

## 2023 Schedule of Events

### Wednesday, March 1

4:00 PM – 7:00 PM Registration Open

### Thursday, March 2

6:00 AM – 7:00 PM Registration Open  
8:00 AM – 5:00 PM Management & Technical Training  
1:00PM – 4:00 PM NASTF: Meet the Board and Automakers  
4:00 PM – 7:00 PM Hi-Tech Tool Expo

### Friday, March 3

7:00 AM – 8:30 PM Registration Open  
8:00 AM – 9:30 AM Educator Breakfast  
8:00 AM – 5:00 PM Technical & Educator Training  
8:00 AM – 5:15 PM Management Training  
11:30 AM – 1:30 PM Power Summit Management Lunch & Keynote  
5:00 PM – 8:30 PM VISION Expo

*\* Meal functions are open to those purchasing training packages.*

*\*\* Awards Dinner & Comedy Night Party tickets may be purchased individually.  
Attendees registered for a weekend training package or VISION Power Pass may purchase a ticket at a discounted rate.*

### Saturday, March 4

6:00 AM – 6:00 PM Registration Open  
6:30 AM – 7:00 AM Conference Breakfast\*  
7:00 AM – 8:30 AM Opening General Session  
8:45 AM – 11:45 AM Technical Training  
9:00 AM – 12:00 PM Management Training  
9:00 AM – 3:00 PM VISION Expo  
11:30 AM – 1:00 PM Conference Lunch\*  
2:30 PM – 5:30 PM Technical Training  
3:00 PM – 6:00 PM Management Training  
6:00 PM – 7:00 PM Industry Professional's Reception  
7:00 PM – 9:30 PM Awards Dinner & Comedy Night Party\*\*

### Sunday, March 5

7:00 AM – 7:30 AM Nondenominational Prayer Service  
7:00 AM – 10:00 AM Registration Open  
7:30 AM – 8:15 AM Networking Breakfast\*  
8:30 AM – 11:30 AM Technical Training  
8:45 AM – 11:45 AM Management Training

## THURSDAY, MARCH 2, 2023

### Technical Training

Code	Course Title	Begins	Ends	Instructor
T1-ABCD	GSTA - General Service Technician Academy - 2-day course - <b>SOLD OUT!</b>	8:00am	5:00pm	Various
T2-AB	Advanced PICO Scope Functionality <b>Sponsored by CTI/WTI - SOLD OUT!</b>	8:00am	5:00pm	Adam Robertson
T3-AB	Chrysler Drivability & Code Diagnostics <b>Sponsored by DENSO</b>	8:00am	5:00pm	Wally Mouradian
T4-AB	Diagnostics 101 - <b>SOLD OUT!</b>	8:00am	5:00pm	James Wilson
T5-AB	Intermittent Electrical Diagnostics Strategies <b>Sponsored by ATG/Driven by Repairify - SOLD OUT!</b>	8:00am	5:00pm	Rick Kelley
T6-AB	Introduction to Tesla Models S,X,Y, & 3 <b>Sponsored by OPUS IVS / WTI</b>	8:00am	5:00pm	Aaron Jones
T7-AB	Vehicle Communication Systems, Operation and Testing	8:00am	5:00pm	Scott Shotton & Scot Manna
T8-AB	Pressure Waveform Acquisition and Analysis, From the Inside Out	8:00am	5:00pm	Brandon Steckler
T9-A	Developing Better Diagnostic Judgment <b>Sponsored by TopDon - SOLD OUT!</b>	8:00am	12:00pm	Haakan Light
T10-A	J2534 Domestic Programming Update <b>Sponsored by CTI - SOLD OUT!</b>	8:00am	12:00pm	Keith Perkins
T11-A	MASINT: Measurement and Signature Analysis, What's Going on Inside the Box? <b>Sponsored by CTI/WTI</b>	8:00am	12:00pm	Gary Smith
T12-B	Combustion, Carbon and Carnage... Diagnosing Difficult Deposit Related Driveability Concerns <b>Sponsored by CTI/WTI</b>	1:00pm	5:00pm	Gary Smith
T13-B	Introduction to BEV/HEV Services <b>Sponsored by CTI/WTI</b>	1:00pm	5:00pm	Rich Falco
T14-B	J2534 Asian Programming Update <b>Sponsored by CTI</b>	1:00pm	5:00pm	Keith Perkins

### Management Training

Code	Course Title	Begins	Ends	Instructor
M1-AB	Managing a Fun and Successful Business <b>Sponsored by The Institute</b>	8:00am	5:00pm	Cecil Bullard
M2-AB	Motivational Leadership	8:00am	5:00pm	Steve Beck
M3-AB	Service Advisor Workshop: Building Customer Relationships <b>Sponsored by NAPA - SOLD OUT!</b>	8:00am	5:00pm	Paul Marquardt
M4-A	Trust is Your Real Currency <b>Sponsored 180Biz</b>	8:00am	12:00pm	Rick White
M5-A	Building Confidence in Behavioral Interviewing and Creating Your Process & Procedure <b>Sponsored by AutoLeap</b>	8:00am	12:00pm	Chris Cotton
M6-B	Understand Your P&L Statement TODAY! <b>Sponsored by CTI/WTI</b>	1:00pm	5:00pm	Greg Bunch
M7-B	High Impact Service Advisor Sales Course <b>Sponsored by Elite</b>	1:00pm	5:00pm	Tom Amero

**BACK BY POPULAR DEMAND!!** Get the most out of your investment. Attend the exclusive Hi-Tech Tool Expo to provide you additional time with diagnostic and scan tool vendors.

**HI-TECH TOOL EXPO**  
featuring today's top scan tools & diag equip

**Thursday, March 2, 2023 • 4-7pm**  
Convention Center Upper Level

# FRIDAY, MARCH 3, 2023

## Technical Training

Code	Course Title	Begins	Ends	Instructor
T1-ABCD	GSTA- General Service Technician Academy - 2-day course - <b>SOLD OUT!</b>	8:00am	5:00pm	Various
T15-CD	Drivability Best Practices <b>Sponsored by ATG/Driven by Repairify - SOLD OUT!</b>	8:00am	5:00pm	Eric Walker
T16-CD	Hands-On Picoscope (all-day/hands-on) - <b>SOLD OUT!</b>	8:30am	5:00pm	Scott Shotton & Matt Fanslow
T17-CD	Hybrid System Diagnostics <b>Sponsored by ATG/Driven by Repairify - SOLD OUT!</b>	8:00am	5:00pm	Bryan Perrin
T18-CD	Mechanical Engine Specialty Scope Diagnostics (all-day/hands-on) <b>Sponsored by NAPA - SOLD OUT!</b>	8:30am	5:00pm	Jason Gloria
T19-CD	Network Nightmares: Solving the Diagnostic Distress <b>Sponsored by CTI/WTI</b>	8:00am	5:00pm	Gary Smith & Adam Robertson
T20-C	Advanced Application of Fundamental Electrical Theory <b>Sponsored by CTI</b>	8:00am	12:00pm	Keith Perkins
T21-C	BMW 48v Mild Hybrid	8:00am	12:00pm	Justin Morgan
T22-C	Conquering Data Network Issues <b>Sponsored by CTI/WTI</b>	8:00am	12:00pm	Rich Falco
T23-C	Scan Tool Data: What Does It Mean? - <b>SOLD OUT!</b>	8:00am	12:00pm	James Wilson
T24-D	BMW 101 - <b>SOLD OUT!</b>	1:00pm	5:00pm	Justin Morgan
T25-D	Diagnosing Keys & Immobilizer Systems <b>Sponsored by CTI</b>	1:00pm	5:00pm	Keith Perkins
T26-D	Electronic Brake Control Systems <b>Sponsored by Garage Gurus</b>	1:00pm	5:00pm	Gary Kimball
T27-D	Streamlined Approach to Diagnostic Dilemmas	1:00pm	5:00pm	Brandon Steckler

## Heavy Duty Training

Code	Course Title	Begins	Ends	Instructor
HD1-CD	Cummins Case Studies <b>Sponsored by Diesel Laptops</b>	8:00am	5:00pm	Michael Eilbract
HD2-CD	Diesel Aftertreatment Emissions System Training <b>Sponsored by Vander Haag's</b>	8:00am	5:00pm	Jake Alter and Darrell DeBoer

## Educator Think Tank (Train the Trainer)

Code	Course Title	Begins	Ends	Instructor
E1-C1	Educator Breakfast and "How is That Working For You?"	8:00am	9:30am	Tim Dwyer and Jim Morton
E2-C2	High School Breakout Session	9:45am	11:45am	
E2-C3	Post-Secondary Breakout Session	9:45am	11:45am	
E3-C4	Diagnosing by the Numbers: DVOM Application with the Modern Automobile (High School)	1:00pm	2:45pm	James Wilson
E3-C5	Resistance: Taking Megger and Milli out for the First Time (Post-Secondary)	1:00pm	2:45pm	Sam Houston
E4-C6	A Systematic Approach to Teaching OBDII Evaporative Emission Systems	3:00pm	5:00pm	Rick Escalambre
E4-C7	ADAS Hands-On: Mistake-Free Calibrations in the Bay	3:00pm	5:00pm	Pam Oakes

## Management Training

Code	Course Title	Begins	Ends	Instructor
M3-CD	Service Advisor Workshop: Building Customer Relationships <b>Sponsored by NAPA - SOLD OUT!</b>	8:00am	5:15pm	Paul Marquardt
M8-C	Driving Profitability Through the Service Counter <b>Sponsored by Repair Shop of Tomorrow</b>	8:00am	11:30am	Jaron Kleber
M9-C	Executing Successful Acquisitions <b>Sponsored by CTI/WTI</b>	8:00am	11:30am	Greg Bunch & Troy Kaplan
M10-C	Implement Profit First In Your Shop <b>Sponsored by Kaizen CPAs + Advisors</b>	8:00am	11:30am	Eric Joern
M11-C	So You Want To Be in the ADAS / Calibration Business? <b>Sponsored by OPUS IVS / WTI</b>	8:00am	11:30am	Frank Terlep
M12-C	The Care and Feeding of Your Superstar Techs and Advisors <b>Sponsored by Elite</b>	8:00am	11:30am	Darrin Barney
Lunch & Power Summit Keynote ( <i>all management attendees will be automatically reg'd for this session</i> )		11:30am	1:30pm	
M13-D	Advanced Tax & Financial Strategies Your CPA Isn't Telling You <b>Sponsored by Big Life Financial</b>	1:45pm	5:15pm	Derick Van Ness
M14-D	How To Have a Great Day Every Day!	1:45pm	5:15pm	Steve Beck
M15-D	Shop Production and Payroll that Drive Profits <b>Sponsored by AutoLeap</b>	1:45pm	5:15pm	Bill Haas
M16-D	The Apprenticeship Program You Need NOW! <b>Sponsored by CTI/WTI</b>	1:45pm	5:15pm	Greg Bunch
M17-D	Using Google Reviews to Increase Word of Mouth Marketing <b>Sponsored by KUKUI</b>	1:45pm	5:15pm	Jimmy Lea

**VISION EXPO**  
featuring today's top scan tools & diag equip  
60,000 square feet of exhibits!

**Friday 5-8:30pm**  
**Saturday 9am-3pm**

## SATURDAY, MARCH 4, 2023

### Technical Training

Code	Course Title	Begins	Ends	Instructor
T28-E	Advanced Driver Assistance Systems: An Introduction to ADAS and Their Calibration - <b>SOLD OUT!</b>	8:45am	11:45am	Eric Ziegler
T29-E	Air Conditioning Tips & Techniques <b>Sponsored by AutoZone - SOLD OUT!</b>	9:00am	12:00pm	Marc Dufort
T30-E	Assembling the Diagnostic Driveability and Electrical Puzzle Pieces - <b>SOLD OUT!</b>	8:45am	11:45am	Jim Morton
T31-E	Braking System Diagnosis and Repair <b>Sponsored by ACDelco - SOLD OUT!</b>	8:45am	11:45am	Rob Roth
T32-E	Diagnosing Multiplexed Data Bus Networks <b>Sponsored by ACDelco - SOLD OUT!</b>	8:45am	11:45am	Jerry Mungle
T33-E	Essentials to Key Cutting and Programming <b>Sponsored by XToolUSA - SOLD OUT!</b>	8:45am	11:45am	Andrew Sexton & Matt Fanslow
T34-E	Hands-On Lab Scope Component Testing <b>Sponsored by Snap-on Diagnostics - SOLD OUT!</b>	8:45am	11:45am	Jason Gabrenas
T35-E	Import Induction Systems <b>Sponsored by DENSO - SOLD OUT!</b>	9:00am	12:00pm	Kris Lewis
T36-E	Inside or Out? - Transmission Diagnostics for the Drivability Tech <b>Sponsored by ATRA - SOLD OUT!</b>	8:45am	11:45am	Keith Clark
T37-E	'Plug-In Power' Tips: Intro to PHEV & BEV J1772 EVSE <b>Sponsored by Delphi</b>	8:45am	11:45am	Dave Hobbs
T39-E	Understanding and Analyzing a Parallel Circuit (hands-on) <b>Sponsored by ATech Training - SOLD OUT!</b>	8:45am	11:45am	James Wilson
T40-E	Which Scan Tool Should I Buy?	8:45am	11:45am	Scott Shotton, Scot Manna, Justin Morgan, Keith Perkins, Tanner Brandt, Sean Tipping
T41-F	Advanced Diesel Testing Strategies <b>Sponsored by AVI - SOLD OUT!</b>	2:30pm	5:30pm	Tom Rayk
T42-F	Advanced Oscilloscope Engine Testing <b>Sponsored by Garage Gurus</b>	2:30pm	5:30pm	Mark Kenyon
T43-F	Asian Smart Charging Systems <b>Sponsored by NAPA</b>	2:30pm	5:30pm	Jim Lewis
T44-F	Enhanced Fuel Control <b>Sponsored by AutoZone - SOLD OUT!</b>	2:30pm	5:30pm	Marc Dufort
T45-F	Gasoline Direct Injection - Operations and Diagnostics <b>Sponsored by NAPA - SOLD OUT!</b>	2:30pm	5:30pm	Curt Eigenberger
T34-F	Hands-On Lab Scope Component Testing <b>Sponsored by Snap-on Diagnostics - SOLD OUT!</b>	2:30pm	5:30pm	Jason Gabrenas
T46-F	High Speed CAN Communication <b>Sponsored by CTI/WTI - SOLD OUT!</b>	2:30pm	5:30pm	John Thornton
T47-F	Hybrid Vehicle Maintenance Procedures <b>Sponsored by ACDelco</b>	2:30pm	5:30pm	Rob Roth
T48-F	Learn PS7A from Pico! <b>Sponsored by Pico Technology</b>	2:30pm	5:30pm	Randy Dillman
T49-F	TECHTalks	2:30pm	5:30pm	moderated by Matt Fanslow
T39-F	Understanding and Analyzing a Parallel Circuit (hands-on) <b>Sponsored by ATech Training - SOLD OUT!</b>	2:30pm	5:30pm	James Wilson
T50-F	Understanding and Diagnosing Air Conditioning <b>Sponsored by AirSept</b>	2:30pm	5:30pm	Jerry "G" Truglia
T51-F	Intro to HVAC: Cooling System and Refrigerants <b>Sponsored by NAPA</b>	2:30pm	5:30pm	Ryne Thomason

### Heavy Duty Training

Code	Course Title	Begins	Ends	Instructor
HD3-E	Heavy Duty Heating Ventilation & Air Conditioning (HVAC) <b>Sponsored by Vander Haag's</b>	9:00am	12:00pm	Jake Alter and Darrell DeBoer
HD4-E	Cummins 3582 Code Diagnostics <b>Sponsored by Diesel Laptops - SOLD OUT!</b>	9:00am	12:00pm	Michael Eilbracht
HD5-F	Air Disc Brakes <b>Sponsored by Dorman</b>	2:30pm	5:30pm	Swede Oun
T41-F	Advanced Diesel Testing Strategies <b>Sponsored by AVI</b>	2:30pm	5:30pm	Tom Rayk

### Management Training

Code	Course Title	Begins	Ends	Instructor
M18-E	Creating a Better Close Ratio <b>Sponsored by Sales Fix Academy - SOLD OUT!</b>	9:00am	12:00pm	Aaron Stokes
M19-E	Protecting Your Company - Identifying and Preventing Fraud, Embezzlement, and Theft <b>Sponsored by CTI/WTI</b>	9:00am	12:00pm	Hunt Demarest
M20-E	Perfecting Technician Efficiency in a NOT so Perfect World	9:00am	12:00pm	Bryan Stasch
M21-F	7 Keys To Make Selling Fun <b>Sponsored by The Institute</b>	3:00pm	6:00pm	Cecil Bullard
M22-F	Guerrilla Marketing Workshop: How to Have Great Marketing Without Breaking the Bank <b>Sponsored by Turnkey Marketing - SOLD OUT!</b>	3:00pm	6:00pm	Carrie-Lynn Rodenberg
M23-F	Why Only Aiming for 60% GP On Each Ticket Doesn't Make You Profitable <b>Sponsored by Shop Fix Academy - SOLD OUT!</b>	3:00pm	6:00pm	Aaron Stokes

\$45 with  
Weekend or  
Power Pass

#### Awards Dinner & Comedy Night Saturday, March 4, 2023 • 7-9:30pm

Join us for a night of celebration, recognizing individuals achieving excellence, while enjoying a night of laughter!

#### Spouse Program - \$250

Package includes Thursday box lunch and outing, Friday box lunch and outing (choose one of two options), Saturday breakfast and opening general session, Saturday outing and lunch, Saturday Night Industry Reception, and Awards Dinner & Comedy Night.

# SUNDAY, MARCH 5, 2023

## Technical Training

Code	Course Title	Begins	Ends	Instructor
T52-G	ADAS - Need to Know Info for the Calibration Technician	8:30am	11:30am	Mike Reynolds
T53-G	Advanced Alignment Diagnostic Angles <i>Sponsored by CTI/WTI - SOLD OUT!</i>	8:30am	11:30am	John Gillespie
T54-G	Advanced Transmission Fundamentals <i>Sponsored by ATRA</i>	8:30am	11:30am	Dennis Madden
T55-G	Subaru AVCS and Reset of Learning Values	8:30am	11:30am	Leo Gilmore & Pedro De La Torre
T56-G	Critical Thinking - Diagnostic Strategies '2023' <i>Sponsored by Dorman</i>	8:30am	11:30am	Jerry "G" Truglia
T57-G	Deciphering Gas Turbo Driveability <i>Sponsored by NAPA</i>	8:30am	11:30am	Curt Eigenberger
T58-G	EVAP Code Diagnostics <i>Sponsored by AutoZone</i>	8:30am	11:30am	Marc Dufort
T59-G	Hybrid and EV - Batteries and Charging <i>Sponsored by NAPA</i>	8:30am	11:30am	Bill Weaver
T60-G	Misfire Diagnostics	8:30am	11:30am	Eric Ziegler & Scott Shotton
T61-G	Starting and Charging System Diagnosis <i>Sponsored by ACDelco</i>	8:30am	11:30am	Jerry Mungle
T62-G	Systematic Approach to Computerized Engine Controls	8:30am	11:30am	Rick Escalambre
T63-G	Three Phase Motor Testing Strategies <i>Sponsored by AVI</i>	8:30am	11:30am	Vince Manship
T64-G	Tire Pressure Monitoring Systems <i>Sponsored by Schrader</i>	8:30am	11:30am	Tom Kirkham

## Heavy Duty Training

Code	Course Title	Begins	Ends	Instructor
HD6-G	Advanced Braking Systems (HABS) <i>Sponsored by Dorman</i>	8:30am	11:30am	Swede Oun
HD7-G	HD DPF and SCR Systems <i>Sponsored by AVI - SOLD OUT!</i>	8:30am	11:30am	Tom Rayk

## Management Training

Code	Course Title	Begins	Ends	Instructor
M24-G	Finding Cash In Your Numbers <i>Sponsored by Automotive Training Institute</i>	8:45am	11:45am	Bryan Stasch
M25-G	Passion Fuels the Bottom Line <i>Sponsored by 180BIZ</i>	8:45am	11:45am	Rick White
M26-G	Strategies for Dealing with Difficult Customers <i>Sponsored by AutoLeap - SOLD OUT!</i>	8:45am	11:45am	Bill Haas and Sara Fraser

Schedule subject to change. Check website for latest schedule and availability. as of 2/22/2023

## 2023 Registration Package Pricing

**Thursday All-Day Package**  
Thursday Registration, Refreshment Breaks, Lunch, and Expo Registration

Early Bird

Regular

\$230

\$245

**Friday All-Day Package**  
Friday Registration, Refreshment Breaks, Lunch, and Expo Registration

Early Bird

Regular

\$230

\$245

**Weekend Training Package**  
All Management and/or Technical Courses offered Sat. & Sun., Refreshment Breaks, Saturday General Session, Breakfast & Lunch Sunday General Session & Breakfast Expo Registration  
*BONUS...Add Awards Dinner/Comedy Night for only \$45*

Early Bird

Regular

\$415

\$445

**4-Day Power Pass**  
4 days of Management and/or Technical Courses (Thursday, Friday, Saturday and Sunday), Refreshment Breaks, Saturday General Session, Breakfast & Lunch, Sunday General Session & Breakfast, and Expo Registration  
*BONUS...Add Awards Dinner/Comedy Night for only \$45*

Early Bird

Regular

\$725

\$760



**Spouse Program**  
Includes meals and activities

Early Bird

Regular

\$250

\$250

**TRAINING COURSE SELECTION:** Selections must be made in advance and are available on a first-come, first-served basis. Registration for individual courses are not available until February 6, 2023.

**MEALS:** Breakfast is served in conjunction with a general session and keynote address. See package details for meal information.

**INDIVIDUAL MEALS & COURSES:** Individual course registration opens Monday, February 6. The Cost for each 3 or 4 hour session is \$135. Tickets for Saturday breakfast, Saturday lunch, and Sunday breakfast may be purchased for \$30 each before February 15, or \$40 after.

**MWACA Member & Educator Discounts:** MWACA Members registering by Friday, December 30th receive a \$25 discount on Weekend and Power Pass Packages.

**AWARDS DINNER & COMEDY NIGHT:** Weekend Package and Power Pass attendees have the option to add this event to their package for only \$45. Non-package attendees may purchase tickets for \$65 each. Tickets are limited so early registration is encouraged.

**REGISTRATION & PAYMENT:** To register, please complete the online registration form at [www.visionkc.com](http://www.visionkc.com). Registrations must be received no later than Feb. 17, 2023.

Registrations accepted ON-SITE ONLY after Feb. 20, 2023. We cannot guarantee availability for late or on-site registrants. A confirmation letter and detailed conference information will be e-mailed in late-February.

**CANCELLATION AND REFUND POLICY:** Full refunds will be granted, less a \$30 processing fee, if cancellation is received in writing by February 1, 2023. No refunds will be granted after February 1, 2023. Name substitutions will be accepted.

## VISION 2023 - MANAGEMENT COURSE DESCRIPTIONS

### **7 Keys to Make Selling Fun (M21-F) by Cecil Bullard**

Would you like to close more sales while increasing your job satisfaction? For some people selling is a chore when it should be fun. Learn the keys to make selling fun while improving your results. This fast-paced selling class will cover 7 keys to sales success, reducing stress and improving relationships with your clients. Learn: - How to create more value for your clients so that they will say yes more often and appreciate your input - How to become the client's automotive consultant - How to help your clients make the best decisions regarding their vehicle - How your attitude effects your sales success and how to have a better attitude more often - How to make selling fun - And more...

### **Advanced Tax & Financial Strategies Your CPA Isn't Telling You (M13-D) by Derick Van Ness**

The biggest cost to successful shop owners is taxes but it doesn't need to be! The tax code is full of little known strategies that can help business owners MASSIVELY reduce their taxes as much as 50%. Unfortunately, many CPA's are unaware of these strategies and it's costing you BIG TIME! Not any more... In this course you will learn: 3 Simple Tax Strategies ANY Shop Owner Can Implement TODAY Easy Ways to Claim Tax Credits that Apply to 90% of the Auto Shop Industry When to Use Tax Advantaged Insurance, Investment, and Donation Strategies to MASSIVELY Reduce Your Taxes How to Create Tax Free Retirement Income Simple Ways to Proactively Reduce Taxes Each Year in Less than 2 hours per month And much more... You will be able to use these strategies YEAR AFTER YEAR, so this course will likely be worth \$100K or more (in saved taxes) to anyone who attends!

### **Building Confidence In Behavioral Interviewing & Creating Your Process & Procedure (M5-A) by Chris Cotton**

Review your current interview process and discover how to use Behavioral Interviewing. In this class, we will review what core competencies are and which ones YOU NEED! Discover how to put out the word and create an ad that will attract the candidate you are looking for, and determine a timeline to find a candidate. Learn how to conduct an interview. Vacancies can cost your business \$\$\$\$\$. Learn why and how you should always be hiring and set up a process to put the pieces together.

### **Creating a Better Close Ratio (M18-E) by Aaron Stokes**

This powerful class will empower attendees with the confidence and skills needed for a better close ratio in their shops. This will cover why and how you should present the whole ticket to the customer, partnering with your techs for better sales, and other skills that will help build an above-average close ratio.

### **Driving Profitability Through The Service Counter (M8-C) by Jaron Kleber**

In an automotive shop, no single employee has more effect on your profitability than your service advisor/manager. In this seminar, Jaron Kleber, National Sales Manager for Repair Shop Of Tomorrow, will take a deep dive into how to drive higher sales and more importantly higher net profits through the service counter. 1. Systems, Operations, and Procedures - Create a standard system that all employees follow and succeed in. 2. Repair Order Workflow - From drop off, to invoicing and everything in between 3. 300% Rule - Inspection, estimation, and presentation through your DVI 4. Explaining the "why" it matters to the customer - Sharpening your selling skills 5. Driving profits through your SMS - Utilizing SMS to make profitable repair orders

### **Executing Successful Acquisitions (M9-C) by Greg Bunch, Troy Kaplan**

There is no faster way to go grow your immediate income and long-term equity than by making strategic acquisitions. Learn how the best are growing their companies and executing successful acquisitions and building the business of their dreams.

### **Finding Cash In Your Numbers (M24-G) by Bryan Stasch**

In times like these, and times ahead, your business needs to be in the best fiscal health as possible. With the ever-increasing demands on wages, demands on benefits, and the need for training, only the shops in the best shape will be left standing. Time to get IN-SHAPE or get left behind.

### **Guerrilla Marketing Workshop: How to Have Great Marketing Without Breaking the Bank (M22-F) by Carrie-Lynn Rodenberg**

Great marketing doesn't have to cost you thousands of dollars every month! In this interactive workshop, Carrie-Lynn Rodenberg and Joe Flammer from Turnkey Marketing will train you on how to use Facebook, Tik Tok, LinkedIn and your shop's Google Business Profile to do FREE and/or low budget marketing that will increase car count AND help you hire the best technicians. Even if you've never used social media, this workshop is for you! Make sure to bring your phone and/or your laptop because this is more than marketing theory - you will be jumping in and working ON your marketing in this fun workshop!



### **High Impact Service Advisor Sales Course (M7-B) by Tom Amero**

People buy from people, not companies. As a Service Advisor, what you say and HOW you say it has a huge impact on whether or not people move forward with doing business at your shop! In this class, we will help you generate higher profits through increased sales, more repeat business and more referral business. We will talk about how to ethically build relationships with your customers and how you can help them view you as a trusted credible expert. This course will be led by Tom Amero, an Elite Certified Sales Trainer. With over a decade of sales, sales training, and leadership experience, he will help Service Advisors build their confidence and gain the tools they need to create more success. Come to this training and let's get your Advising skills to the next level!

### **How to Have a Great Day Every Day! (M14-D) by Steve Beck**

'How to Have a Great Day Everyday' is about creating and maintaining the following virtues on a daily basis. Compassion, Enthusiasm, Respect, Trust, Patience, & Creativity. Participants discover that their job is not just a job, but in fact a performance on, 'How to be Great Every Day.' The talk gives participants the knowledge that they set the tone for every interaction. We provide the insights, and methods, that will assist them in understanding their ability to make a positive difference on a daily basis in every customer interaction. Participants are given the understanding and tools to change their attitude and mindset so that they can make their day flow smoothly with their customers-both internal and external.

### **Implement Profit First in Your Shop (M10-C) by Eric Joern**

Attendees will gain an understanding of the principals of profit first. This will include the behavioral and psychological aspects, along with the framework of the profit first budgeting system. Upon completion of this course, attendees will be able to calculate their current profit allocation, calculate target allocation percentages, implement an income allocation system, and learn how to get more profit from their shop. Eric Joern is "Profit First" Certified.

### **Managing a Fun and Successful Business (M1-AB) by Cecil Bullard**

This class is a comprehensive class for those that want to improve their management skills and make running their business easier, more enjoyable and more productive. Students will learn the skills necessary to improve performance and get more from their staff while improving their relationships. This class is a workshop that will help owners and managers learn the skills, take them home, and use them successfully to create a positive work environment and a culture of success in their business. We will cover: - Imagining and creating the business you want - How goals and structure can be used to motivate and manage - Building a culture of success - Skills to improve your communication - Bringing the team together - How to create more creative employees - How to make your workplace a fun and successful place to work - And more...

### **Motivational Leadership (M2-AB) by Steve Beck**

This Motivational Leadership session is about having attendees learn how to lead in these uncertain times where everyone is asked to 'do more with less'. They will get essential information and tools to motivate their team for greater effectiveness, efficiency and productivity. Participants discover that their job is not just a job, but in fact a challenge on, 'How to Motivate Their Team to Be Their Best Every Single Day.' A Successful Leader is someone who is respected and whose team would do anything for them because of the trust they have in that person.

### **Passion Fuels the Bottom Line (M25-G) by Rick White**

Do you ever feel like you're just... getting by? Like your business is just surviving, but not thriving? You know you were meant for more than this, but how do you get back to where you were once upon a time—the place where your shop was fun and exciting and challenging, and all of your clients couldn't wait to come in and see what new things you were up to? I'm here to tell you that it's not too late! As a shop owner, it's very common to lose the excitement you use to have for your business and start to flounder. What was once exciting and a challenge can now seem like a chore. Sometimes it's the byproduct of disappointment and struggle. Other times it's because you are hitting your goals but things just don't seem to be changing fast enough or at all. I promise that you can get fired up with your business again and start achieving like never before! In this fast-paced class, you'll learn what causes you to disengage from your shop, see the dangerous ripple effect your disconnect is costing your business and your team, discover the 4 switches you can pull to easily reignite your passion again, and master those strategies to make you the driving force in your business once again. Leave this class confidently on your way to becoming the leader you were always capable of becoming in your business! You'll go back to a recharged team, grateful clients, and a healthy growing bank account! Join me!

### **Protecting Your Company – Identifying and Preventing Fraud, Embezzlement, and Theft (M19-E) by Hunt Demarest**

During this course, Hunt will go over various types of fraud and why it happens, using real-life examples from his client base of over 600 auto repair shops. He explains common areas for fraud, theft, and embezzlement, as well as how to detect and stop future fraud. He will show you how to identify red flags using your shop's financials. You'll also learn processes and procedures to put in place to limit exposure and vulnerability.

### **Service Advisor Workshop: Building Customer Relationships (M3-AB) by Paul Marquardt**

Our goal is to equip a Service Advisor with improved communication skills and techniques to build a more trusting relationship with the shop's customers. - Better phone and customer greeting skills - Sales skills including core selling - Internalize the 6 steps to better sales Service Advisors should be equipped with enough technical information in the following areas to better explain repair and service recommendations to customers. - Preventive Maintenance - Brakes - Steering, Suspension and Alignment - Air Conditioning - Diagnostics Limited to 30 participants.

### **Service Advisor Workshop: Building Customer Relationships (M3-CD) by Paul Marquardt**

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### **Shop Production and Payroll that Drive Profits (M15-D) by Bill Haas**

Many things contribute to your profit or lack of it. Our ability to produce work in a timely manner is the best way to make a store profitable. Lost hours kill profit. Making sure you get past all the obstacles of selling time, using time efficiently, and measuring time are critical to making a profit. Implement a strategy for getting paid for what you do and getting paid for what you know. There is a difference. Once the revenue (all the above) is addressed we will move on to cost. Which is our payroll. Making sure we know who is on the payroll, why they are on the payroll and how they are paid is another driver of profits. Your employee retention strategy is to charge appropriately and then pay more than your competition. Employees will never consider leaving for more money.

### **So You Want to Be in the ADAS / Calibration Business (M11-C) by Frank Terlep**

Hint...it takes more than calibration tools and target! In 2023 there will almost be 100 MILLION ADAS-equipped vehicle on North America's roads and more than 4.2 MILLION of these vehicles will need some type of ADAS services or calibration. In this session attendees will be presented with the opportunities, challenges, sales, marketing and operational requirements to open and operate a successful and profitable ADAS service and calibration business or division. By attending this session attendees will work through 16 different modules beginning with their... - Exiting market position and S.W.O.T - Facility and equipment requirements - The ADAS and Calibration 7 Moments of Truth - ADAS service and calibration workflows - Sales and Marketing SOP's - Service request and scheduling best practices - Recommended documentation - Performance metrics and KPI's - and more...

### **Strategies for Dealing with Difficult Customers (M26-G) by Bill Haas and Sara Fraser**

Ever had a really great, incredible day destroyed by a customer? Yes, you know the one. These situations disrupt business, affect the work environment, and suck all the energy out of you. It is a tough job to be helpful and provide great customer service when a guest is confrontational, unreasonable or over demanding. Let's not overlook the impact on your store's profits. Many times, these situations result in performing work for no pay, refunds or even a lost customer. And don't forget your reputation is at risk. Learn techniques to identify the "difficult" customer early. Discover creative ways to cope with guest's demands and complaints. Gain strategies to resolve complaints quickly — and to everyone's satisfaction. Repair broken relationships with guests that might have been lost forever. Handling the tough customer becomes another one of your strengths. No longer be challenged with difficult customer interactions and enjoy work with less stress and fewer frustrations.

### **Perfecting Technician Efficiency in a NOT so Perfect World (M20-E) by Bryan Stasc**

In times like these, when everyone is short technicians, it is more important than ever to see that your techs are as efficient as possible. Most shops measure productivity, but completely ignore the KEY to getting there, efficiency. In this session, we not only talk about what it looks like, but how to fix it.

### **The Apprenticeship Program You Need NOW! (M16-D) by Greg Bunch**

In this class, Greg Bunch will walk you through setting up an apprenticeship program that works! He gives you tools and a structure that you can adapt to your shop's needs. - How to hire them green and train them to do it the way you want the first time. - How to manage an employee that does not seem to get on the program. - How to make them profitable.

### **The Care and Feeding of Your Superstar Techs and Advisors (M12-C) by Darrin Barney**

Everyone knows how important your team is for the success of your business. But in reality, how many people are able to find and most importantly, keep those superstars once they get them on their team? Darrin Barney will show you a road map that will allow you to find, keep and grow your most important asset.. Your employees. Darrin and his team have grown his shop to one of the largest independently owned auto repair facilities in North America, and they have customers, literally around the world. His unparalleled success quickly caught the attention of the industry, and it's brought about his being featured in countless podcasts and nationally published articles, he's been on the cover of Auto Inc. magazine, and he's spoken at number of the industry's largest events. He is also currently the Vice President of Operations at Elite. Here are a few of the topics that Darrin will be discussing. Importance of Knowing where you are going Hiring and growing a team of Superstars The importance of MLAP, Goals and Performance Tracking Love em' or Lose em! - Why your shop culture matters and how to take care of your team. Discipline and having difficult conversations

### **Trust is Your Real Currency (M4-A) by Rick White**

This class is a game-changer. How frustrating are repeated, preventable, comebacks? You've talked to your team about it. And yet yesterday you caught a tech break a part and try to hide it. Why? Because the tech was afraid to tell you. He didn't trust you. And now you don't trust him. And just as importantly – your customer doesn't trust either of you because his car broke down on the side of the road. Trust is an elusive word. You know you need it, but if we're all honest, the concept of trust is difficult to wrap our head around, never mind use as a tool. This class will help you see first-hand what happens when there's low trust—and how much it costs your company when there is. You'll also learn the ingredients necessary to foster high trust within your culture and how to turn those strategies into a more engaged team that builds loyalties with customers and turns them into raving fans who keep coming back for more! After you implement the strategies I teach you, business and life will be easier than ever as you draw people to you in an open and authentic way while watching high trust GROW your bottom line!

### **Understand Your P&L Statement TODAY! (M6-B) by Greg Bunch**

In this class, Greg Bunch will walk you through real P&L statements to teach you the basics you need to understand to run your business better.

- How to check your numbers
- What is common in the industry
- Practice working through real examples
- Get your questions answered

### **Using Google Reviews to Increase Word of Mouth Marketing (M17-D) by Jimmy Lea**

Word of Mouth Marketing is the most effective marketing you can hope for to increase customers to your shop. Hope is not a plan! Reviews are the new word-of-mouth marketing. The advise 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 Google Ranking and rise to the top on Google Searches \* Turn your customers into Raving Fans who spread the good news 24/7 every day! \* Learn the secrets to increasing your Google Rating and Digital Footprint via Word of Mouth Marketing! \* What needs to be done when my shop gets a 1-Star Review on Google.

### **Why Only Aiming for 60% GP on Each Ticket Doesn't Make You Profitable (M23-F) by Aaron Stokes**

This class will unlock powerful ways to make your shop profitable beyond just focusing on GP% (and why this practice doesn't always result in a profitable P&L). We will discuss reverse engineer your financials, more effective ways to calculate profitably, and other proven best practices to run your shop by numbers that lay a foundation for profitability.



## VISION 2023 – TECHNICAL COURSE DESCRIPTIONS

### **ADAS - Need to Know Info for the Calibration Technician (T52-G) by Mike Reynolds**

This course focuses on information technicians need in order to successfully service and calibrate modern ADAS systems. Topics include: System operation and component function; Tooling requirements and their functions \*(updated for 2022); Calibration and diagnostic strategies; Common concerns, faults, and how to address them. This course is designed for technicians preparing to enter the ADAS calibration space as well as technicians that are looking to sharpen their current calibration skillset.

### **Advanced Alignment Diagnostic Angles (T53-G) by John Gillespie**

Restoring the vehicle to proper alignment can be difficult when a technician does not properly understand that there is more to do than setting the angles we are familiar with; caster, camber and toe. For example, a vehicle may have struck a curb and bent a steering knuckle slightly. If the vehicle is returned to within specs without replacing the bent steering knuckle, it may drive okay in a straight line, but produce handling and tire wear issues when cornering. This class explores the more advanced alignment measurements such as vehicle symmetry, steering axis inclination, scrub radius and much more. Throughout this class the technician will gain understanding of many possible underlying issues that result from collision or vehicle alterations, as well as the solutions that are available when adjustments are not provided from the factory. Becoming familiar with all the many functions that modern alignment machines have to offer will make each technician a better alignment specialist.

### **Advanced Application of Fundamental Electrical Theory (T20-C) by Keith Perkins**

This class is designed for all levels of technicians by providing a quick refresher to bring the new to electrical diagnosis technicians up to speed, as well as solidifying the foundations for all the advanced level technicians. We cover leveraging wiring diagrams for ALL diagnosis. The class then dives into advanced tooling uses, as well as testing methods to increase your efficiency and accuracy as a diagnostician.

### **Advanced Diesel Testing Strategies (T41-F) by Tom Rayk**

This course will cover the most popular engines from 6.7L Power Stroke, Cummins and Duramax. In this session you will learn how to select the proper equipment for testing a variety of common failures on these engine families. Focus will be placed on enhanced lab scope usage and set-up. Emission systems continue to evolve and so do the service issues. Learn how to spot the core failure with diesel emission and aftertreatment systems. Don't miss this opportunity to expand your diesel diagnostic skills.

### **Advanced Driver Assistance Systems: An Introduction to ADAS and Their Calibration (T28-E) by Eric Ziegler**

ADAS or Advanced Driver Assistance Systems are a hot topic emerging in the collision and auto repair industries for the past few years and they are most certainly here to stay. This class will discuss many of these systems, their operation, as well as, the challenges and opportunities they present to the modern technician. The discussion will include but not be limited to; Adaptive Cruise Control (ACC). Blind Spot Monitoring (BSM) Lane Keep Assistance System (LKAS), Lane Departure Warning (LDW), and other camera-based systems. This is a no-nonsense investigation of these mission-critical safety systems, how they work, their interactions with one another, their advantages and disadvantages, why manufacturers are using them and most importantly what service opportunities they present for the modern repair facility. Some servicing and calibrations can be done with tools the shop already may own. Many real-world examples and insights are included.

### **Advanced Oscilloscope Engine Testing (T42-F) by Mark Kenyon**

This clinic will focus on the different types of electronic engine diagnostic procedures used to diagnose today's engines. Both in cylinder pressure transducers and manifold vacuum transducers used with a digital storage oscilloscope (DSO) can reduce valuable diagnostic and teardown time on today's VVT equipped multi-cam engines. Engine performance and emissions can be severely impacted by cam timing concerns caused from lack of oil, failed timing chain tensioners and/or stretched timing chains or belts. Volumetric efficiency reductions caused by lack of air flow concerns from restrictions in the intake or exhaust systems can cause Low Power concerns. Engine compression issues can be significant in size or very small, almost undetectable at times, leading to misfire DTCs. Relative compression testing can reduce the time it takes to validate a compression issue on an engine. These types of problems can skew the diagnostic information in the scan tool and can make it unreliable or unclear. In this clinic you learn the benefits of using modern diagnostic equipment and when to use these testing techniques.

### **Advanced PICO Scope Functionality (T2-AB) by Adam Robertson**

Many technicians in our industry lean on PICO 6 as their oscilloscope software of choice. PICO 7 is now the current version of the tool and shares the advanced features of PICO 6 software that we have come to depend on. In this class we will improve your

comfort level using PICO 7 and show how to manage essential settings. From there we will expand that usability into more advanced functions such as use of masks and creation of math channels. Bring your laptops with PICO 7 installed for a hands-on experience using this software interface. Topics Include: - Software and Viewing Options - Interfaces - Measurements, rulers and coupling - Advanced triggers - Math Channels - Reference Waveforms - Deep Measure - Masks and Alarms - Persistence Mode - Serial Decoding - Filters and Resolution Enhancements - Custom Probes - PICO Diagnostics

#### **Advanced Transmission Fundamentals (T54-G) by Dennis Madden**

Don't let the title fool you. Dennis Madden, former Technical Director and CEO of ATRA, will cover an in-depth discovery of automatic transmission principles and diagnosis. This program is designed for technicians wanting a better understanding of the transmissions they see in their shops. Dennis also covers road-testing techniques and transmission testing that'll help you answer the important question: Is the customer's complaint inside or outside the transmission. Never again replace an automatic transmission, only to find that it's doing the same thing your customer came in for.

#### **Air Conditioning Tips & Techniques (T29-E) by Marc Dufort**

In this HVAC class, we will look at new developments in systems designs, controls, service techniques and tools. Each year, the manufacturers face stricter regulations regarding emissions and fuel economy and improving the efficiency of HVAC systems is a big part of their response. The next refrigerant, r1234yf is being used in more vehicles and you will need to be prepared for diagnosis and service of these systems. The electronic controls for HVAC have become more complex and need to be part of your diagnostic process. We will show you how these systems work, what goes wrong, and how to complete a successful repair. Be ready to help your customer stay comfortable in their vehicle. After completing this class, a technician will be able to: - Identify new technologies and their impact on HVAC - Properly replace HVAC components - Perform correct HVAC service - Diagnose cooling fan and airflow issues - Diagnose in-car HVAC controls

#### **Asian Smart Charging Systems (T43-F) by Jim Lewis**

Asian manufacturers have unique approaches to computer-controlled charging systems. This class offers detailed information on popular Asian smart charging system designs, operations, and diagnostic procedures. Recommended for all levels of Technicians - Battery, belt, and circuit service - Honda Electronic Load Detection (ELD) and dual-mode systems - Toyota computer-monitor systems - Nissan Intelligent Power Distribution Module and dual module systems - LIN bus-controlled systems - Using DMMs, scan tools, and scopes to diagnose computer-controlled charging system issues in specific applications o How can charging system problems affect idle speeds and transmission shifts? o What is hard line testing and how can it be used to check... · Toyota monitoring signals? · Honda dual-mode commands? · Nissan duty cycle commands? o What is the difference between an electronic battery monitor and a battery current sensor and how are these devices tested?

#### **Assembling the Diagnostic Drivability and Electrical Puzzle Pieces (T30-E) by Jim Morton**

In many of the Diagnostic presentations that I have seen over the years (including some of my own) there is a part of the diagnostic process taught. In this presentation, I would like to start with the initial consumer concern and go through the entire procedure ending with the "ROOT CAUSE" of the issue, not the results. Developing a consistent, repeatable procedure will keep the shop and the technician profitable. I was taught years ago by my mentor that the difference between a business and a hobby is that one of them makes a Profit, so let's spend some time analyzing how to get into the correct area of concern with general test procedures and then drive down the funnel to arrive at the actual concern using detailed pinpoint test procedures.

#### **BMW 101 (T24-D) by Justin Morgan**

Dive into the world of BMW, or get a healthy refresher on BMW. Justin Morgan will take you thru all things BMW to prepare you for working on them. Covering vehicle chassis numbers, engine platform codes, and transmission identifications. Demystifying the BMW service info by breaking down; component designations, wiring diagram symbols, and document types. Moving into covering European specified terminal numbers, circuit identifications, and BMW acronyms. Then closing with the differences between the different BMW software's; ISTA, ISTA P, AIR. Lots of information and some tricks to make navigating BMW information much easier for both the novice and experienced BMW tech.

#### **BMW 48v Mild Hybrid (T21-C) by Justin Morgan**

Covering the system operation and controls of BMW's new 48v system. This system is actively in use and was brought into production mid-year 2020. Stay ahead of the curve as we go into detail on the system layout, components used, diagnostic strategy, and repair tips for possible issues. The mild hybrid system is becoming common on all BMW 6 cylinder cars, and will continue to trickle in to the rest of the BMW models in short order. 48v mild hybrid systems are becoming a reality for many

manufacturers and the systems will be similar to other carlines. This is a great introduction into high voltage systems as all components from this system carry over to full hybrid and full EV systems. If you are looking to brush up on or you are just getting into high voltage and hybrid systems this will be a great class for everyone.

#### **Braking System Diagnosis and Repair (T31-E) by Rob Roth**

This seminar focuses on braking system diagnosis and covers components, operation, and proper service practices. This course highlights real-world case studies to address brake noise, pulsation, pad wear, fluid leaks, and concerns with power assist systems. Enhanced braking system designs and features by various manufacturers will also be covered.

#### **Chrysler Drivability & Code Diagnostics (T3-AB) by Wally Mouradian**

This all-new Chrysler training seminar is the latest installment in our Engine Performance series, and continues the evolution of our products from a systems-based layout to a diagnostics-based layout. Because of the new format, today's more complex symptoms and codes become easier to understand in the classroom and far easier to diagnose back in the shop. This approach applies to new and legacy engine management systems, so it will change the way you approach any Chrysler vehicle. This seminar and manual were built by analyzing actual diagnostic struggles and documenting the shortest diagnostic paths for engine management and emissions systems. Coverage includes: - High level indicators for all drivability fault categories - Multiple timing tests without disassembly - New low compression, low vacuum strategies - Fuel Trim diagnostic tips to avoid being mislead - Nailing Rear Fuel Trim faults - The new Air/Fuel Sensor (AFS) - O2 sensor bias variations & diagnostic traps - Chrysler-specific MAP and vacuum fault reactions - Tips for finding the root cause of misleading CMP & CKP sensor codes - PCM driver faults and repeat component failures - Simpler methods for diagnosing codes on LDP, ESIM, and NVLD EVAP systems

#### **Combustion, Carbon and Carnage... Diagnosing Difficult Deposit Related Driveability Concerns (T12-B) by Gary Smith**

This class looks at how fuel and oil depositing plays a MAJOR role in getting the diagnosis RIGHT THE FIRST TIME on these modern close tolerance, fast-fuel control GDI vehicles. - Learn the HOW and WHY behind deposit fouling and translate this with your scan and scope data via the BASELINE diagnostic approach. - This is an eye-opening class for techs, advisors and shop owners alike, and talks about critical knowledge that the OEMs are NOT teaching today... - Learn how adding this diagnostic strategy to your mix can save time, prevent un-necessary parts replacement and have LESS DRIVEABILITY COMEBACKS. A Must-See class for all shops.

#### **Conquering Data Network Issues (T22-C) by Rich Falco**

With increasingly complex vehicles comes larger and more complex data networks. CAN is now joined by CAN FD, LIN, MOST, Flexray, Ethernet and others. Efficient diagnosis of these networks does not need to be difficult if you understand the data bus structure and follow a logical thought process. This course will teach the structure and use of various bus styles and then present a variety of test methods along with a logical process for understanding and evaluating common network problems. Topics include: • Troubleshooting approach • Test tools that you already own • Specialized diagnostic tools • Network topology • Data bus variations • OE and aftermarket scan tool strengths and weaknesses.

#### **Critical Thinking-Diagnostic Strategies '2023' (T56-G) by Jerry "G" Truglia**

This popular class has been updated from 2022. Success in diagnosing today's high-tech systems requires a high-tech approach. This class covers the tools you need to cope with these challenges. You'll learn to develop a diagnostic process and a diagnostic "Game Plan". How to use the tools the OEMs give you; ECM strategies, code setting criteria, PID analysis and how fuel trims can be used to point you in the right direction. This seminar also discusses batteries, including coding and reprogramming, parasitic draw, voltage drop, engine testing including relative compression, compression testing, cylinder leak down, gas analysis, fuel flow testing, fuel trim, current ramping, PCM testing, pressure transducers, reprogramming, a new way to test EVAP and much more. This new class will provide the tools for success in diagnosing today's high-tech systems that require a high-tech approach. Covered are the tools you need to cope with these challenges.

#### **Deciphering Gas Turbo Driveability (T57-G) by Curt Eigenberger**

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.

### **Developing Better Diagnostic Judgment (T9-A) by Haakan Light**

Developing Better Diagnostic Judgment by Understanding Control Unit Logic and the Power of Delta (Change) as a Diagnostic Tool. This class will examine the power of Delta (Change) as a diagnostic lens from which to view a problem. We will review many of the potential avenues in which you can use this to assess a fault. The class will drill down into the control unit internal workings/logic to enable the technician to have a better understanding of what causes a fault code to trigger in the first place. However, the class will remain highly accessible even to the less experienced diagnostician. The instructor will focus on building better confidence in the technician's diagnostic judgment. The class will be focused on a pragmatic/practical approach to diagnosis with an emphasis on real-world application examples. We will survey and discuss multiple methods and means of measuring and assessing delta for multiple vehicle systems so that technicians with varying equipment can still be successful. The instructor will also seek to involve attendees in sharing their own experiences with many of the topics covered to provide a collaborative and cooperative, positive experience for all. By the class conclusion, technicians can walk away with an improved sense of process, logic, and effective judgment.

### **Diagnosing Keys & Immobilizer Systems (T25-D) by Keith Perkins**

Vehicle security systems are considered by most technicians to be overly complex and difficult to repair. We will explore some solid foundations of how vehicle security works, how each OE implements the systems and how to effectively approach diagnosis, key production and cutting, copying, and key registering/programming. We talk about PINs, EEPROM, NASTF, and TOOLS! As well as current industry challenges.

### **Diagnosing Multiplexed Data Bus Networks (T32-E) by Lee Hammler**

Diagnosing complex network system failures is a challenge even for experienced technicians. In this seminar, technicians will focus on diagnostic strategy to hone their problem solving skills for serial data failure modes in multiplex networks. Included network protocols: CAN, LIN, GMLAN, MOST®, and repair methods will be covered.

### **Diagnostics 101 (T4-AB) by James Wilson**

Diagnostics 101 - QTF Comprehensive System Testing - this class uses the Quick Things First testing procedures to check for proper system testing. Using tools that most shops already have will form a diagnostic foundational procedure. Test procedures will baseline the vehicle for repair or point in a direction for more testing. Systems tested: - Battery/Charging/Starting - Compression/Engine Condition - Fuel Pump/Fuel Injectors - Ignition - Computer. Scan, compression gauge, vacuum gauge, and Lab scope are used. This is the procedure to determine if we have any problems with the vehicle's basic functions. The process can be done with big box analyzers or using handheld testers. We need to set a baseline of the condition of the engine compression. Fuel pressure and volume. Electrical system and computer functions.

### **Drivability Best Practices (T15-CD) by Eric Walker**

We've been busy collecting all of the best tests and proofs for quickly sorting through drivability possible causes. As always, we start with high-level Indicators such as Volumetric Efficiency & Fuel Trim. But while we've been advocating this approach for a while, the vehicles keep changing! This all-new seminar tackles how our shop-up diagnostic approach applies when you add turbocharging, revert to MAP sensors (vs. MAF), reduce manifold vacuum, and other changes that keep us constantly learning and growing. Traditional diagnostics tell us to 'check the basics', but there's no way to accurately and profitably diagnose with such an outdated model. This seminar and manual put all of the core decision-making tables you'll need in Section 1, which eliminates almost all possible causes with very little actual testing. Then you're directed out to appropriate sections for breathing, fueling, ignition and mechanical tests. In most cases, you'll beat the problem in the first hour. Topics include: - Volumetric Efficiency calculations on naturally aspirated and boosted engines - Torque management & driver modes - Calculated Load vs. Absolute Load - Crankcase pressure diagnostics - Fuel Trim the most important way - by condition! - Transducers vs. gauge-based test options - Simplified misfire testing options Whether you're diagnosing a customer complaint or a condition code (other than circuit codes), this seminar will teach you how to leverage the manual back in the shop to find the fastest diagnostic path.

### **Electronic Brake Control Systems (T26-D) by Gary Kimball**

This workshop is designed for classroom education to enhance the technician's ability when performing base brake service on vehicles with Electronic Brake Control (EBC). These systems are found on many luxury and hybrid vehicles. We discuss the operation of the brake system components involved and how apply pressure is generated. In addition, ABS/stability control system operation found on EBC systems are reviewed.

### **Enhanced Fuel Control (T44-F)** by *Marc Dufort*

This course prepares technicians to streamline their diagnosis of fuel control related problems through an understanding of systems operation and the application of data and diagnostic functions. The next vehicle you diagnose might be equipped with an Air/Fuel or Lambda sensor. These sensors have complicated the diagnosis of fuel trim DTC and reduced power concerns. Our familiar scan data such as g/s for a mass air flow sensor, short term and long term for fuel trim, 0-1 volt for O2 sensors have been replaced with terms like kg/hr, equivalence ratio, milliamps, or strange voltages that don't make sense.

- o Describe the difference and operation of speed density and MAF systems
- o Explain short- and long-term fuel control
- o Analyze scan data to determine proper engine breathing
- o Explain the basic operation air fuel ratio sensors
- o Analyze fuel control under various operating conditions

### **Essentials to Key Cutting and Programming (T33-E)** by *Andrew Sexton, Matt Fanslow*

This hands-on course will walk you through acquiring the key code. Setting up your machine and cutting the key. Then finish with successfully programming the key to the vehicle. Everything you need to know to get started adding keys as a service for your customers.

### **EVAP Code Diagnostics (T58-G)** by *Marc Dufort*

This course will prepare the aftermarket technician to diagnose and repair evaporative system failures regardless of the type of system being used. Technicians will understand the theory behind evaporative system operation and how various methods and devices are used to satisfy government regulations concerning leak detection and more. This class will focus on the principles behind the EVAP onboard diagnostics and empower you to be able to solve problems regardless of the various systems you encounter. You will be able to get that light to go out and stay out.

- Identify the difference between pressure and vacuum
- Describe the purpose and operation of the evaporative system
- Explain the difference between various system types
- Implement multiple methods of leak detection on any system
- Describe how evaporative systems operate on a turbocharged engine

### **Gasoline Direct Injection - Operation and Diagnostics (T45-F)** by *Curt Eigenberger*

The purpose of direct fuel injection is to improve fuel economy and reduce tailpipe emissions through a precisely metered fuel charge delivered directly to the combustion chamber. Direct injection can significantly increase horsepower and torque, reduce hydrocarbons, and improve fuel economy. This course provides students with the background to diagnose faults in direct injection fuel systems using service information and a variety of test equipment. Recommended for all levels of Technicians

- Operation and purpose of direct fuel injection
- Low-pressure side: fuel pump, fuel pump control module, low-side fuel pressure control
- High-pressure side: high-pressure fuel pump
- Fuel injectors, fuel pressure sensor
- Engine misfire and valve deposit faults
- What issues arise with Direct Injection?
- Does my diagnosis differ versus MPFI?
- What features are related to this technology?

### **GSTA General Service Technician Academy - 2-day course (T1-ABCD)**

This comprehensive 2-day program (Thursday/Friday) designed for entry-level and apprentice technicians. This program benefits the technician and the shop with increased efficiency, knowledge, and safety, as well as a cost-savings by helping prevent beginning mistakes. Certifications will come from Tire Industry Association (TIA), Automotive Lift Institute (ALI), and Mobile Air Conditioning Society (MACS). This course does require approximately 3 hours of prework prior to coming to VISION. Class size is limited so register early.

Over the 2-day course, we will cover:

- Tire Safety – hands-on mounting and dismounting, repair procedures and balancing
- Tire pressure monitoring basics
- Lift safety – Including Information access for proper lift placement
- OSHA and shop safety training
- Alignment basics
- Intro to Air Conditioning
- Electricity Fundamentals
- Introduction to Digital Vehicle Inspections - a systematic approach to test drives, inspections, photos and videos and the benefits to the tech and to the shop of performing the DVI.

### **Hands-on Lab Scope Component Testing (T34-E)** by *Jason Gabrenas*

In this course, we will cover component operation and testing using a Snap-on lab scope. We will cover the fuel system (injectors



and fuel pumps) data bus testing (single-wire and CAN), ignition testing, and more. Since this is a hands-on class, each individual will use a provided Snap-on scope, so seating is limited. Even though the class is taught on Snap-on equipment, the concepts used in the class can be translated to any automotive scope.

#### **Hands-on PicoScope (all day / hands-on) (T16-CD) by Scott Shotton, Matt Fanslow**

DSO's are an extremely valuable tool for diagnostics today. This hands-on class will cover the basics of PicoScope set-up, connection using wiring diagrams, valuable tests that can be added to a technician's diagnostic arsenal and, as an end result, improve technician efficiency.

#### **High Speed CAN Communication (T46-F) by John Thornton**

High Speed CAN Bus problems are common with all vehicle manufacturers. These problems can range from a "no com concern" with a single module to a "no com concern" with all modules.

Three major topics will be covered in this class:

- HS CAN Bus and CAN Bus Transceiver operation
- identifying known good HS CAN Bus testing techniques with an ohmmeter, voltmeter, and scope
- numerous case studies will be presented explaining the diagnostic process on a variety of CAN Bus issues

The goal of this class is to provide HS CAN Bus system knowledge, and to develop a successful HS CAN Bus diagnostic approach.

#### **Hybrid and EV - Batteries and Charging (T59-G) by Bill Weaver**

Every car and light truck manufacturer in North America today builds at least one model with a hybrid-electric or all-electric powertrain, and the popularity of these models is growing. This training course covers the proper procedures involved in the measuring and operational testing of HV components carrying a voltage. Recommended for all levels of Technicians - Hybrid and electric vehicle design - In-bay safety and personal protective equipment (PPE) - Low-voltage battery systems - High-voltage shutdown procedures - High-voltage battery systems - Hybrid, PHEV, and EV charging - HV battery heating and cooling systems - How do I jump start a Hybrid vehicle? - Can I use a normal battery charger? - Can it REALLY hurt me, or is that hype? - Do I have to buy a new DVOM?

#### **Hybrid System Diagnostics (T17-CD) by Bryan Perrin**

Vehicle coverage includes examples from Honda, Toyota, Ford, BMW, Hyundai/KIA, General Motors, and more. There are now over 100 hybrid models on our roads, but our captures and case studies cover the limited number of configurations used. After this seminar, you'll be able to recognize the systems and components even when working on one of the dozens of low-production hybrids. Using these skills, you can approach a common hybrid or a model you've never seen and easily identify components, functions, and interactions. Better still, you'll be able to select the appropriate test from our manual to avoid guessing when available repair information is confusing (or nonexistent). Specific topics include: - An intuitive understanding of power sharing - Drive motor types & feedback, including BAS, planetary, 2-mode, flywheel, clutched EV, etc. - Battery stress-testing w/ failure examples - High voltage battery faults vs. voltage drop - ICE faults and test variations vs. non-hybrid - Understanding the braking/regeneration mix - Testing air, coolant and refrigerant cooling for batteries, motors, engines & electronics - Lots of auxiliary tests for fans, pumps, HVAC, plug-in charging, brakes, instrumentation, etc. - Cool circuit tests not listed in OEM information For each discussion, we focus on the high level thought process to help you rule out entire categories of faults. Finding out what's not wrong prevents wasted tests and the distractions that lead to misdiagnosis. Bringing this ideology to hybrid diagnostics makes sense because the complexity of the drivetrain and auxiliary systems means that mistakes cost a lot of time and money. After this seminar you'll have confidence when the next hybrid rolls in, no matter who made it!

#### **Hybrid Vehicle Maintenance Procedures (T47-F) by Rob Roth**

This course will focus on maintenance service procedures that aftermarket technicians can perform on hybrid electric vehicles. Participants will receive a high-level overview of the operation of hybrid components, related safety concerns, and serviceable systems. These include high voltage system operation, supporting systems such as HVAC and brake systems, and internal combustion engine.

### **Import Induction Systems (T35-E) by Kris Lewis**

This broad category includes the following modern systems that manage and manipulate intake airflow: - Electronic throttle controls - Traditional solenoid wastegate turbos - Motor actuator wastegates - Intake side boost bypass systems - Variable intake geometry - Variable intake tumble/swirl - Integrated crankcase breathing systems - Manufacturer-specific faults & tips These systems are grouped together because faults often affect more than one of them, and codes may set in one system as a symptom of a fault in one of the other systems. These topics are covered separately, but with timely references to related possible causes so that you never leave a possibility off the list early in a diagnosis.

### **Inside or Out? - Transmission Diagnostics for the Drivability Tech (T36-E) by Keith Clark**

A general automotive technician's approach to addressing transmission-related customer complaints. The training covers diagnostic processes that isolate engine versus transmission issues; whether working on foreign or domestic 4-speed, electronic-controlled applications. Also includes diagnostics for CVT's and 6 through 10-speed units.

### **Intermittent Electrical Diagnostics Strategies (T5-AB) by Rick Kelley**

ATG training manuals & seminars contain great strategies for thinking your way through a diagnosis. However, many diagnostic situations first call for duplicating the symptom or code, and this can be extremely frustrating. Well, now there's a seminar just for this problem! ATG believes that faults are usually present and measurable even if the symptoms or codes are intermittent, so we've developed a repeatable strategy for flushing out these elusive faults. Additionally, we have assembled the best tools and tests for isolating faults and validating repairs, including: - Customer & technician worksheets - Best practices for voltage measuring tools - Largely unused DVOM features & functions - Specific Scan Tool tips & tricks - Homemade tools for - Circuit isolation - Fault isolation - Load substitution - Other inexpensive tools & techniques - Tool limitations & traps - Case studies to reinforce every concept This seminar applies to all manufacturers, so everyone will benefit. Intermittent faults stretch every technician's skills, so come to this class to learn how to win against the toughest diagnostic challenges.

### **Intro to HVAC: Cooling System and Refrigerants (T51-F) by Ryne Thomason**

This course reviews the core of today's cooling and air-conditioning systems and other related systems, including those in hybrid vehicle applications. The technician will be able to diagnose cooling and air-conditioning systems. Students will also be able to test closed AC systems using pressure and temperature readings and learn how to handle A2L (mildly-flammable) refrigerant R1234yf – standard in every new car and light truck being sold in the U.S. since 2020.

- Recommend for C to B level technicians
- Cooling systems operation, diagnosis, and repair
- Climate control systems, ventilation, and heating
- Computer-controlled HVAC operation
- R134a, R1234yf, and R744 refrigerants
- Importance of lubrication and non-cross contamination
- Refrigerant sealer & refrigerant identification
- Diagnosing issues via temperature and pressure
- EPA Section 609 technician certification requirements (certification test not administered)

### **Introduction to BEV/HEV Services (T13-B) by Rich Falco**

Technicians may find themselves at a disadvantage when faced with new and ever-changing vehicle technology without the foundational knowledge of hybrid and electric vehicles. Component and system knowledge may be lacking in these areas, leaving uncertainty of the safety hazards that may exist during repair. A question often asked by shop owners and technicians is "what tools do I need to work on these new platforms?" This course is designed to inform technicians regarding the most current safety regulations, tools and procedures of servicing hybrid vehicles. After completing this course technicians will be able to: - Identify hybrid configurations - Understand electric vehicle charging classifications - Demonstrate proper safety practices - Define vehicle safety systems - Describe interlock circuit operation - Analyze High-voltage relay operation - Discuss High-Voltage Batteries - Predict high-voltage battery failures using test equipment or scan data - Recognize the need for high-voltage battery maintenance and perform corrective procedures

### **Introduction to Tesla Models S, X, Y, & 3 (T6-AB) by Aaron Jones**

The Tesla introduction course will cover each individual model vehicle. The instructor will outline the generations of change and

common failure issues for each model & generation. The course will also overview Tesla's branded diagnostic software and how to navigate factory service information and wiring diagrams.

- Navigating Tesla's Service Information & Scan Tools- Battery and Management Systems- Tesla Service - Tips and Tricks- Hidden Service and Repair Procedures- Ordering Parts - Navigating the Hurdles and Challenges

#### **J2534 Asian Programming Update (T14-B) by Keith Perkins**

J2534 is a constantly changing arena of technology. As the need for programming Asian vehicles in the shop bay increases, especially with mandated OE diagnostic software being provided for use with a J Device, technicians have to be more familiar with the J2534 process. This class will focus on the need for J2534 today. The current information for hardware setup, software configurations, and changing OE websites will be covered in detail. Topics will include: - Computer and operating system setup -Java and Browser security configurations -J Device selection and management -OE websites and APIs -The reprogramming process - Problems and solutions

#### **J2534 Domestic Programming Update (T10-A) by Keith Perkins**

J2534 is a constantly changing arena of technology. As the need for programming in the shop bay increases, especially with mandated OE diagnostic software being provided for use with a J Device, technicians have to be more familiar with the J2534 process. This class will focus on the need for J2534 today. The current information for hardware setup, software configurations, and changing OE websites will be covered in detail. Topics will include: - Computer and operating system setup - Java and Browser security configurations - J Device selection and management - OE websites and APIs - The reprogramming process - Problems and solutions

#### **Learn PS7A from Pico! (T48-F) by Randy Dillman**

New to Pico or maybe new to PS7? Learn the new software from a Pico employee that was involved in the testing and development since the beginning. Randy will be covering beginner to intermediate topics including sample rate, triggers, math channels and more. You don't need to own a Pico scope to attend, just have the new PS7 downloaded on the laptop that you bring. Scopes will not be needed as we will use the demo signals built into PS7. You can download the latest software from our [picoauto.com](http://picoauto.com) website for free.

#### **MASINT: Measurement and Signature Analysis, What's Going on Inside the Box? (T11-A) by Gary Smith**

A Study of Advanced Electrical Testing and Diagnostics Through the Understanding of Electronics Fundamentals

- Electrical Fundamentals, Is This Advanced Subject Knowledge, or Just Basics? Study How These Apply to Daily Use in the Bay. - Electronics Circuit Operation and Fundamentals, Is This Advanced Subject Knowledge, or Just Basics? You Decide. - Study How Understanding the Electrical Fundamentals Affects Your Lab Scope Waveform Interpretation. WHAT am I looking at here? (Woah..) - Intro to Advanced Lab Scope Tools and Functions and Their Use In Live Diagnostics (Strategies for Intermittent Captures, Etc.)

#### **Mechanical Engine Specialty Scope Diagnostics (all day / hands-on) (T18-CD) by Jason Gloria**

In this all day class, you will learn the steps required to quickly and accurately diagnose mechanical engine problems using mockups, enabling diagnostic procedures to be performed quickly and accurately. This class will be held in a shop environment where you will be around running engines, so be sure to bring along appropriate safety gear (PPE – Personal Protection Equipment). Recommended for A and B level Technicians - Electronic compression testing - Intake pressure transducer usage - Fuel pressure transducer usage - In-cylinder pressure diagnostics

#### **Misfire Diagnostics (T60-G) by Eric Ziegler, Scott Shotton**

Learn some logical processes and testing techniques to diagnose misfire issues on all types of vehicles. Scan tools, oscilloscopes, and more will be used to illustrate how to effectively, and efficiently, diagnose the root cause of a misfire issue before parts swapping/replacement. When you return to the shop on Monday you can be confident with your misfire testing and diagnosis.

#### **Network Nightmares: Solving the Diagnostic Distress (T19-CD) by Gary Smith, Adam Robertson**

There is no doubt that data communications/network issues are amongst the most difficult, time consuming and costly diagnostics that we encounter. Factory scan tools offer expanded testing techniques that are manufacturer specific, but even those dedicated software platforms are not enough to accurately diagnose these problems in many cases. These problems fall into several categories: codes and multiple communication DTCs, scan tool errors, vehicle wiring and component faults, intermittents and more. This class is designed to provide some sound NEW diagnostic routines and the road maps that we have developed over many

years of study and application. Topics will include: - The operation of the many communication protocols (languages) Single and dual wire, ethernet, fiber optic, wireless and the rules that make them work. RF, the radio signals that are common today for; HMI, TPMS, entry/starting systems, etc. Network “wake-up” strategies and wakeup waveform analysis. Fault tolerance’s and lack thereof, how dirty can the signal be and still work? - The physical mechanism’s that makes a network function, terminated bus lines and CAN Nodes, how this relates to scope diagnostics on network bus lines -Network topology designs and their operational strategies - The proper application of scan tools and lab scope together, our diagnostic “tips ‘n tricks” Data interpretation, serial decoding, math channels, XY views, masks, alarms and more -Each topic will be backed up with real case studies to re-enforce the strategies used. All of this is followed up with live demonstrations that each technician will perform and prove-out on their own computer. Please bring your own computer with PicoScope automotive 6 and 7 installed, both are free at [www.picoauto.com](http://www.picoauto.com). This is a critical step regardless of the scope that is used at your shop. Not mandatory, but you will retain more of the hands-on component if you do!

#### **'Plug-In Power' Tips: Intro to PHEV & BEV J1772 EVSE (T37-E) by Dave Hobbs**

PHEVs (Plugin Hybrid Electric Vehicles) and BEVs (Battery Electric Vehicles) are rapidly on their way to becoming a common sight in your repair shop. Will you be ready for them? After completing this seminar, each technician will be able to; IDENTIFY the various levels of PHEV and BEV high voltage battery charging (Level 1, Level 2, and DC Direct / Fast Charge (a.k.a. Level 3) DIAGNOSE J1772, CCS Combo (DC Direct Fast Charge), CHAdeMO & Tesla vehicle connections and diagnostics of EVSE on the ‘vehicle’ side and the ‘house’ side OBSERVE a live demo of an EVSE tester (live demo in class) connected to a Level 1 charge cable to view scope (DSO) patterns and meter (DMM) readings.

#### **Pressure Waveform Acquisition and Analysis, From the Inside Out (T8-AB) by Brandon Steckler**

Course objective is to take the pressure-transducer novice to a whole new level. The goal is for someone with lab scope/engine mechanical-operation knowledge, to gain the ability to capture pressure waveforms (from the intake manifold/tailpipe and in-cylinder) and be able to use the information to make diagnostic-decisions. The course will cover transducer functionality with both absolute transducers as well as delta transducers. It will touch on the benefits and characteristics of both types of transducers and how they can be used to gain an edge. Diagnostic-approach will be carried out using real world examples and actual case studies from my own library. Attendees leave with confidence to invest in the tooling and to perform pressure testing and analysis to improve accuracy and efficiency.

#### **Scan Tool Data: What Does it Mean? (T23-C) by James Wilson**

The data coming from your scan tool can be confusing. This class will help clear that up for you. We will cover the six main sensor inputs and how to use them for diagnostics. The scan tool, DMM, and a lab scope will give you the direction you need. How to use generic OBD2 data to start with a cold engine, idle, and road testing.

#### **Starting and Charging System Diagnosis (T61-G) by Jerry Mungle**

This seminar covers battery, starting, and charging system component operation, diagnosis and testing, and correct service practices. The discussion on battery operation will include details on flooded and Absorbent Glass Mat, (AGM) types of batteries with emphasis on correct diagnosis and service. Starting topics will include processor controlled cranking systems, stop / start technology, and current diagnostic procedures. Participants will discuss computer-controlled charging systems including Regulated Voltage Controls (RVC), electrical power management, and advanced diagnostic procedures.

#### **Streamlined Approach to Diagnostic Dilemmas (T27-D) by Brandon Steckler**

This class capitalizes on the technicians’ ability to incorporate basic testing techniques with modern diagnostic tooling and combine it with available service information to solve seemingly difficult dilemmas; all with ease and efficiency, regardless of the vehicle type. The essence of the class is built around the idea that if adequate service information is present, a thorough understanding of one’s diagnostic tooling (and the tools’ limitations) as well as an understanding of the physics common to all vehicles’ system/components, ANYTHING can be diagnosed! Class will be VERY INTERACTIVE!

#### **Subaru AVCS and Reset of Learning Values (T55-G) by Leo Gilmore, Pedro De La Torre**

Subaru variable valve timing (AVCS) diagnostics on FB/FA engines, including a new fix for the Learning Values issue that used to require ECM replacement.

#### **Systematic Approach to Computerized Engine Controls (T62-G) by Rick Escalambre**

The workshop will provide a Systematic Approach to Computerized Engine Controls. Understanding the principles of Input,

Processing, and Output (IPO) will help the technician become a better diagnostician. Organizing inputs into categorized groups, learning known good values, and knowing the relationship between sensors are key to effective diagnostics. Attendees will diagnose scan tool Snapshot problems; Questions to be answered are: Why didn't the problem set a DTC? Was the problem computer related or was the computer just reacting to a mechanical or electrical condition? Can you truly believe what the scan tool is displaying?

**TECHtalks (T49-F)** *by Matt Fanslow*

Description coming soon.

**Three Phase Motor Testing Strategies (T63-G)** *by Vince Manship*

Electric vehicle technology is here to stay, don't let the industry get ahead of you. Whether the vehicle under test is hybrid or full electric, the motors designs carry over. This session will cover 3 phase motor design, operation and testing. You will learn how to select the proper tool for the test at hand. DVOMs will only go so far, see the variety of advance meters you will need to successfully diagnose electric drive motor/generators on today's cars.

**Tire Pressure Monitoring Systems (T64-G)** *by Tom Kirkham*

Description coming soon.

**Understanding and Analyzing a Parallel Circuit (hands-on) (T39-E)** *by James Wilson*

This course will take a deep dive into the classic automotive parallel circuit. Strategies are unveiled that will assist new technicians in comprehending and diagnosing a parallel circuit failure. From Ohm's Law to Kirchhoff's Law, we will cover them all, in an exciting format that will help you develop your technician training program. Concepts will be introduced in a basic format that will build complexity with hands on activities. Expected Learning Outcomes: Components of the circuit \* Series circuit diagnosis for pumps, motors, and lighting circuits \* Identifying and diagnosing parallel circuits \* Identifying and diagnosing series/parallel circuits, which are the most common circuits on vehicles today. \* Why you need to understand the type of circuit for proper diagnosis. \* How to check the power and ground side of the circuit \* What really is a voltage drop, and how it can help diagnose a problem.

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**Understanding and Diagnosing Air Conditioning (T50-F)** *by Jerry "G" Truglia*

This course goes beyond minimum requirements for recovery, evacuating, recharging, and recycling by offering real world examples in diagnosing and repairing A/C electrical, computer / BCMs, Climate control and electronic components. Most of today's vehicles come equipped with electronically controlled A/C systems. Auto AC systems have become more difficult to diagnose using the repair strategies learned from years of servicing R12 and R134a systems. This class will cover operation and service of today's and tomorrow's air conditioning systems including R1234yf.

**Vehicle Communication Systems, Operation, and Testing (T7-AB)** *by Scott Shotton, Scot Manna*

This presentation will cover the theory behind the broad range of systems used on modern vehicles to allow modules and components to communicate with one another and the technicians who service vehicles. The focus will be on single and dual wire networks, the various protocols used and how to identify them. The testing methods available will be discussed and vehicle case studies with network faults will be shown to build a solid foundation when confronted with a communication problem.

**Which Scan Tool Should I Buy? (T40-E)** *by Scott Shotton, Scot Manna, Justin Morgan, Keith Perkins, Tanner Brandt, Sean Tipping*

This presentation is a roundtable discussion designed to help attendees answer the long standing question, "which scan tool should I buy"? The panel is made up of trainers and industry professionals with a large amount of experience in scan tool operation and diagnostics. Audience participation is expected and encouraged.



## VISION 2023 – EDUCATOR THINK TANK COURSE DESCRIPTIONS

### **A Systematic Approach to Teaching OBDII Evaporative Emission Systems (E4-C6)** *by Rick Escalambre*

This workshop will provide a systematic approach to teaching OBDII evaporative emissions systems. Highlighted topics include safety, components, system operation, and testing. Not all EVAP problems are related to leaks. Lab sheets that can be used in your classes will be provided.

### **ADAS Hands-On: Mistake-Free Calibrations in the Bay (E4-C7)** *by Pam Oakes*

ADAS component overview, vehicle requirements, and creation of “mistake-free” sensor application calibrations techniques that the pros do not want everyone to know.

### **Diagnosing by the Numbers: DVOM Application with the Modern Automobile – for High School Teachers (E3-C4)** *by James Wilson*

Do your students ever ask why there are other buttons on a digital multi meter? Would you like to take their meter usage training to the next level? This course will cover the advanced features a DMM will offer to a technician. Hands on activities will enhance your knowledge on applying all the DMM’s features to diagnose a circuit failure.

Expected Learning Outcomes:

Testing Circuits for Voltage, Current, and Resistance \* Testing for Duty Cycle Signal \* Testing Diodes \* Amperage Clamp usage and Calculations \* Thermistor Probe Usage \* Zero Calibration of a DMM \* Min/Max Application \* Hold vs Auto Hold

### **High School Teachers Breakout Session (E2-C2)**

Breakout sessions for further sharing of experiences relating to topics picked in general session. We will conclude with a gallery walk for everyone to look over all ideas.

### **How is That Working for You? (E1-C1)** *by Tim Dwyer and Jim Morton*

In keeping up the ETT tradition of creating an event to celebrate all you hard working automotive educators, the Friday morning sessions will again be your opportunity to share successes with other instructors. Jim Morton and Tim Dwyer will moderate the breakfast session as we hear about “How is that working for you..?” Come prepared to share a quick story, technique or resource that has helped you teach technology. Topics of importance to the future of technical education will then be provided for further discussion in smaller breakout sessions where all notes will be recorded and shared during a gallery walk right before and during lunch. The goal is to gain resources and build relationships with other educators for the benefit of your students and the programs that you teach! This is truly an Educator Think Tank!

### **Post-Secondary Teachers Breakout Session (E2-C3)**

Breakout sessions for further sharing of experiences relating to topics picked in general session. We will conclude with a gallery walk for everyone to look over all ideas.

### **Resistance: Taking Megger and Milli out for the First Time – for Post-Secondary Teachers (E3-C5)** *by Sam Houston*

Attendees of this class will experience a first look at a megohmmeter and a milliohm meter. Discover how to setup and use these advanced electrical meters to evaluate a HEV/EV type circuit or component. Testing with hands on activities will provide an instructor experience that can be use to bridge the gap between traditional electrical circuit diagnostics and HEV/EV circuit diagnosis. If your program is looking into adding basic HEV/EV diagnostics, this course is for you!

Expected Learning Outcomes:

Megohm Meter Overview \* Milliohm Meter Overview \* Testing Process Overview for HEV/EV Wire Insulation, Motor Generator Phase Windings, Wire and Circuit Integrity \* Loss of Isolation Strategies \*

## VISION 2023 – HEAVY DUTY DESCRIPTIONS

### **Advanced Braking Systems (HABS) (HD6-G)** *by Swede Oun*

This course is intended to meet the needs of the in-service heavy vehicle technician to service, repair, maintain and diagnose various types of heavy vehicle brake systems. The course includes an ABS module and covers regulations, brake system theory and operation, components and how they function, the impact of friction material, and how to maintain a balanced braking system. Emphasis is placed on the importance of proper repairs and inspections to meet all of today's regulations pertaining to the brake system.

### **Advanced Diesel Testing Strategies (T41-F)** *by Tom Rayk*

This course will cover the most popular engines from 6.7L Power Stroke, Cummins and Duramax. In this session you will learn how to select the proper equipment for testing a variety of common failures on these engine families. Focus will be placed on enhanced lab scope usage and set-up. Emission systems continue to evolve and so do the service issues. Learn how to spot the core failure with diesel emission and aftertreatment systems. Don't miss this opportunity to expand your diesel diagnostic skills.

### **Air Disc Brakes (HD5-F)** *by Swede Oun*

This module provides knowledge of the air disc brake systems and components used in today's trucks. It also covers the repair and maintenance aspects and real-world issues with these systems. Every year more and more trucks are being equipped with disc brakes. It is imperative to stay on top of this area to prevent issues and violation.

### **Cummins 3582 Code Diagnostics (HD4-E)** *by Michael Eilbracht*

In this course you will learn how to accurately and efficiently diagnose the dreaded 3582 Selective Catalyst Reduction Efficiency code. I will explain theory and operation of the system as I show case studies on each problem vehicle. I will then show data logging and oscilloscope techniques to help you find the root cause of issues with the SCR System.

### **Cummins Case Studies (HD1-CD)** *by Michael Eilbracht*

In this course we are going to go over several case studies involving the diagnosis and repair of Cummins Electronic and Mechanical systems by using a logical process interpreting software logs and Oscilloscope Data. The case studies will include these subjects; Injection Pumps, VGTs, Injectors, Using bi directional controls with Insite to improve your diagnostics, Cummins Can Bus Troubleshooting

### **Diesel Aftertreatment Emissions System Training (HD2-CD)** *by Jake Alter and Darrell DeBoer*

This course is designed to do a deep dive into aftertreatment maintenance and troubleshooting. In this course we will cover the progression of Diesel Engine Emission Control History & Technology Advances. We will identify the components of a Diesel Engine Exhaust Aftertreatment system and explain their operation. We will describe the Diesel Exhaust Fluid (DEF) and the Selective Catalyst Reduction (SCR) system operation and diagnostics. We will walk through the Actuators affecting Aftertreatment and Interpret fault code troubleshooting logic. We will also describe processes to identify units that have had the aftertreatment system deleted and understand and identify what was done during an aftertreatment delete, and why it is imperative for a shop to know this.

### **HD DPF and SCR Systems (HD7-G)** *by Tom Rayk*

DPF and SCR System operations will be discussed in detail. These systems can be hard to diagnose and repair. Component identification and operation will be discussed on current systems. Sensors, coolers, injectors, actuators and valves will be covered. Electronic diagnostics will be covered on DEF and SCR Systems along with mechanical failure. Every truck technician will benefit from this program. Is the DEF fluid good? How do you turn the SCR light off. The following components and techniques will be covered. A section on what codes take longer to diagnose and why? Topics include: EGT temp sensors, NOX sensors, SCR pumps, Carbon build-up, Coolant leaks, Quick diagnostics, Scan tool bi-directional methods, Coolant bleeding, SCR fluid testing, Testing for DEF in fuel, DPF regeneration, DOC operation, Tool usage, New sensors on the latest systems, Ancillary problem causes, and much more.

All Medium, light, and HD truck technicians will benefit from this course. Demo parts will be available. The instructor will lead the class in some hands-on demonstrations on diagnostics.

**Heavy Duty Heating Ventilation & Air Conditioning (HVAC) (HD3-E)** *by Jake Alter and Darrell DeBoer*

In this course we will cover HVAC Theory of Operation, diagnostics, and field tested service procedures for medium and heavy duty vehicles. With the use of our “A/C System on Wheels”, we will describe the system components and explain their operation and discuss systems-based diagnosis and proper troubleshooting techniques using a real system and real HD components. We will also discuss ways to implement HVAC Service procedures that are proven to work on heavy duty vehicles.