



## Spring 2022 Course Presenters

### Friday 4-22-2022

4:00-4:45pm	Happy Hour hosted by CDX Learning systems!
4:45-5:45pm	Meet and get familiar with the New Hybrid and EV learning program with Dr. Nick Goodnight. Get all your questions answered and get familiar with tools to help you in the classroom.
6:00pm CAT	Board Meeting
7:00pm	Exhibitor set up in ball room

### Saturday 4-23-2022 8am Registration, 9:00am-5:00pm Courses, 6:00pm HOSTED DINNER, Raffle, and CAT LOGO Presentation!

#### BAR Program Updates

Matt Mahlke & Mathew Gibson

AB 471, Institution & Instructor Recertification, Institution & Instructor Regulation Update, Inspector Update Training Platform Change, Biometric Regulation Update, DAD 2.0 Update, STAR Regulation Update, DMV Electronic Registration Renewal Forms

#### Generation 2 Toyota Mirai Fuel Cell Vehicle

Jack Rosebro

Morning course: This course will look at the Generation 2 Mirai through the lens of "how do we introduce the subject of fuel cell powertrains to our students?" Teaching strategies, labs, scan data, safety, and serviceability will be discussed. This course leads into with an afternoon course on Toyota Teammate, a SAE Level 2 semi-autonomous driving system now available on the 2022 Mirai. We plan to have a Gen 2 Mirai equipped with Toyota Teammate on sit

#### 2022 Updates

Kevin McCartney

New Class 6 and Class 7 brake fluid required for proper ABS and Stability control response times. Common misconceptions will be addressed. SAE studies on common brake fitting field service errors. Next Generation Cooling/Coolant service failures including:

- 1) Fluoride contamination
- 2) New Fluoride tolerant coolant chemistry
- 3) Coolant viscosity vs Impeller failure data
- 4) Other topics include: 900-volt EV charging Tech & EV Thermal issues, Asymmetric Injection, Renewable ICE fuels, Next Gen Lubrication, Etc.

ASE Education Foundation – Adopt-A-School & Accreditation Resources  
George Arrants

Catch up on ASE Education Foundations newest programs and industry initiatives! Adopt-A-School is a great free resource for connecting businesses in need of qualified technicians with local automotive programs and schools. These resources were created by the foundations newest partners who wanted to get involved with local automotive programs and also pilot our registered apprenticeship program. Hear all about this important new initiative!

Handling Incomplete Readiness Flags PART 1  
Rick Escalambre

Workshop will provide a systematic approach to “Handling Incomplete Readiness Flags”. Learn how Global CAN “C” MODE 09 and MODE 06 can be used together to help identify difficult to set Readiness Flags. Understanding the difference between a Readiness Flag and a Monitor, then implementing this plan will allow the Technician to sit in the driver's seat with a scan tool and work smarter, not harder. Case studies will be used to demonstrate the plan

Variables for Completing non-Continuous Readiness Flags/Monitors PART 2  
Rick Escalambre

The workshop will address the Variables for Completing non-Continuous Readiness Flags. These variables include: identifying related PIDs, Inferred Exhaust Time, Parallel and Series Monitors, Test Samples and Flow Counts, Minimum and Maximum Monitor Completion time, Normal and Fast Filtering using Exponentially Weighted Moving Average (EWMA). Technicians must have an educated answer rather than an excuse when Readiness Flags do not Complete or take longer than expected.

Live Testing Electronic Transmission Sensors, Solenoids & Computers  
Thomas Broxholm

This workshop will go over various types of electronic sensors and solenoids found in electronic transmissions. I will demonstrate various methods and techniques to perform live tests to verify proper operation.

Connect, Integrated and Electrified  
Dr. Nick Goodnight

Introduction to the cutting-edge technologies that are tying the mobility world with the connected world throughout the industry. This presentation will go through some of the upcoming technologies and present ideas on how the automotive technician role is changing to one of an electrical mobility or energy technician.

MAKE YOUR \$274 BILLION OUTLIVE THE VIRUS  
Jake Clayson

Over \$263 BILLION in COVID relief funds have been distributed for schools nation-wide to ensure they have the training systems they need to withstand potential lockdowns, but confusion and conflicting information prevents most transportation programs from accessing those funds. In this session, I will show you how to find out exactly how much funding is available at your school and how to use those funds to future-proof your students for a rapidly evolving, increasingly electrified training.

TPMS - Inflate your knowledge with US! PART 1  
Allen Selzier & Sean Lannoo

Why TPMS? Importance of the Relearn procedure - System types and how they operate Vital TPMS service tools and functions - REDI-Sensor™ The Next Generation Correct maintenance and service techniques - Preventive maintenance Could we see "talking" tires?

48-Volts and Beyond - Preparing for the Electrified Classroom PART 1  
Dave Hobbs

Delphi Technologies / BorgWarner is a leading tier 1 OEM supplier for electrified vehicle components. This 2-part series of technical classes will help you prepare yourself, your school and future technicians in your automotive technology programs to diagnose and repair hybrids, plugin hybrids and EVs. Review of electrified vehicle concepts, PPE (Personal Protective Equipment) requirements, and essential diagnostic tools.

Domestic Anti-theft systems – Saturday & Sunday  
Phillip Fournier

Overview of domestic anti-theft systems, wireless low frequency communication with chipped keys and wireless high frequency communication with key fobs in push-button start systems. Communications systems between the various modules that are used to accomplish a starting sequence in assorted domestic vehicles will be covered. Workbook link will be provided, with printed course notes.

Strategies for Teaching Electric Drive  
Darcy Wedel

Course description: Instructors often struggle to find solutions for teaching electric vehicle technology. Unlike times past, when students could disassemble an engine & visualize how components work; new instructional methods are needed to help students visualize how converters and inverters operate. Key concepts: - How to form relationships between what students know and understand about conventional automobile components, and how to relate those concepts to electric vehicle components.

## **Sunday 4-24-2022 8am-12pm**

TPMS - Inflate your knowledge with US! PART 2  
Allen Selzier & Sean Lannoo

Part 2 - Sunday - Hands-on Tool and Vehicle Relearn Demonstration that backs up the material covered on Saturday.

Domestic Anti-theft systems – Sunday Session  
Phillip Fournier

Overview of domestic anti-theft systems, wireless low frequency communication with chipped keys and wireless high frequency communication with key fobs in push-button start systems. Communications systems between the various modules that are used to accomplish a starting sequence in assorted domestic vehicles will be covered. Workbook link will be provided, with printed course notes.

48-Volts and Beyond - Preparing for the Electrified Classroom (P2)  
Dave Hobbs

Part 2 takes back up from P1 with additional technical training tips on; 1. Selecting the best electrified vehicles and simulators for hand-on training 2.

Adding essential training on AC circuits into your curriculum 3. Advanced thermal management systems for PHEVs and BEVs 4. J1772, CHAdeMO and Tesla EVSE (Electric Vehicle Supply Equipment 5. Charger Faults - Is the HV battery charging issue from the onboard charger or EVSE?

2022 Toyota Mirai: Toyota Teammate SAE Level 2 Driving System  
Jack Rosebro

This course will introduce Toyota Teammate, Toyota's new SAE Level 2 semi-autonomous driving system. The course will investigate the similarities and differences between driver assistance systems from various manufacturers, and will set up a foundation from which an instructor can introduce students to semi-autonomous driving systems. We'll discuss radar, LiDAR, stereo cameras, long-range cameras, HD maps, object recognition, and much more. A 2022 Toyota Teammate-equipped Mirai will be on site.