



PAVE Training December 2-5, 2021

The Power of Joining Together!



Wrap up 2021 with The Event of the Year!

- Top trainers in technical, management, and collision
- 40+ training sessions over 4 days
- All sessions available on-demand for 30 days
- Easy, downloadable training materials
- **NEW:** Video chats with vendors and other attendees

The **ULTIMATE** Training for:

- Technicians
- Owners
- Managers
- Service advisors
- Collision professionals

PAVE RAVES:

"PAVE was firing on all cylinders. From top notch training to the ability to watch all the classes. I'll be attending the next one for sure."

– Paul Smith, Heart Auto Clinic, Sarasota, FL

"I was amazed by the virtual training platform and the live communication between teachers and attendees at PAVE. The trainers are leaders in their fields and were prepared with fresh new ideas, trends and insight."

– Micah Strom, Modern Collision Rebuild & Service, Bainbridge Island, WA

"PAVE Training had something for everyone, owners, techs no matter what level of experience, managers from both the mechanical and collision side. Great education by some of the nation's greatest instructors. Being able to watch everything for over a month gave the opportunity to watch every topic on the list at your pace. Awesome learning experience without the need to travel and be away from family and work."

– Ross MacPherson, MacPherson's Auto Service, Ontario, Canada

**ONLINE REGISTRATION
NOW OPEN!**

**Early Bird Registration
through November 1:**

\$199 per person

PAVEtraining.com



REGISTER TODAY!

December 2-5, 2021

Don't miss the ULTIMATE training event! 877-257-2100

PAVE Training Schedule | December 2-5, 2021

THURSDAY, December 2

	INSTRUCTOR	TIME (PST)
AFTERNOON		
Business by Design: The Business You Want	Hunt Demerest	12:30pm – 2:30pm
Car Count is the Pretender ARO is the Real Hero	Bryan Stasch	12:30pm – 2:30pm
Front of the House Technologies	Chris Cloutier Craig O'Neill	12:30pm – 2:30pm
State of the Collision Industry	Mike Anderson	12:30pm – 2:30pm
Chrysler Communication and Security	Bill Weaver	12:30pm – 5:00pm
Essential Diagnostic Steps for Drivability & Electrical Issues	Eric Ziegler	12:30pm – 5:00pm
Fuel Trim Diagnostics	John Thorton	12:30pm – 5:00pm
Testing Components with Snap-on Guided Component Tests	Jason Gabrenas	12:30pm – 5:00pm

FRIDAY, December 3

	INSTRUCTOR	TIME (PST)
MORNING		
Driving A New Performance Standard In Collision Repair	Dave Flockhart	7:00am – 9:00am
Electric Vehicles – What you need to know and how to prepare your shop and your team	Bud Center Dirk Fuchs Jeff Poole	7:00am – 9:00am
Domestic Charging Systems and Power Management	Kevin Leiby Kevin Roberts	7:00am – 11:30am
Intake Airflow Technologies	Scott Townsend	7:00am – 11:30am
Scopes for Diagnostics	Scot Manna	7:00am – 11:30am
Vibration Correction Diagnosis	Gary Machiros	7:00am – 11:30am
New 3-Phase BLDC (Brushless DC) Fuel Pumps	Dave Hobbs	7:00am – 11:30am
7 Habits of Successful Service Advisors	Bill Haas	9:30am – 11:30am
Branding Brings in the Bucks	Danny Sanchez	9:30am – 11:30am
Presenting & Selling Diagnostics with Value	Dave Schedin	9:30am – 11:30am
Refinish Area Optimization – How to Maximize Throughput and Profit in Your Paint Department	Robb Power	9:30am – 11:30am
Using Labor Intensive & Diagnostic Labor Rates	Vin Waterhouse	9:30am – 11:30am

LIVE VIRTUAL EXPO

11:30am – 1:30pm

Visit the PAVE Virtual Expo to chat with the trainers, sponsors and vendors. This is your opportunity to preview the latest tools, equipment, technologies and supplies, and network with industry professionals.

AFTERNOON

Becoming Great on the Phone	Cecil Bllard	1:30pm – 3:30pm
Enhancing the Customer Experience	Barry Rinehart	1:30pm – 3:30pm
Google My Business, Search Map Listings – The best way to generate new business from online marketing	Dan Vance	1:30pm – 3:30pm
Tax Strategies for 2022	Eric Joern	1:30pm – 3:30pm
Ford Powerstroke	Tom Rayk	1:30pm – 6:00pm
The Pressure is On II	Bernie Thompson	1:30pm – 6:00pm
Thermal Imaging for Diagnostics	Todd Doty Tom Smith	1:30pm – 6:00pm
Turbo Charger Operation and Diagnostics	Tanner Brandt	1:30pm – 6:00pm
Vehicle Technology Service Update on Advanced Vehicle Platforms	Scott Brown	1:30pm – 6:00pm

SATURDAY, December 4

	INSTRUCTOR	TIME (PST)
MORNING		
Do your clients see your business as an expense or investment?	Mark Bortle	7:00am – 9:00am
Evolution of Vehicle Construction Materials & the Impact on Collision Repairs	Jason Bartanen	7:00am – 9:00am
Positioning Your Shop to Service Electric Vehicles	Carolyn Coquillette	7:00am – 9:00am

continued

PAVE Training Schedule *continued...* | December 2-5, 2021

SATURDAY, December 4

	INSTRUCTOR	TIME (PST)
MORNING		
Diagnosing Network and Communication Issues Effectively	Scott Shotton	7:00am – 11:30am
GM Infotainment and MOST Systems	Ken Zanders	7:00am – 11:30am
Hybrid and EV High Voltage Systems	Peter Sarantidis	7:00am – 11:30am
Hot Heads 2; Advanced Cooling System Service and Diagnosis	Donny Seyfer	7:00am – 11:30am
The Marriage of Scan Tool Data and Automotive Lab Scopes	Adam Robertson Cliff Shenkel	7:00am – 11:30am
7 Ways to Dominate the Competition	David Luehr	9:30am – 11:30am
Attracting Technicians Through Marketing	Kim Walker Brian Walker	9:30am – 11:30am
Radical Transparency – Selling with Absolute Clarity	Clint White	9:30am – 11:30am

LIVE VIRTUAL EXPO

11:30am – 1:30pm

Visit the PAVE Virtual Expo to chat with the trainers, sponsors and vendors. This is your opportunity to preview the latest tools, equipment, technologies and supplies, and network with industry professionals.

AFTERNOON

Celebrate Communication and Reviews!	Jimmy Lea	1:30pm – 3:30pm
Confident Selling	Maylan Newton	1:30pm – 3:30pm
Creating and Implementing an Effective Parts Process: Process and Procedure Made Simple	Scott Simmons Kent Bullard	1:30pm – 3:30pm
Advanced Diagnostic Strategies – Tools and Equipment – Driveability	G Truglia	1:30pm – 6:00pm
Diagnosing PWM Circuits and Drivers	Gary Smith	1:30pm – 6:00pm
Improving your Road-Test procedure Fuel Trim Diagnostics	Jim Wilson	1:30pm – 6:00pm
Transability Meets Driveability	Wayne Colonna	1:30pm – 6:00pm

SUNDAY, December 5

	INSTRUCTOR	TIME (PST)
MORNING		
Advanced Fundamentals of Hybrid and Electric Vehicle Technology	Issac Rodell	7:00am – 11:30am
Enhanced Air/Fuel Diagnostics	Curt Eigenberger	7:00am – 11:30am
Light Duty Diesel: Exhaust Aftertreatment Systems	Brent Delfel Andrew Gibson	7:00am – 11:30am
Attracting and Retaining Key Employees to the Collision Industry	Rachel James	9:30am – 11:30am
Superior Service Advising: Mastering the Art of Trust-based Selling	Greg Bunch	9:30am – 11:30am
What I Want from my Job – The Millennial's Perspective	Sara Frazer	9:30am – 11:30am
Yelp Help – The Good, The Bad, The Ugly	Brandon Thomas	9:30am – 11:30am

THURSDAY, December 2, 2021

12:30pm – 2:30pm PST

● **Business by Design: The Business You Want**

Presented by Hunt Demerest, CPA Sponsored by Paar Melis/CTI-WTI

Design the business you've always wanted by the numbers. Really understanding your financials and how to analyze your current numbers Set goals based on the design to achieve the desired result. Move your business forward with financial confidence.

☆ **Car Count is the Pretender ARO is the Real Hero**

Presented by Bryan Stasch, Sponsored by ATI

Average Repair Order is the Real Hero of the most successful shops. Many feel that when they have cars, life is good! They feel that car count solves most problems. Unfortunately, nothing could be further from the truth. Car Count is NOT the biggest driver of Sales and Technician Productivity – ARO is... and I'm going to prove it to you. In this session we will discuss the importance of Average Repair Order by the numbers. How much should yours be? And how to increase it? We will focus on the tools and the processes that turn car count into big sales. Come join Bryan Stasch with ATI on how to focus on the real hero of increased profitability.

◆ **Front of the House Technologies**

Presented by Chris /Cloutier and Craig O'Neill, Sponsored by Autotextme.com

Explore technologies that make a difference in your day-to-day operations that will help push your shop forward. Touch + Technology = Trust

● **State of the Collision Industry**

Presented by Mike Anderson, Sponsored by Collision Advise

Learn the latest trends in the Collision Repair Industry!

Mike Anderson of Collision Advice provides collision repair centers with the latest industry-related statistics in this seminar. The seminar looks at industry trends, OEM trends, the latest insurance happenings and other association news from across the country. The seminar also looks at legislation updates on laws and pending court cases that could impact your business.

In addition, we'll discuss:

- How many shops per state
- Average labor hours per state
- Cycle time metrics per state
- OEM certifications and trends
- Software utilization KPIs
- The average repairable severity by state
- Parts usage statistics
- Legislative updates
- Employment trends
- And much much more

12:30pm – 2:30pm PST | Break | 3:00pm – 5:00pm PST

● **Chrysler Communication and Security**

Presented by Bill Weaver, Sponsored by NAPA Autotech

Chrysler communication systems have changed significantly over the last few years. Specific diagnostic strategies, information and even equipment are needed to effectively service them. Recommended for level A and B Diagnosticians • STAR connectors • Security Gateway Modules • BUS types • Factory Diagnostic subscription requirements • Network topography • Equipment needs • Communication architecture • BUS voltages and pattern diagnostics.

- What actions need to be taken to have your equipment work with Chrysler?
- How do you register for full access to 2018 and later security gateway and modular equipped vehicles?
- What are the voltage differences on the Chrysler BUS systems?
- What are the multiple subscription requirements?
- Is your shop equipped to access the security of today's network protected vehicles?

THURSDAY, December 2, continued...

● **Essential Diagnostic Steps for Drivability & Electrical Issues**

Presented by Eric Ziegler

This is a critical thinking or logical approach class to address many of the issues that face techs every day; working on systems that are new to them or that they have little or no experience diagnosing. The course is a mix of critical thinking, theory, diagnostic testing methods, tooling and real-world case studies. Four areas will be addressed: mechanical testing, fuel trim diagnostics, ignition testing and network communication issues. Graphing scan data, archiving data and other useful diagnostic software will be discussed. Lots of real world, not so forward case studies will be used to illustrate these processes and techniques.

- See how you can diagnose each type of problem with basic tools and high-tech tools.
- Learn how to figure out what to do next in your diagnostic process.
- See what your results should be and where to go next.
- See a quick review of the "Flatrater" test drive and how to gather information.

● **Fuel Trim Diagnostics**

Presented by John Thorton, Sponsored by CTI-WTI

Almost every drivability diagnostic requires the use of fuel trims. Interpreting fuel trim values is a critical skill for modern day technicians. The instructor will demonstrate, via cases studies, how to interpret and how to use fuel trims when diagnosing drivability concerns. Case studies will cover lean injectors, MAF sensor errors, rear O2 sensor usage and much more!

● **Testing Components with Snap-on Guided Component Tests**

Presented by Jason Gabrenas, Sponsored by Snap-on

Component Test Meter. Jason will also cover Adding Channels, Understanding measurements, Trigger and Slope.

FRIDAY, December 3, 2021

7:00am – 9:00am PST

● **Driving A New Performance Standard In Collision Repair**

Dave Flockhart, Sponsored by BeTag

The work mix in body shops has been steadily changing and outer panel repairs now account for more than 60% of the total. At the same time, significant advances in outer panel repair methods present a major opportunity for progressively minded repairers to embrace new ways of working to improve performance & create a competitive advantage. This training seminar focuses on practical ways to develop less experienced technicians into highly productive outer panel repair specialists - to Increase proficiency, productivity, profitability & repair quality.

● **Electric Vehicles – What you need to know and how to prepare your shop and your team**

Presented by Bud Center, Dirk Fuchs and Jeff Poole, Sponsored by I-CAR.

The I-CAR technical team including Bud Center, Dirk Fuchs and Jeff Poole will broadcast live from the Tech Center in Appleton WI. This team will take a close look at Electric Vehicle Technology and the industry developed best practice for disconnecting and re-connecting high voltage vehicles. The event will include discussions from the I-CAR Repairer's Realm anchor desk and actual live demonstrations from the I-CAR Tech Center shop. After completing this training, the participant will be able to:

- Discuss components of high voltage system
- Describe the industry-developed best practice for disconnecting/reconnecting high voltage systems.
- Identify proper PPE and tooling for high voltage repairs.
- Understand the importance of electrical bonding
- Describe how to perform an insulation test

7:00am – 9:00am | Break | 9:30am – 11:30am PST

● **Domestic Charging Systems and Power Management**

Presented by Kevin Leiby and Kevin Roberts, Sponsored by CTI-WIT

Are you replacing the alternator unnecessarily? When faced with an illuminated BAT, GEN or ALT light that's on what do we do on a late model vehicle equipped with a computer-controlled charging system? The connected development of next-generation electrical and electronic architectures (EEA's) has led to a whole new level of balance between modern batteries and the charging systems that support the vehicles electrical needs. The modern charging system is designed to maximize the effectiveness of the generator, manage loads, improve battery state of health and life, send diagnostic messages to alert the driver, and minimize the systems impact on fuel economy. This course will cover:

- Electrical power management designs
- Regulated voltage control for ignition off and on demand
- Battery state of charge, health and function
- Alternator pulley diagnosis overrunning alternator pulley (OAP) and decoupler (OAD)
- Charge indicator message interpretation
- Modes of charging system operation

● **Intake Airflow Technologies**

Presented by Scott Townsend, Sponsored by NAPA Autotech

In the search for lower emissions and better fuel economy, manufacturers have had to be creative. OEMs now control and monitor air flow in various ways. The skills learned in this class will help the student diagnose these systems more efficiently, speeding up diagnostic time frames. This increases profitability for both shops and technicians. Recommended for Shop Owners, Service Advisors and all levels of Technicians

- Overview of modern air flow technologies
- Review forced induction
- Multiple length intake runners
- Discuss adaptive throttle strategies
- Cover theory, design and diagnostic drivability concerns

● **Scopes for Diagnostics**

Scott Manna, Sponsored by CTI-WTI

This class will cover the use of advanced lab scope diagnostic techniques to help the technician improve their diagnostic batting average. Using actual vehicle problems this class will show how using multi-trace scopes and scope accessories such as current probes and pressure transducers will allow detailed testing strategies to be incorporated in your diagnostic process. Case studies using Pico, Snap-on and ATS scopes will be shown. This is not a basic lab scope class so some knowledge of basic scope usage is required. Scan tools are great at codes and data but only a scope can SHOW you the real fault.

● **Vibration Correction Diagnosis**

Gary Machiros, Sponsored by WTI

Isolation the root cause of vehicle vibrations can be difficult. Vibrations have a specific frequency that can isolate a vibration to a component group being one of the following: tire/wheel, driveline and engine. The latest vibration diagnostic equipment available will be shown in class to determine the frequency and amplitude (strength) of a vibration. Pico scope vibration analyzer, NVH for smart phone App., IVA vibration analyzer and a simple but effective spirometer. Proper road test techniques will be presented in class to help isolate a problematic vibration. Case studies will be used in class to support a vibration diagnostic process. Pinpoint testing techniques will be demonstrated in class to find the root cause of a vibration. Information covered in class:

- Learn how order of vibration is important during vibration diagnosis
- Learn how vibration transfer paths and component receivers can affect vibration faults.
- Tire /wheel vibration order that can help determine if vibration is tire/wheel, axle, brake drum or brake rotor
- Driveline vibration order to determine which component of driveline is causing the vibration
- Understanding order of engine vibration to help determine if a vibration is crankshaft, torque converter, camshaft, or an accessory pulley.
- Wheel balancing
- Road force variation
- Wheel runout testing
- Hub runout testing

FRIDAY, December 3, continued...

● **New 3-Phase BLDC (Brushless DC) Fuel Pumps**

Presented by Dave Hobbs, Sponsored by Dorman Products

What are BLDCs? Some Kind of Sandwich? These new 3-phase BLDC (Brushless DC) fuel pumps are popping up in everything from late model GDI GM and Toyotas to some older Porsche, VW and Audi models. They're very strange and guaranteed to eat the techs' lunches if they don't get some training. Even the 2019 and later Duramax engines use them for in tank lift pumps. Lots of HVAC BLDC applications but the motor controllers are always built on to the motors so no need to know anything beyond power, ground, and data. Not the case with BLDC fuel pumps. Some transmissions use 12-volt BLDCs to run pumps and apply parking pawls, but I haven't heard of them failing much. Thanks to tank contamination, fuel pumps fail a lot!

9:30am – 11:30am PST

★ **7 Habits of Successful Service Advisors**

Presented by Bill Haas, Sponsored by Hass Consulting

There are no secrets to what makes a person successful in their career. A career as a service consultant does not have to be frustrating or unrewarding. Learn the seven habits identified by Stephen Covey. Implement the seven habits and you are assured a rewarding career to be celebrated.

The seven habits will help you:

- Define your top priorities and achieve the results you want
- Be more productive
- Eliminate behavior that distracts and defeats you
- Develop strong relationships based on mutual trust
- Prepare to deal with difficult situations

◆ **Branding Brings in the Bucks**

Presented by Danny Sanchez, Sponsored by Autoshop Solutions

The best brands in any industry get paid a premium because they are the most trusted brand- your shop is no different! Want to charge a premium and have your customers gladly pay extra?! Don't miss this class! Your brand is far more than your logo, it's the entire customer experience. Stop competing on just price or warranty and build a brand that drives new customers in your bays. Danny Sanchez, former shop owner and AMI accredited instructor will outline the many moving parts of a powerful brand and how to make the best use of it. Marketing, telephone procedures, sales processes, customer service, and ways to leverage your brand with inexpensive tools.

★ **Presenting & Selling Diagnostics with Value**

Presented by Dave Schedin, Sponsored by The CompuTrek Group

Mechanical, Owners, Managers, Advisors, Technicians

This SEMINAR will EMPOWER your Service Advisors by demonstrating "HOW TO" create profitable diagnostics AND reduce the number of phone calls per job on average – by 3+ calls! PLUS – teach you HOW TO GET PAID for the diagnostics you're doing but NOT getting paid for! VALUABLE TOOLS YOUR ADVISORS WILL LEARN

- A toolbox of effective vocabulary every Advisor needs to present and sell diagnostics properly and profitably.
- Relational Selling Techniques – selling VALUE rather than price.
- How to BUILD, PRICE, PRESENT and SELL a VERY PROFITABLE Diagnostic Repair Order.
- How to use VALUE words to create significant increase.
- The COMPUTREK 3-PART VALUE PRESENTATION SYSTEM is designed to yield an average 3.5 – 4.0+ repair order.
- Most Advisors who implement and use the CompuTrek Value Presentation System earns back the seminar fees the first week and many, the first day!! These basics will jumpstart new VICTORIES and help move your company forward.



LIVE VIRTUAL EXPO

Friday & Saturday, 11:30am – 1:30pm PST

Connect, share ideas, meet trainers, sponsors and vendors,
and explore industry trends and topics.

FRIDAY, December 3, continued...

● **Refinish Area Optimization – How to Maximize Throughput and Profit in Your Paint Department**

Robb Power, Sponsored by PPG

Advancements in automotive refinish products and the equipment available today positions collision centers for exceptional Refinishing Area Optimization. However, even with the exceptional refinish products and the best equipment available, throughput poses some unique challenges for today's collision repair centers. This 90-minute session will take an in-depth look into the key areas that influence paint shop profitability in a negative way. We then look at the practical solutions used by progressive collision centers to improve throughput performance and enable vehicles to flow smoothly through the production process. Participants will learn these foundational principles and how to address the key contributing factors that drain production efficiencies and squash profits in our Refinish areas.

● **Using Labor Intensive & Diagnostic Labor Rates**

Presented by Vin Waterhouse, Sponsored by Dorman Products

Better vehicle quality means many shops enjoy less profit per vehicle. We sell less parts per driven mile and parts last longer than on vehicles of the past. There was a time when vehicles reached 100,000 miles they were scrapped. Today, it is not uncommon to work on vehicles with 200,000 miles plus. Research shows Internal combustion engine vehicles (ICE) have 28-30,000 parts counting every nut, bolt, rivet etc. The average electric vehicle (EV) has about 7-10,000 parts. As our industry morphs toward electric vehicles shops could sell 2/3rds less parts per vehicle. Shop expenses continue to rise so the time to act is now. Carpenters, electricians, plumbers, accountants and attorneys don't sell any parts; they make all their profit in labor alone and so can you. With formula-based labor rates you can sell your parts at cost and make your full average combined gross profit per billed hour. Many have increased their profit by \$3-\$4,000 per month using Labor Intensive and Diagnostic labor Rates.

11:30am – 1:30pm PST

LIVE VIRTUAL EXPO

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1:30pm – 3:30pm PST

★ **Becoming Great on the Phone**

Presented by Cecil Bullard, Sponsored by CTI-WTI

Customers decide whether or not they will do business with you in 4.5 seconds. How we answer the phone and how we engage the customer is essential to our overall success. Become really great on the phone and convert more potential customers to actual advocates for our business using proven techniques used by the best service advisors in the country. In this class we will training on:

- Answering the phone with excitement, enthusiasm and interest
- Building in value to overcoming objections
- When to let the tire-kickers go and how to do it
- Closing on the phone and getting the Appointment

Recently, I have had the opportunity of listening to hundreds of phone calls. In way too many, the Service Advisor was either too eager or not engaged. Many failed to get the potential client excited about making an appointment. In more than half of the calls no one even asked the potential client to make an appointment. And, in many calls the Service Advisor continued to engage after the potential client asked for the appointment, sometimes turning an appointment into a lost opportunity. So, I decided to put together this class to really help students understand what they need to do, give examples of good techniques and bad techniques, and help improve your skills to book more appointments.

● **Enhancing the Customer Experience**

Presented by Barry Rinehart, Sponsored by PPG

Why do some customers become fans for life? Is it just luck or do some businesses know the formula for turning a customer interaction into a remarkable experience? How do businesses like grocery stores, coffee shops, tire shops and other retailers turn common shopping experiences into legions of customers singing their praises on the internet and social media? They know how to connect. They understand how to delight at every turn. Their business strategies are centered on customer experience. This is not happy talk for these organizations, they invest time and money to obtain these results. They understand contact points, satisfaction is invisible, and they have learned to delight their customers. They understand that different age groups have different expectations and how to exceed those expectations repeatedly. This one-hour virtual learning session will reveal the core concepts that legends in customer service have used successfully to breed unwavering loyalty from people who love to talk about their purchasing experiences. If you are looking to up your game and really move the needle on CSI this session will help lay the groundwork.

◆ **Google My Business, Search Map Listings – The best way to generate new business from online marketing**

Presented by Dan Vance, Sponsored by CTI-WTI

- Learn why maps is making millions for businesses.
- How Google Maps can be your website in search engine results
- How reviews are more than just an advertisement
- 3 tips to improve your search rankings today!

● **Tax Strategies for 2022**

Presented by Eric Joern, CPA, Sponsored by James Hamlin & Co

This class will be an overview of tax strategies directed to shop owners, which will include the following:

- Review any changes to tax laws in effect for 2022
- Review any post-election tax law forecasts
- Discuss frequency and timing of tax planning

1:30pm – 3:30pm | Break | 4:00pm – 6:00pm PST

● **Ford Powerstroke**

Presented by Tom Ryak, Sponsored by AVI

This program presented by Tom Ryak will cover 6.7 emission systems and diagnostics from fuel testing through no start. Some of the topics covered will be: Low pressure fuel system concerns, High pressure fuel diagnostics, SCR systems, DPF systems and no start causes. 6.7 Powerstroke is now on GEN 3 versions and much has changed. This class will be a good start on servicing these systems. The information needed to service these systems has increase 3-fold. We will cover as much as we can in the time we have. Please join us for a great training experience.

● **The Pressure is On II**

Presented by Bernie Thompson, Sponsored by CTI-WTI

This updated introduction to pressure transducer use including; transducer setup, operation, scope setup, and pressure waveform analysis. The techniques in this class can be applied to any scope and transducer combination. Bernie will use case studies to demonstrate pressure transducer data analysis as it relates to engine operation. Become an expert on Exhaust Pressure Transducers and Scope set up. Make P0300-Random Misfire Codes fast and easy to identify cylinders and to diagnose. Know when a P0300-Random Misfire Code is not a misfire. Understanding In-Cylinder Running Compression waveform analysis. Quickly identify restricted exhaust thru the spark plug hole. Learn to diagnose and identify camshaft timing and phasing issues and How to diagnose valve sealing problems, including intermittent issues such as broken valve springs. Discover how to identify piston and ring sealing problems and locate ignition timing problems thru the spark plug pressure transducer.

FRIDAY, December 3, continued...

● **Thermal Imaging for Diagnostics**

Todd Doty and Tom Smith, Sponsored by CTI-WTI

Thermal imaging is fast becoming a rapid, non-intrusive way to gather analytic data quickly. Thermal cameras are becoming widely available but correct operation that gives accurate results involves much more than point and shoot. Learn the benefits and the pitfalls of this technique.

Topics include:

- Advantages of using Thermal Imaging for diagnosis
- Understand the differences in Thermal Cameras
- Know the limitations of Thermal Cameras
- Explore documented uses of Thermal Imaging for diagnosis on real use cases

● **Turbo Charger Operation and Diagnostics**

Tanner Brandt, Sponsored by CTI-WTI

Dive deep into the inner workings of turbochargers. Accurate diagnostics and proper maintenance are critical to our repair success.

- Turbocharger Designs and Operation
- Turbocharger Components:
 - Exhaust and Compressor Turbine Technology
 - Recirculating Valves
 - Wastegate Actuator variations (Pressure, Vacuum and Electrical)
- Common Problems – symptoms, diagnostics and failure analysis
- Oil Consumption – The 4 failures not caused by turbo failure
- Positive Pressure Crankcase Ventilation (PCV) Systems – symptoms, failures, and diagnostics
- Diagnosing Turbo Driveability Problems
- High-Pressure Leak Testing – tools and techniques
- Maintenance Practices – need to know information
- Best Installation Procedures

● **Vehicle Technology Service Update on Advanced Vehicle Platforms**

Presented by Scott Brown Sponsored by Diagnostic Network/OPUS

This session will cover technologies supporting Advanced Driver Assistance, Vehicle Data Access, Toyota Motor Corporation Vehicle Control History, Resources for Service Information, 3rd Party Driver Assistance Hardware, Tesla and more.

SATURDAY, December 4, 2021

7:00am – 9:00am PST

☆ **Do your clients see your business as an expense or investment?**

Mark Bortle, Sponsored by ATI

Value inside and out of our businesses are often seen as an “expense”, something we don’t want to buy. It is up to us, the advisors, managers, technicians, to make the experience not only memorable, but worthwhile, or in other words, VALUEABLE.

● **Evolution of Vehicle Construction Materials & the Impact on Collision Repairs**

Jason Bartanen, Sponsored by Collision Hub

Dual-Phase, TRIP, TWIP, and even boron steel...all terms that were once brand new to us not that long ago, but now are commonplace for vehicle construction. Add to that aluminum, magnesium, carbon fiber, and other composites, and we’ve got a collision repair world that looks nothing like it did just a few years ago. The rules have change, beginning with damage analysis and throughout the repair process. This presentation will explore this evolution, its impact on the collision repair industry, and where material use might be headed next.

SATURDAY, December 4, continued...

● **Positioning Your Shop to Service Electric Vehicles**

Carolyn Coquette Sponsored by **Shop-Ware**

EVs are coming out of warranty with more and more OE commitments to all-electric lineups in the near future. How will your customers and business adapt? What will you need to make the transition? Where should you invest in equipment, training, and brand, to welcome the cars into your service bays? Join Carolyn Coquette, owner of Luscious Garage in San Francisco, for hybrid and electric failure patterns, service opportunities, business metrics, marketing strategies and more. Learn about her journey creating a hybrid repair category since 2007 and her recent pivot into an all-electric service mix, including attracting talent and other inroads with Tesla. There's plenty of money to be made: position your business to get it!

7:00am – 9:00am | Break | 9:30am – 11:30am PST

● **Diagnosing Network and Communication Issues Effectively**

Scott Shotton

Module communication networks have been around for quite some time. With the ever growing number of computers built into vehicles now days it is critical to understand and diagnose issues with these computer networks. Network problems range from simple to complex. Individual systems may shut down, vehicles may not start or a vehicle may even fail a state emissions inspection with no other customer complaints. This course will cover some networking theory, communication protocols and lots of diagnostics illustrated with actual broken car case studies. A diagnostic plan of attack will be used to address networking issues. Emphasis will be placed on the "Need-to-Know" aspects of multiplexing.

- Understand the basics of computer to computer networks
- Explore proven techniques to diagnose communication issues
- Leave with a solid plan of how to attack your next communication issue

● **GM Infotainment and MOST Systems**

Ken Zanders, Sponsored by **CTI-WTI**

This course covers the operation, characteristics and diagnostics of the Next Generation Infotainment system. This course also covers diagnostics of the GM MOST network. The GM MOST ring break, fault reporting procedure as well as programming and configuration will be presented in detail. There will be a series of exercises to aid in the understanding of these all-important systems. This is a must attend course for the serious "serial communications protocol" expert.

● **Hybrid and EV High Voltage Systems**

Peter Sarantidis, Sponsored by **NAPA Autotech**

Developed to educate the technician about the operation and function of the major components of HEVs and EVs. It will introduce them to the special safety concerns associated with these vehicles. You will be able to properly identify high voltage circuits, the high voltage service disconnect and how to safely power down the high voltage system. In addition, the technician will be able to perform multiple diagnoses and isolation fault testing. Recommended for all levels of Technicians.

- Thorough review of all safety procedures
- Components and operation
- Discuss HV battery testing
- Explore isolation fault testing



LIVE VIRTUAL EXPO

Friday & Saturday, 11:30am – 1:30pm PST

Connect, share ideas, meet trainers, sponsors and vendors, and explore industry trends and topics.

SATURDAY, December 4, continued...

● **Hot Heads 2; Advanced Cooling System Service and Diagnosis**

Donny Seyfer, Sponsored by GATES

The cooling system has evolved rapidly in the last few years. Many of the techniques that have served us well are no longer relevant with modern cooling systems. Finding the root cause of component failures is critical to making good money and avoiding repeat failures. In most cases shops are leaving considerable money on the table by not offering to perform critical services when they are absolutely needed. We will show you how to prove that what you are recommending is not only necessary it will save your customers money.

Donny Seyfer worked in partnership with Gates Rubber Company and others to bring cooling system service techniques up to meet the new systems. You won't look at cooling systems the same again. Donny has presented this class over 20 times (sometimes more than once to the same group) including at the Mobile Air Conditioning Society Conference in 2013. Learn how the components in the cooling system have evolved and what their weaknesses are. Can you diagnose a Ford 3 circuit cooling system with two thermostats? What are the must knows about BMW's electric water pumps?

Learn about coolant chemistry and why coolants should not be mixed or substituted from data created by Amalgatech the only ISO certified coolant testing company in the world.

Using case studies we will learn how to diagnose the toughest cooling system problems from the overheating, flow related issues, repeat water pump and heater core failures, coolant chemistry related issues.

This content of this program is advanced enough for journeymen/master techs but appropriate for service advisors and techs at any level.

● **The Marriage of Scan Tool Data and Automotive Lab Scopes**

Adam Robertson and Cliff Shenke, Sponsored by CTI-WTI

"All scan tools are liars" well, that is until we prove that they are telling the truth. There is no doubt that scan tools and the data acquired with them is crucial to our diagnostic procedures. There is certainly no question that the refresh rates/data transfer speeds and graphing capabilities have come a long way from the beginnings back in the 80's. We must realize however, that any data retrieved with our scan tools is "processed" data that was originally interpreted/calculated from raw sensor values. It is also true that any outputs from the computer including codes, will be based off those data's. This is the reason that any "questionable" data/codes received from the computer should be verified via measuring the "raw" unprocessed information. Enter the automotive lab scope, the equipment that will allow us to verify true "raw" data values including inputs and outputs. This "verification" will allow us to determine the accuracy of the computer's decisions. The modern automotive lab scope, software and available diagnostic attachments/probes will allow for a variety of measurement choices. These choices include all electrical system testing abilities and an incredible variety of mechanical verifications. In this class I will demonstrate with several case studies and logical diagnostic approaches how there truly is a "perfect marriage between the scan tool and automotive lab scope". This class is well suited for the technician and management teams.

9:30am – 11:30am PST

● ♦ **7 Ways to Dominate the Competition**

David Luehr, Sponsored by Elite Body Shop Solutions

Small business thought leader Dave Luehr believes local businesses have many underutilized opportunities. Luehr is an author, business coach, and international speaker whose mission is to provide inspirational education for automotive business leaders through his companies, Elite Body Shop Solutions and The Limitless Entrepreneur. During *7 Ways to Dominate the Competition*, you will learn 7 key factors that will allow nearly any small business to succeed despite seemingly impossible odds. What you will learn:

1. The mindset of the best small business leaders.
2. How to differentiate your business from the crowd.
3. Why the customer experience has never been more important.
4. Modern marketing & social media tips.
5. Building and retaining the best team.
6. Building a process driven business.
7. The power of peer groups.

SATURDAY, December 4, *continued...*

◆ **Attracting Technicians Through Marketing**

Kim & Brian Walker, Sponsored by CTI-WTI

There's a crisis in our industry. A shortage of technicians. It's no secret. The good techs are already working. For you to fill your empty bay with mechanics that are great (A) or ones who need mentoring and training (C level), you must attract the new talent with your marketing. What is your message? You cannot do the same thing you've always been doing. In this class, we will help you recruit and attract great technicians.

- Your messaging. What to say and how to say it.
- Where to say it. Placement matters.
- Paying to put your message where it will be seen.
- Measuring your marketing message.
- Graphics + the right image.
- Shop image + team testimonials.
- And, more!

★ **Radical Transparency – Selling with Absolute Clarity**

Clint White, Sponsored by Coaching with Integrity

For far too long, the automotive service industry has been associated with deception, dishonesty, and overly-expensive or unneeded repairs. For the overwhelming majority of shops, this stigma is outdated and unwarranted yet many of our customers still arrive guarded and distrusting making the sales process difficult and unproductive. Too many vehicles are leaving our shops only partially repaired which leads to poor performance, premature failures, and more expensive repairs down the road which ultimately tarnishes the reputation we have fought so hard to establish. So, if you are ready to implement change with a well-defined and proven sales process that removes the veil of secrecy and the stigma of deception from automotive repair, building trust with your customers, increasing sales, resulting in more cars leaving your shop 100% safe, healthy and reliable, this class is for you.

11:30am – 1:30pm PST

LIVE VIRTUAL EXPO

Visit the PAVE Virtual Expo to chat with the trainers, sponsors and vendors. This is your opportunity to preview the latest tools, equipment, technologies and supplies, and network with industry professionals.

1:30pm – 3:30pm PST

◆ **Celebrate Communication and Reviews!**

Presented by Jimmy Lea, Sponsored by Kukui Corporation

The Advice of a trusted source has now been replaced by the opinion of the masses. Reviews are a trusted source for others to determine what kind of experience they will receive at your shop. Learn how you can use your reviews to increase your credibility, car count, and Google Ranking. Customers have voted and their preferred method of communication is texting. Learn how to optimize these 5 different and powerful texting methods bringing your customers back time and time again. This is a powerful 2-hour Deep Dive into How Reviews are not only the new word of mouth marketing, but it is also a key to increase your Google Ranking. Customers have also demonstrated that texting is preferred to speaking on the phone. We will Deep Dive into the Best Practices for best communication as well as how to protect your shop from a Multimillion-dollar lawsuit.

★ **Confident Selling**

Maylan Newton, Sponsored by ESI

What's the difference between a Service Writer selling 50% and one that sells 90% of their attempted sales? In short, Confidence! Confident selling is the key to most GREAT sales individuals. Join Team ESI for a class in Confidence selling, the Techniques, the Attitude and the results you should expect.

● **Creating and Implementing an Effective Parts Process**

Scott Simmons, Sponsored by Scott Simmons

Do you have challenges in your organization's parts process? Have you really identified where your challenge lies? Would you like to learn how some of the best of the best have created processes that help to minimizing the challenges created by the complexity of today's vehicles and supply chain issues?

During this presentation we will drill into the ways in which you can begin to achieve a "defect free" process of identifying the needed parts for each repair, eliminating delays in the procurement from vendors, and how to implement the improvements you identify. Successful parts procurement is not just a great parts person, it is a process that begins with the front office, involves the technician, the writer, the parts professional, and the OEM vendors. All working as a team, accountable to each other for all to be successful creating an accurate, detailed, final bill at the time of disassembly. Access to Technology, OEM repair procedures, Diagnostic Tools, and a very good understanding of the concept of "You don't know what you don't know" leads to a successful parts process and final bill. We will cover not only the parts specific implementation steps but will also show you the tools for a successful execution of any improvements you may be implementing right now in your organization. With input provided from shops across the country, coast to coast and border to border, some parts challenges cannot be prevented at the facility level, but most can be. A common underlying fact is that there is not a parts problem in most of our repairs: There is an ordering parts at the wrong time problem.

● **Process and Procedure Made Simple**

Kent Bullard, Sponsored by CTI-WTI

Developing processes and procedures are time consuming, complicated and tedious. I bet you've already written off the idea, or maybe you've had a few false starts. You know how critical this is to your business's future. Now's the time to take the plunge. This course is a guided exercise on establishing a healthy and effective process... for process! We'll walk through the key points of process development, navigate each milestone required, outline quality control standards and help you to walk away with a winning PLAN. No need to dread process development! We'll make it happen and we'll make it fun.

- Develop Effective Procedures Simply
- Implement Without Kickback
- Why Quality Control and Upkeep are critical
- Put Your Shop on Autopilot

1:30pm – 3:30pm | Break | 4:00pm – 6:00pm PST

● **Advanced Diagnostic Strategies – Tools and Equipment – Driveability**

G Truglia, Sponsored by TST Seminars

- Relative Compression
- Diagnostic Techniques & Equipment
- 5-Gas Analysis
- Scan Tool
- Data Analysis
- Pressure Transducer
- Testing
- Electrical Diagnostic Testing & more

● **Diagnosing PWM Circuits and Drivers: Pulse Width Modulation for Power, Motor Control and Sensing Circuits**

Gary Smith, Sponsored by CTI-WTI

This is NOT a Hybrid/EV class! In this web class, we will discuss Pulse Width Modulation (PWM) theory and specifically how it applies to various BMW automotive systems. The web class will flow theory to scanner and scope analysis during diagnosis of several recent case studies.

- What is Pulse Width Modulation and How Does It Work? Concepts and Theory
- Understand the differences in use and applications of PWM in power, control and sensing circuits in BMW vehicle platforms.
- Brief explanation of PWM motor encoding for sensing and motor control applications.
- Introduction to BMW Valvetronic Motor and DME Driver Analysis, 3-phase Motors
- Introduction to 3-Phase AC/DC (Non-ground) Fuel Pumps and Controls in BMW Vehicles

Who should attend? Anyone seeking a deeper understanding of the concepts of PWM motor control, AC current flow and motor controls from DC drivers. Also, those who seek to understand their scanner and scope data in these systems beyond just viewing the analog signals.

SATURDAY, December 4, continued...

● **Improving your Road-Test procedure Fuel Trim Diagnostics**

Jim Wilson, Sponsored by Autozone

Are you making the best use of your road tests for diagnostics? Join us to discover a procedure that has been proven to work on no-code and code diagnostics to determine the PCM fuel control for driveability issues. This proven four-step procedure, when added to the road-test, will greatly help as your first step in the diagnostic process for engine performance.

Topics covered:

- Fuel Trim Control
- When to use the Enhanced Side of the scan tool or OBD2 side
- Evaluating sensors inputs
- Why use this as a starting point in all diagnostics
- How to use the similar conditions window
- Rear o2 Fuel Trim
- Freeze Frame and Drive Cycles
- Euro Vehicles Multiplicative and Additive Fuel trim

You are already doing road-tests, so why not make the best use of your time?

● **Transability Meets Driveability**

Wayne Colonna, Sponsored by ETE

A four-hour presentation of technical information related to automatic transmissions in passenger cars and medium duty trucks. It will consist of various case studies presented in ATSC's Complaint, Cause and Correction format of transmission malfunctions and perceived malfunctions that in many cases is a driveability concern. Some of these case studies will include in-car transmission repair. Diagnostic tips and tricks will be laced throughout this presentation. Understanding the various CVT and DCT transmissions on the road with information needed for proper diagnostics will also be included in this presentation.

SUNDAY, December 5, 2021

7:00am – 9:00am | Break | 9:30am – 11:30am PST

● **Advanced Fundamentals of Hybrid and Electric Vehicle Technology**

Issac Rodell, Sponsored by CTI-WTI

Class description coming soon

● **Enhanced Air/Fuel Diagnostics**

Curt Eigenberger, Sponsored by NAPA Autotech

Designed to eliminate confusion regarding Oxygen and Air/Fuel Ratio Sensors and lead the technician to more efficient diagnostics. They will learn the role these sensors have in fuel control strategies. Learn to utilize fuel system monitor operation to help identify the root cause of the failure. Recommended for A and B level Technicians.

- Detailed coverage of O2 Sensors vs Air/Fuel sensors
- Proper utilization of 5-gas diagnostics
- Interpretation of scan data, to develop a test plan
- Micro probe testing of AFR Sensors



LIVE VIRTUAL EXPO

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SUNDAY, December 5, continued...

● **Light Duty Diesel: Exhaust Aftertreatment Systems**

Brent Delfel/Andrew Gibson, Sponsored by CTI-WTI

Since 2007, all light duty diesel vehicles sold in the United States are equipped with an exhaust aftertreatment system of some type. Those technologies can include diesel oxidation catalysts, NOx catalysts, diesel particulate filters, selective catalyst reduction using diesel emissions fluids, or any combination of these subsystems. This class will present the operation and design of these complex systems along with techniques for effective diagnosis. Skills and knowledge from this class cannot only be applied to today's pickups and vans, but also diesel equipped cars.

9:30am – 11:30am PST

● **Attracting and Retaining Key Employees to the Collision Industry**

Rachel James, Sponsored by Rachel James

When you picture yourself handing the keys of your shop over one day, who is still there with you? Do they know you see them that way? Do you invest in them in a way that reinforces that vision? Come learn about the ways in which collision shops can retain their employees thru the use of group benefits and customized carve out plans for key employees.

Review of Qualified Benefits:

- Retirement Plans: 401k, 403B, SEP IRA, Simple IRA, Annuities/Pensions
- Health Care
- Group Life and Disability

Non- Qualified Deferred Compensation (Golden Handcuffs):

- Executive Bonus Plans
- Supplemental Executive Retirement Plans
- ESOPS/Profit Sharing

✦ **Superior Service Advising: Mastering the Art of Trust-based Selling**

Greg Bunch, Sponsored by Advance Professional

- Differentiate yourself from your competitors:
- Become the Service Advisor that technicians love
- Master phone and customer service skills of the top 1% of advisors
- Learn how to turn upset customers into raving fans
- Build a herd of "key-droppers" that appreciate and trust you

● **What I Want from my Job – The Millennial's Perspective**

Sara Frazer, Sponsored by Haas Consulting

Sara can speak on behalf of the millennial generation from her experiences in many retail positions and over 8 years in automotive service and repair. In this class, What I Want from my Job – The Millennial's Perspective, Sara will share the challenges many employers face with providing the leadership, communication, interaction and engagement with younger generations. Millennials think and operate differently than previous generations. Learn what you can do to meet their needs and provide an environment for success. It will bring out their best work and keep them with you. Also, learn what turns them off and what employers do to drive them to jump ship from your company. Millennials and the younger generation "Gen Z" have developed their own criteria on who they are willing to work for and work with. To be that company you must recognize and embrace their amazing talent, ability to multi-task and connect with people on a different level. Provide the culture and environment they seek and become the employer of choice.

◆ **Yelp Help – The Good, The Bad, The Ugly**

Brandon Thomas, Sponsored by CTI-WTI

Turn your Yelp page into a marketing powerhouse. We'll pull back the curtain on one of the most popular review sites and reveal Yelp's most guarded practices. Discover how to take control WITHOUT paying. Use your Yelp page to increase your visibility, reputation and leads. Secrets from a former Yelp employee.

- Keyword Optimization – What you don't know can hurt you
- Increasing your ranking and page placement
- Removing negative reviews and improving your reputation
- Managing Yelp salespeople without fear of retaliation