applications in the automotive industry. Participants will learn about acoustic imagers and their ability to identify and diagnose sources of noise, vibration, and air or gas leakage—often without requiring direct physical access to the source.

Session Title: New fastener technology and related fastener procedures

Presenter: Kevin S. McCartney- Napa AutoTech

Description: This class reviews overlooked realities, standards and Technology of modern fasteners, and fastening procedures. This ranges from ASTM standards to Torque to Yield and examines One-Time Use and Multi-Function Fasteners, including the misunderstood applied physics that lead to common failures.

Session Title: Dramatic Changes in Braking Systems

Presenter: Kevin S. McCartney- Napa AutoTech

Description: This class addresses the new technologies that are providing huge improvements in brake response and reaction times. It's NOT just about ADAS, it's about what is required for modern brakes to work effectively with or without ADAS on EV and ICE applications! From Electro-hydraulic "Brake by Wire" (EHB), Electro-Mechanical and Electro-Magnetic to new Brake Particulate Emission Standards and reduced brake drag, brakes are changing faster than any other system on the car. And, yes, the newest Class 6 & Class 7 fluids are also addressed.

Session Title: Turbulent Jet Ignition Systems

Presenter: Stacy Cantrell- Stellantis

Description: This session covers the new 2.0L Hurricane engine in the Grand Cherokee. We'll talk about all things engine mechanical, the variable geometry turbo, and the combustion chamber that has pre-combustion, 2 spark plugs, and 2 injectors-both GDI and PFI in each cylinder. We'll also mention the cooling system and serviceability of components.

Session Title:Beyond the Bay- Preparing the Next Generation of Automotive Technicians in an AI, EV, and Connected World

Presenter: Nikki Lester- Aidex Educational Systems

Description: The automotive industry is undergoing one of the most significant transformations in its history—driven by electrification, artificial intelligence, advanced diagnostics, and software-defined vehicle systems. Yet many automotive programs are still structured around legacy skill sets that no longer reflect the realities of today's workforce, creating a dangerous gap between what students learn and what employers need from day one.

This session explores how automotive educators can evolve their programs to meet current and future industry demands—without abandoning the foundational skills that have always defined excellent technicians. Attendees will gain insight into four technology forces reshaping the field: electric and hybrid vehicle systems, ADAS calibration, networked diagnostics, and software-defined vehicles. Each shift carries direct instructional implications for how we structure curriculum, assess learning, and build safety progressions.

The session will also address one of the most urgent and least-discussed challenges in automotive education: expanding participation. With women representing just 1.8% of automotive service technicians and less than 1.2% of dealership technicians nationwide, and with the industry facing an annual shortfall of roughly 37,000 trained professionals, the talent crisis is as much a perception problem as it is a skills problem. We will examine practical, research-backed strategies for broadening access, improving career exploration, and reaching students—particularly at the middle and early high school levels—before they self-select out.

Session Title: ASE Accreditation Updates

Presenter: Dan Klecker- ASE Education Foundation

Description: ASE is doing exactly as the new president, Dave Johnson, suggested by knocking the dust off the brand. In the last year ASE has launched a new website and is developing a new portal for the accreditation process. They also acquired the WrenchWay brand and renamed it ASE Connects. ASE also received a \$25 million Department of Labor grant to increase the number of registered apprenticeships in the transportation field. I will explain these updates and how they impact instructors and your programs especially if you are due to renew your program's ASE Accreditation.

Session Title: Advisory Committees: Benefit vs Requirement

Presenter: Dan Klecker- ASE Education Foundation

Description: This session will present ideas on how to hold advisory meetings that actually benefit your program and not just check a box.

Session Title: How to teach network diagnosis.

Presenter: Scott Shotton- The Drivability Guys

Description: Learn network diagnosis and tips to teach the techniques to students.

Session Title: Analog, digital, and what the heck is that?

Presenter: Scott Shotton- The Drivability Guys

Description: Scope a TPS, Scope a MAF, or even a DPF pressure sensor... What you might not know about SENT protocol.

Session Title: Shift Anatomy of Modern Transmissions

Presenter: Sean Boyle- SIU

Description: See the shift process at a new level within the modern 6-, 8-, and 10-speed transmission with actual pressures measured at the clutches. This session covers how tuning tools, like HP Tuners, modify the shift control. You'll be surprised to see what truly makes a difference and what doesn't!

Session Title: Diagnostic obstacles - from scan tools to DMMs to DSOs - where they work well and where they can lead you astray

Presenter: Sean Boyle- SIU

Description: In this seminar, Sean explores common diagnostic issues—whether it's misinterpreting DMM, Scope, or scan data, battling stubborn system controls, or struggling to confirm electronic operation. Learn which diagnostic methods to trust, which to confirm, and which to avoid entirely. Sean will share a bulletproof process to guide you logically through symptoms and develop efficient, timely repairs.

Session Title: Measuring and Structural Analysis

Presenter: Greg Fritz- Celette Inc.

Description: In this session, I will be showing the NAJA measuring system for verification of structural damage. We will discuss the need to measure, how to interpret the findings and understand the process. We will walk through an initial setup and then let participants take measurements. We will also show how to measure with a Tram Gauge.

Session Title: GM Case Studies and EV Safety

Presenter: Colton Karas and Joel Pritchard- General Motors

Description: GM Field Service Engineers will discuss a variety of case studies as well as modern EV safety protocols that GM has through their dealerships.

Session Title: Automotive Networking

Presenter: Mark Bone- MegaTech

Description: Automotive networks, CANbus (controller area network) unique demonstration technique for 1st time students to build the "nodes". The session is designed to build technicians with high impact and no pressure. You'll learn how to show your students how to a) build the "nodes", b) install the termination resistors, c) connect nodes to the "bus", and d) see the data.

Session Title: Master's degrees and Technical Education

Presenter: Joseph Ragnanese III and William Ellis

Description: This presentation covers current degree opportunities for automotive and related fields. This also covers concepts for graduate degree programs related to the transportation industry. Education and industry statistics will also be themes covered throughout.

Session Title: Life of a Repair Order

Presenter: Richard Meyer- General Motors

Description: How repair order documentation lives beyond getting paid covering items like warranties, insurances, legal liabilities, and more.

Session Title: Understanding ADAS

Presenter: Patrick Horn- Hunter Engineering

Description: This is a short presentation given to shop owners and covers the evolution of ADAS, the basics of system components, and the importance of their proper calibration. It also discusses OE requirements, some of the potential liability issues centered around this topic, and the return-on-investment shops can expect by entering this market. The presentation outlines the training resources available through Hunter and concludes with a live demonstration of our latest technology.

Session Title: Simplified Oxygen Monitor Diagnostics

Presenter: Ryan Mount- Opus Inspection

Description: This class will take an in depth look into the oddities encountered when diagnosing oxygen monitor faults, most of the time emissions monitors are straight forward to diagnose, this presentation will cover various case studies where that could be farthest from the truth.

Session Title: Deciphering Gasoline Turbo Drivability

Presenter: Tim McPheron- NAPA Autotech

Description: This course is designed for the technician who diagnoses and repairs engine performance issues. We provide an in-depth examination of the turbocharger's function, operation, and componentry. In addition, this course offers practical approaches to diagnosis and servicing of turbocharger systems. Gasoline engine turbocharger-specific diagnostic techniques, using fuel trims and volumetric efficiency are highlighted. In addition, differences between speed density and air density fuel strategies and how they affect turbocharger operation are detailed.

Session Title: Modern Electronic Steering and Suspension Systems

Presenter: Tim McPherson- NAPA Autotech

Description: With the advent of Advanced Driver-Assistance Systems (ADAS), steering and suspension systems are now integrated into the broader scope of safe vehicle operation through computer monitoring and correction. Understanding how these systems integrate, operate, and are diagnosed, will be instrumental for a profitable shop.

In-depth view of these systems:

Using scan tool and scope diagnostics

The power steering control module's place on the information Bus

Coverage of proper resets and calibrations

Differentiate various systems: pneumatic, magnetic, and hydraulic

Session Title: PPG collision industry update along with what is new at PPG Automotive Refinish.

Presenter: Doug Smith and Brian Meitz - PPG Industries Inc

Description: PPG continues to expand its automotive refinish offerings, and I would like to introduce two new paint line options, Velocity and QuickLine.

These PPG product lines provide additional solutions for today's collision repair industry and could offer valuable opportunities for students to gain exposure to the types of refinish products and processes they may encounter in the workplace.

Session Title: A discussion on using Picoscopes.

Presenter: Trevor Schlientz- Autonerdz

Description: An interactive session about PicoScopes and their many uses in automotive diagnostics. I will bring multiple presentations, case studies, and examples. This session is for me to answer questions you may have and demonstrate whatever techniques or uses the attendees might be curious about.

More to be added...