

SARA HELLER
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MENTOR
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NACAT NEWS

VOL 37

OCTOBER 2023

NO.5





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NACAT News is Published SIX Times per Year!

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June 2024 issue - May 10, 2024

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October 2024 issue - September 10, 2024

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NACAT PRESIDENT'S UPDATE

DREW BARNES

VALE SCHOOL DISTRICT

Greetings fellow NACAT members,

Well summer break is officially over and here we are knee deep in the beginning of a new school year! The beginning of this school year is not without its milestones, however. I have started my sixteenth year as an Automotive Instructor, my oldest child has begun his senior year in high school, and I stepped into my role as your current NACAT President on September 1, 2023! It seems like only yesterday I was attending my very first NACAT Conference, which for me was 2016 in San Jacinto, TX (the very same place where our most recent conference was held). For those of you doing the math, that was not too long ago. Since then I have had the opportunity to serve as a NACAT board member and officer. So, why did I decide to get involved? Two of my biggest struggles when I first got into education were:

1. Lack of industry training opportunities.
2. Developing effective teaching strategies.

For me NACAT checked both of those boxes, so I decided to get involved and try to help the organization that helped me.

Ok, enough about me. I am sure all of you reading this have one question. Where is NACAT 2024 going to be held? Unfortunately, I cannot share that information quite yet. However, what I can say is that we have settled on a location and it is a great one! It is a great place to host a conference and has some great relative attractions! So, be on the lookout in the very near future as we prepare to "unveil" the details for the 2024 NACAT Conference! I think you will all be quite pleased with this location. I assure you that our team is working diligently to finalize all the details, so that we can get this information out to all of our members as quickly as possible.

I would like to highlight one of our newest member benefits, ***The Mentor Program***. Your current NACAT Vice President, Ed Martin, created this program. The Mentor Program is a great opportunity for all automotive instructors, from new teachers fresh out of industry to veteran teachers who have been teaching for years. In fact, the more experience we have in the "room", the better. If you have not yet had a chance to participate in one of these sessions, I would highly recommend it. Our next session titled ***"How to Get the Most Out of Your Skills Program"***, is scheduled for ***Thursday, October 12 at 7:00 pm CST***. I hope to see you there! Also, if you have any specific topics or ideas for future Mentor Program sessions, please share those with us and we will get those on the agenda.

As a reminder, as a member of NACAT, we are here for you. With that being said, please feel free to reach out with any questions, comments, suggestions, or concerns that you might have.

I wish you all the best of luck this school year! As educators who are looking to continue their education through quality training, I feel it is appropriate leave you with this quote from Henry Ford.

"Any man can learn anything he will, but no man can teach except to those who want to learn."



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Getting To Know...

...Sara Heller, Raritan Valley Community College

Hi, everyone!

I am so humbled and honored to have been elected to the NACAT Board and to be part of the team! My journey to becoming an associate professor/coordinator of the automotive program at Raritan Valley Community College (RVCC) located in New Jersey, was unexpected with many curves in the road but has been amazing.

The first time I ever drove a car was at Safety Town on a school trip back when I was in 3rd grade. I LOVED it and could not wait to start driving! I come from a large family (I am the second oldest of eleven) and I was the first to start driving. Because I was the first of my siblings to start driving, the car was not only something that I loved, but it was also the only space I could be by myself. I didn't care that it was a 12-seater van that I learned how to drive on, I just wanted to be behind the wheel. With eleven siblings, money was always tight. Therefore, the car could not be the priority. Anytime it needed to be fixed, it would often be at the shop for a long time until we had the money to pay the bill.

Once I had a taste of the freedom of being able to drive where I wanted to, I did not want to take public transportation anymore and I just wanted to get behind the wheel. I decided I wanted to be able to fix the car myself. I was commuting two hours each way to college at the time, majoring in architecture. It was at that time that I decided to pursue automotive technology, something that I had been thinking about but didn't really have any direction with. I was, unfortunately, discouraged and talked out of pursuing automotive at that time. With no other direction, I decided to transfer to a college much closer to home and I ended up majoring in Philosophy. Philosophy came easily to me allowing me to complete my degree speedily and with ease. I graduated with a BA in Philosophy and still had no direction.

My desire for automotive was still there and I decided to look into some schools. I only knew of APEX & Lincoln Tech at the time. Apex was easier to get to and cost \$10,000 less than Lincoln Tech. I enrolled and started classes within a week. Money was an issue and when I was told they place 60% of the class, I made sure I would be one of those that were placed (I wasn't going to take out loans and pay for a program if I wasn't going to be able to pay it back afterwards). I graduated the top of my class and I still wasn't placed.

The hardest thing for me was finding a job. I brought my resume everywhere I could think of and I couldn't get anyone to take me seriously. I would not accept rejection of my dream to be an automotive technician and decided to do whatever it took to be in the field. I ended up working for free for a little less than a year so that I could get experience. I was able to defer my loans for a year but after the year was over, I had to start working fulltime so that I could pay back my loans. It was at that time that I found out about the Success Via Apprenticeship (SVA) program. The program trains vocational teachers to teach. I got into the program even though teaching wasn't initially what I had in mind, but I needed experience and this program would provide me the experience I needed. The SVA program was one of the best programs I was a part of and I am more proud of completing the SVA program than I am of obtaining my Master's Degree. While in the SVA program, I worked diligently to learn as much as I could and make a name for myself by working at Ken's Auto Repair & Tires, Quick Care Auto Service, and Warren's Car Care Center as well as teaching at Grady High School, Automotive High School, Alfred E. Smith, and occasionally subbing at Co-Op Tech).

CONTINUED ON PAGE 8

During that time, I got married, moved to New Jersey, and pursued my Master's Degree. My hard work and diligence finally began paying off. I was hired as the instructor/coordinator of the automotive program at Middlesex College. Three years later I moved to RVCC where I have been ever since. I even was the recipient of the **CCAR/Electude ASE Instructor of the Year** this past year!

Automotive instructional programs are very interesting and different from other instructional programs because they are unbelievably expensive to run and to maintain due to the fast pace of changing technologies and applicable tools. The industry is constantly changing, requiring us to be current with the newest technologies so that we can ensure that our students are learning what's needed for the present and near future. The biggest focus right now is on electric vehicles and on learning the technology, creating the curriculum, teaching the information, and so much more. I am excited to be a part of this unique era, and I look forward to learning together!

When I'm not working (which if I'm honest, I'm probably doing 85% of the time), I can be found with my husband and our three-year-old son. Now that the weather is nicer, we are outdoors as much as possible. I love hiking, playing games, rafting, reading, cooking, and so much more. I love challenging myself and will always choose the hardest hike possible! When I'm not doing any of the items above, you can find me in my garage tinkering with a 1976 Triumph TR6!



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JIMMY BUFFETT

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IN LOVING MEMORY



Lisse Duvic

deadline: May 15, 2024

Lisse Duvic Scholarship

In memory of Lisse Duvic, the Duvic family is providing a scholarship to one first-time spouse at the 2024 NACAT Conference.

This \$500 scholarship includes one guest package, 2 Awards Lunch tickets, and the remaining balance towards the hotel stay. The recipient will be honored at the 2024 NACAT Conference Awards Lunch.

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WOMEN IN AUTO CARE SCHOLARSHIP PROGRAM ACHIEVES RECORD YEAR

Women in Auto Care, a community of the Auto Care Association, set a new record for its scholarship program, distributing [86 awards](#) in both cash scholarships and starter toolkits, (\$413,500 in value). The awards benefited female students across the U.S. who are interested in a career in the auto care industry. The incredible success of this year's program was supported by the generosity of Women in Auto Care community sponsors and member donations.

Over the last year, Women in Auto Care:

- Continued its partnership with Garage Gurus to award five \$7,000 cash scholarships totaling \$35,000;
- Introduced its largest cash scholarship of \$10,000 in partnership with Dorman;
- Awarded 20 toolkits valued at \$9,000 each through its continued partnership with NAPA; and
- Partnered with Acuity to award an additional 10 toolkits valued at \$4,250 each.

The Women in Auto Care scholarship program began in 2004 with just \$2,000 and has continued to gain momentum each year. This marks the sixth year in a row that the program has reached its most successful year to date, with a more than 10% increase from the record set in 2022. The program surpassed a major milestone of more than \$1 million dollars in scholarships and toolkits in 2022. Additionally, Women in Auto Care became a Gold Lifetime Trustee for the University of the Aftermarket in 2023.

"It was another record year for our scholarship program, donating over \$410,000," said Jessica Toliuszis, chair, Women in Auto Care. "I am especially proud of our tool program which awarded 30 pallets of tools to aspiring female technicians. We are deeply grateful for the support from the entire extended community. Thanks to our sponsors, we are funneling the talent pipeline in the automotive aftermarket with diverse candidates."

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The mission of the Youth Automotive Training Center is to train and educate at-risk youth in basic automotive repair skills, academic remediation, job readiness and life management skills. The goal of this program is to prepare young adults who are at a disadvantage in their lives to become self-sufficient, productive, law-abiding citizens.

Location: Deerfield Beach, FL

SEMA AWARDS MORE THAN 100 SCHOLARSHIPS TO INDIVIDUALS PURSUING CAREERS IN THE AUTOMOTIVE AFTERMARKET

-- \$245,000 distributed to 104 students and recent graduates --

The Specialty Equipment Market Association (SEMA) has issued a total of \$245,000 in scholarship and loan forgiveness awards through its SEMA Memorial Scholarship Fund to help 104 individuals pursuing a career in the automotive aftermarket industry. The winners include 87 students who received scholarships ranging from \$1,000 to \$5,000 and 17 employees of SEMA-member companies who received loan forgiveness awards to help pay off student loans.

"SEMA receives a large number of scholarship applications each year, and the quality of this year's applicants was truly inspiring and impressive," said SEMA Manager of Recognition Programs Chris Standifer. "Their passion and innovative mindset were evident in their applications, and it gives us great hope that they will continue to advance the aftermarket industry and make a lasting impact."

The SEMA Memorial Scholarship Program was established in 1984 to help support the future of the automotive aftermarket industry. Since its inception, more than \$3 million has been awarded to deserving students. One of the primary criteria for scholarship recipients is that the winner must have clearly demonstrated a passion for the automotive industry.

A directory of the 104 students and recent graduates to which \$245,000 was distributed can be found [here](#).

The online application for next year's program will open in January 2024 at www.sema.org/scholarships.





STUDENT SCHOLARSHIPS AVAILABLE

\$1,000 Larry Cotten Memorial Scholarship by NACAT

(4) \$1,000 Student Scholarship by VISION

American Muscle Student Scholarship

Automotive Hall of Fame Scholarship

Automotive Women's Alliance Foundation Scholarship

STEERING FUTURES: TECHFORCE FOUNDATION LAUNCHES "GRAB THE WHEEL" CAMPAIGN FOR FUTURE TECHS

On Labor Day, September 4, 2023 TechForce Foundation proudly initiated the ["Grab the Wheel"](#) campaign, a crucial effort to help young people find a technical education and career that fits.

"Too many students are being forced down the 4-year university path, which may not be the best fit for them. For those who love problem solving, working with their hands, and the rising technology enveloping the transportation (AKA: mobility) sector today, a technical education and skilled technician career can be wonderfully rewarding," explains Jennifer Maher, CEO of TechForce Foundation, a national nonprofit 501(c)(3).

With a clear objective to inspire the next generation of technicians who will keep America rolling, this campaign zeroes in on students aged 13-24 who are still considering what they want to be when they grow up. "They're looking for options, freedom, and a chance to design their lives the way they're wired to work," explains Angie Babin, Chair of the TechForce Foundation board of directors. "These young individuals are at a pivotal stage, eager to identify a path that merges their personal inclinations with prosperous futures."

"It's about helping them connect their unique strengths and passions to meaningful work that makes them happy and fulfilled. GenZ's motto is 'You Be You,' and we agree," affirms Maher. "If you don't want to sit at a desk the rest of your life, sign up for four more years of academia, or just love engines and making things work, you can go further, faster with a tech career."

The campaign will have its presence felt all year. The ambition is clear: welcome one million new entry-level technicians over the next five years to meet a pressing workforce demand.

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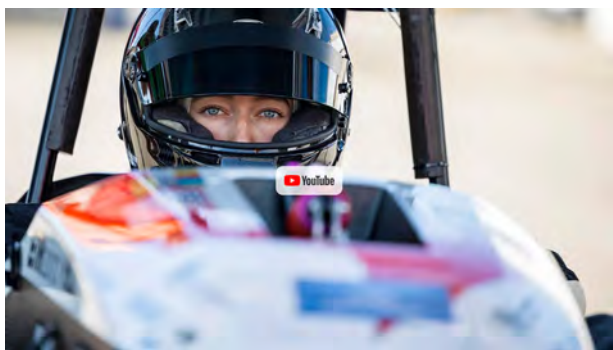


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STUDENTS SET NEW EV ACCELERATION WORLD RECORD: 0-62.15 MPH IN 0.956 SECONDS



[Click the image or here to view the YouTube video.](#)

Students from [ETH Zurich](#) and Lucerne University of Applied Sciences and Arts have broken the previous world record for acceleration with their hand-built electric racing car, mythen. The vehicle accelerated from zero to 100 km/h in 0.956 seconds over a distance of 12.3 metres (40.35433 feet).

The members of the Academic Motorsports Club Zurich (AMZ) are absolutely thrilled. For the better part of a year, these students from ETH Zurich and the Lucerne University of Applied Sciences and Arts have spent every spare minute working on their electric vehicle, which they named mythen, overcoming setbacks and going back to the drawing board time and time again for certain

components. Now, Guinness World Records has confirmed that mythen broke the previous world acceleration record for electric vehicles. On the Switzerland Innovation Park in Duebendorf, Switzerland, directly opposite the students' workshop, their racing car accelerated from zero to 100 km/h (zero to 62.15 mph) in just 0.956 seconds, accomplishing this feat over a distance of merely 12.3 metres. At the wheel was Kate Maggetti. This beats the previous world record of 1.461 seconds, set in September 2022 by a team from the University of Stuttgart by more than a third.

"Working on the project in addition to my studies was very intense. But even so, it was a lot of fun working with other students to continually produce new solutions and put into practice what we learned in class. And, of course, it is an absolutely unique experience to be involved in a world record," says Yann Bernard, head of motor at AMZ.

Lighter, stronger, more traction



All of mythen's components, from the printed circuit boards (PCBs) to the chassis and the battery, were developed by the students themselves and optimised for their function. Thanks to the use of lightweight carbon and aluminium honeycomb, the race car weighs in at only around 140 kilos (309 pounds). Four-wheel hub motors that the students developed themselves and a special powertrain give the vehicle its impressive power of 240 kilowatts, or around 326 hp.

"But power isn't the only thing that matters when it comes to setting an acceleration record – effectively transferring that power to the ground is also key," says Dario Messerli, head of aerodynamics at

AMZ. Conventional Formula One cars solve this through aerodynamics: a rear or front wing pushes the car to the ground. However, this effect only comes into play when the car has reached a certain speed. To ensure strong traction right from the start, the AMZ team has developed a kind of vacuum cleaner that holds the vehicle down to the ground by suction.

Hotly contested world record

The AMZ team had set the world acceleration record for electric cars twice before – in 2014 and again in 2016. In the following years, their record was broken by a team from the University of Stuttgart. Now the world record is back in Swiss hands, and the ETH Zurich students are confident they will not relinquish it again any time soon.





HYBRID & ELECTRIC VEHICLE CORNER

CURT WARD

PROFESSOR AT JOLIET JUNIOR COLLEGE

The ASE xEV Level Two High-Voltage Technician Safety Exam

As I write this article the fall semester is in full swing. Our enrollment is back to pre-pandemic levels and the employment prospects for our students have never looked better. Earlier this year, ASE announced a series of safety exams that center on electric vehicle safety. I had the opportunity to take the level two exam, and I believe the content is exactly what the industry needs to understand. In this article I will discuss the content areas of the exam and why it is so important that an instructor who is going to teach hybrid and electric vehicles understand the subject.

Currently ASE has two safety exams available for registration. The level 1 exam is intended for the electrically aware person. People who should take this exam include service managers, service writers, or anyone else who is going to be around electric vehicles. The level 2 exam is intended for those who have received high-voltage training and have skills to repair electrically powered high-voltage vehicles. It specifically targets the areas of repair that require personal protective equipment. The exam is taken online and requires a passing grade of 80 percent. If successful, the certification is valid for three years. Visit www.ase.com/ev to register for the exams.

The level two exam covers twenty content areas. Personal protective equipment and understanding the risks related to working around high voltage is a significant part of the exam. Topics include class "0" gloves, safety glasses or face shield, and arc flash clothing. Also, in this section is the inspection and testing of high voltage safety gloves. Additionally, this section has a question on an insulated retrieval hook. Some manufacturers have specified these as a required special tool. There are also questions related to physical barriers and signage that should be placed on and around the vehicle being worked on. The barriers should be placed in a manner that will keep foot traffic away from the vehicle being worked on and the signage is used to make sure everyone is aware of the current state of the high voltage system. See **Figure 1** for the signage we use at JJC. There are questions related to arc flash and arc blast. Although the probability of either of these conditions occurring when working on a vehicle is low, it is important to understand anytime we are working with voltages more than 400 volts we need to understand both concepts.



Figure 1: Signage at JJC

In the area of equipment, there are questions related to insulated tools, multimeters, and insulation testers. Insulated tools should be used to limit the risk when working on or around high voltage circuits. They should be inspected for damage prior to each use, and they should be discarded if any damage is noted. Only a category III multimeter, rated at 1000 volts, should be used when measuring high voltage circuits. A live-dead-live method of measurement should be used when verifying an absence of high voltage. This measurement method involves first measuring a known low voltage source, such as a 12-volt battery, to confirm the meter is working properly. The high voltage circuit is then measured to confirm no voltage is present.

Third, the known low voltage source is measured again to confirm the meter is still operating correctly after

CONTINUED ON PAGE 17

being connected to the high voltage circuit. The questions on insulation testers or megohm meters are related to the safe use of the meters. The purpose of these meters is to determine if the high voltage system has continuity to chassis ground. A properly operating high voltage system does not have continuity to chassis ground. Class 0 gloves with leather protectors should be worn when making these types of measurements. See **Figure 2** for a loss of isolation test on a Nissan Leaf.

Several subject areas related to high voltage batteries are also covered on the exam. This includes the high and the low voltage disconnect methods of depowering the high voltage battery, the safety interlock circuit, high voltage capacitors, and the practice of lock-out/tag-out. Most of the vehicles in service today use a high voltage disconnect to isolate the battery for service. An increasing number of vehicles use a low voltage disconnect to disable the battery. See **Figure 3** for a low voltage disconnect that has been locked out. Most electric vehicles have high voltage capacitors in the inverter. They provide additional energy when required and provide smoothing of the electrical current generated by the electric motors. Be familiar with the time required for the capacitors to discharge when depowering the high voltage system.



Figure 3: Locked Out



Figure 2: Loss of Isolation Test

Any individual who has completed safety training and has practiced these tasks on a hybrid or electric vehicle should be able to pass the exam. It is important to remember that all the other safety items that we practice in our legacy classes and labs also apply in the high voltage setting as well. Check with your school's insurance carrier; in many cases the completion of training, the passing of a certification test, and the proof of proper safety equipment is what is required for insurance coverage when working with these types of vehicles in the classroom or shop.

I will finish this article with the same offer I make after each of my presentations. If you are interested in getting started in the process of adding hybrid and electric vehicles to your curriculum or want more information, please feel free to [reach out](#). I am more than willing to sit down in-person or online and share my experiences. Are you looking for a classroom textbook? [Reach out to Pearson](#) and ask for a review copy of the all-new [Electric and Hybrid Electric Vehicle](#) text that Jim Halderman and I co-authored. It is a comprehensive text covering all the latest information on the subject.

A teacher is a compass that activates
the magnets of curiosity, knowledge,
and wisdom in the pupils.

Ever Garrison



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NACAT HELPS PROVIDE ADVANCED DRIVER ASSISTANCE SYSTEMS (ADAS) SUPPORT AND RESOURCES FOR AUTOMOTIVE INSTRUCTORS



Pam Oakes

Pam Oakes, Subject Matter Expert (SME) in automotive app engineering, business intelligence, and technical training at autoINENG.io, utilized the courses she presented at the 2023 NACAT Conference & Expo in Houston, Texas to share information on available and upcoming ADAS resources for both educators and institutions.

Oakes serves on the the advisory committee of the National Council of Autonomous Technologies (NCAT) — land-based/ADAS representation — an arm of the National Science Foundation's Advanced Technological Education (NSF/ATE). The group's goal is to get ADAS educational tools into the classroom. The National Council of Autonomous Technologies (NCAT) will begin to provide collegiate automotive instructors (following up with high school instructors within the year) material that covers ADAS, equipment (practice and standard) options, curriculum,

peer-to-peer group, and whatever else may be needed for the autonomy instruction. This is a federally funded, no fee, sponsored program.

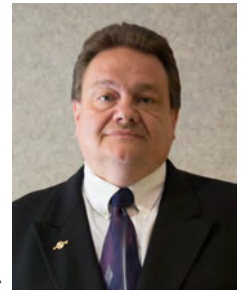
NACAT is pleased to have three of our board members, Sara Heller, Thomas Millard, and Louie Longhi on the NCAT's ADAS advisory committee. The committee will meet in early October as they work to finalize activities for what is shaping up to be an outstanding 2024 as the new initiative identifies institutions with established ADAS programs and develops a base for those who need curriculum guidance and funding support. Future years will see NCAT act as a support system for programs as they provide ADAS and related curriculum for mathematics, topology, alignment strategies, and many other vital topics. High Schools will be included in the program design though inter collegiate-to-secondary school networks.



Sara Heller

The importance of proper ADAS education is clear: The National Highway Safety Traffic Administration (NHSTA) stated that 615,000 traffic accidents could have been prevented with vehicle-to-vehicle (V2V) communication protocol. The ADAS initiative will serve as a keystone in efforts to create future professionals who are experts at calibrating/recalibrating ADAS-embedded safety standards for V2V and vehicle-to-infrastructure (V2x) accident avoidance.

What is already available on the [National Council for Automonous Technologies website](#)? A great many resources. They are categorized as educator, student, visual media, and grant resources. Descriptions, with links, for a few of the resources follow.



Louie Longhi

Course Curriculum: A diverse series of courses and curricula are available for download. A cursory glance will reveal topics such as [Introduction to Hybrid and Electric Vehicle Engineering](#), [Advanced Engines in Hybrid Electric Vehicles \(HEVs\)](#), [Automated, Connected and Intelligent Vehicles](#), and [much more](#).

Professional Development Funding: NCAT offers \$1,000 reimbursement to cover travel costs and registration for applicants wanting to attend professional development. Applicants are reviewed frequently to verify eligibility and selection. Notification will be sent out immediately once the process is complete. There are a limited number of participants that will be selected for this opportunity.

Eligible Participants for Professional Development Funding include:

- Secondary educators
- Faculty at community/technical colleges or universities
- Faculty supporting technician education
- Students enrolled in 2-year technical programs
- Robotics Education and Outreach Forum Participants



Tom Millard

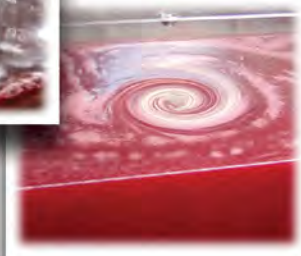
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MF200-CAV

Pump Cavitation Simulator

The MF200-CAV training system will teach engineers and maintenance technicians everything they need to know about vital aspects of reservoir design and operation at the inlet side of hydraulic pumps:

1. Best practices for hydraulic reservoir design.
2. Common pitfalls related to hydraulic reservoir design.
3. Why traditional reservoir design is a disaster.
4. Best practices for reservoir maintenance.
5. Cavitation.
6. Pseudo cavitation.



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Thank you to those who have either joined or renewed their membership since August 1, 2023.

Dennis Bolsinger
Calmar, IA

Sara Heller
Branchburg, NJ

Louie Longhi
Carol Stream, IL

Gary Roeske
Longview, WA

Charles Boyian
West Nyack, NY

Tim Isaac
High River, AB

Thomas Millard
Littleton, CO

John Stratton
New Hartford, NY

Jason Bronsther
Ottawa, ON

Chris Johanson
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UNIVERSITY OF THE AFTERMARKET FOUNDATION AWARDS

378 SCHOLARSHIPS FOR THE 2023-24 ACADEMIC YEAR

The University of the Aftermarket Foundation (UAF) has awarded 378 scholarships to students throughout the country, totaling \$640,250 for the upcoming school year.

Those awarded with scholarships will be attending a two-year or four-year college or university or an accredited automotive vocational program. While the majority of the students are studying to become mechanical, collision or heavy-duty repair professionals, others are pursuing degrees in such fields as business, engineering and IT/ cybersecurity that will lead to a career in the automotive aftermarket. In addition, many named scholarships were awarded on behalf of a variety of individuals and organizations.

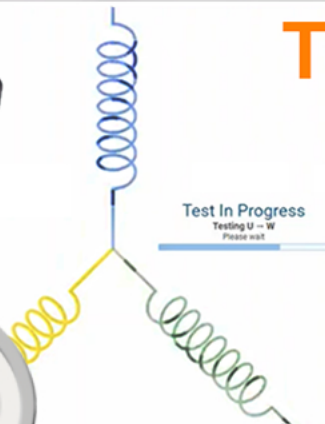
NACAT's own [Larry Cotten Memorial Scholarship](#) is awarded through the University of the Aftermarket Foundation's [AutomotiveScholarships.com](#) platform.

"It's wonderful to see so many students looking to the aftermarket as a career path and applying for scholarships to help get them there," said Mike Buzzard, AAP, chairman of the UAF scholarship committee. "Awarding so many scholarships would not be possible without the generosity of those who donate their time and resources to UAF. Their support helps ensure that the aftermarket remains vibrant and strong through education."

A complete list of recipients can be found at [AutomotiveScholarships.com/scholarship-alumni](#).

To apply for a scholarship for the 2024-25 academic year, students should visit [AutomotiveScholarships.com](#) or [HeavyDutyScholarships.com](#) by March 31, 2024.

U	V	V	W	W	U	Temperature
19.3 mΩ			19.1 mΩ		--. mΩ	13.4 °C
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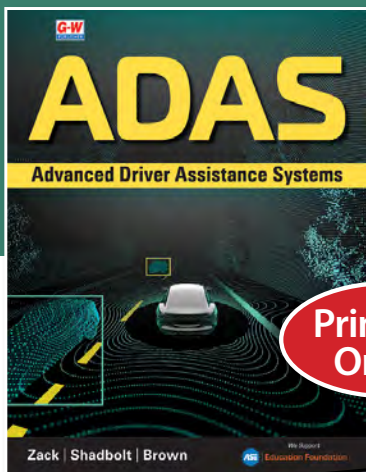
Lending Library: NCAT offers educators and industry professionals the opportunity to lend out equipment for utilization to enhance their programs and student experience.

Mentor-Connect: A program working to enable the nation's two-year colleges to improve and expand technician education. Founded in 2012, "Mentor-Connect's peer mentoring facilitates knowledge transfer from the more experienced to the less experienced. Peer mentoring also stimulates the engagement of STEM educators, broadens participation in the ATE Program, and develops a next generation of leadership to ensure the advancement of technician education to support our nation's economy."

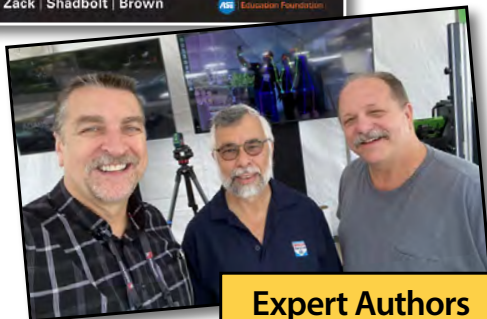
Mentor-Connect offers three types of no-cost mentoring to community colleges seeking to improve technician and related STEM education through projects funded by the National Science Foundation's Advanced Technological Education Program (NSF ATE). Descriptions of the three types of mentoring, "New to ATE", "Second Chance", and "Moving Up", deadlines for application, and a description of the application process can be found [here](#).

The program also provides a pathway for those who have been successful grantees in the NSF ATE Program to become mentors. New Mentors complete a Mentor Fellows internship which includes shadowing a current Mentor through a grant development and submission cycle.

The resources available through the [National Council for Autonomous Technology's website](#) is growing and NACAT is pleased to be actively involved in the efforts to bring ADAS resources and assistance to our fellow educators. The combined efforts of high schools, community colleges, industry, and all stakeholders will help create more effective and efficient training that will help to increase roadway safety.



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TIPS & TRICKS

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Competency-Based Evaluation

This past summer I had the opportunity to present a workshop not once but twice on competency-based evaluation at the NACAT Conference July 10 – 13, 2023 in Houston Texas. If you are wondering if you should attend the NACAT Conference, I can say it's a great opportunity to learn from peers.

The goal of my workshop was to lay out how Quebec certifies students in the automotive trade and how it may be applied elsewhere. Quebec certifies students using a competency-based evaluation. What a competency-based evaluation means is essentially that the teacher must focus the certification evaluation on all important aspects of the competency. The competency being defined as whatever the subject you are teaching, an example would be brakes. Using the competency of brakes as an example a competency-based evaluation would need to be sufficiently complex and resemble a real work situation as much as possible. What that means is in Quebec the teacher is only to certify students by administering a practical exam, or what is called a competency-based evaluation.

While no state or province is perfect, something I've always admired about Quebec is how sensible it is as to how automotive students are certified for the work force. Why is it that so many districts or regions still certify students with a written evaluation? We know doctors must complete some sort of residency. Would you want your surgeon to operate on you after only completing a written exam? I know I want to know that a student who is doing the brakes on my car has passed an evaluation where the teacher (automotive specialist as we are referred to) has watched a student perform brake replacement. I like the idea of knowing that through the students schooling the teacher has coached the actual practical work being done on a vehicle rather than the teacher spending time preparing a student for a written certification test.

Let's give some thought as to how we can apply some of what Quebec uses in your own classroom or shop. Have you ever thought about the process in how you provide feedback to a student's practical or shop work? We know too well that feedback on a written test is easy, the question was either answered correctly or not.

Here's some ideas. Use a self-evaluation check list. Make a bunch of "I can" statements that are measurable for the competency you are working with. For example, brakes. I can measure the thickness of a brake rotor, or I can measure remaining thickness of brake lining. Ask your student to go down the 'I can list' and do what is called a self-evaluation and hand it back to you. Self-evaluations rarely fail – students are honest with themselves - seriously give it a try sometime. You could also set the self-evaluation up with a column for what the teacher thinks. Then it becomes what is called a co-evaluation. Student fills in their portion, hands it into the teacher and then the teacher answers the same questions and fills in their portion and hands it back to the student. You'll often find the student is harder on themselves than you are as a teacher. What this sort of idea does is it opens a whole dialect you can have with your students. It's a great conversation starter.

How about taking the above idea and taking it to the next level. This often scares teachers, and I was in that camp early in my teacher career. I was forced into this on a university assignment, so no choice, but I am glad I did. Try a peer-evaluation. You could set it up as above, but this time have two students evaluate each other's work. Have the two students discuss their findings with each other and then hand it in to the

CONTINUED ON PAGE 25

teacher. As a teacher you will have to come out of your comfort zone for this, but I promise you will not be disappointed. It builds a community and a professional teaching/learning environment.

The goal of this Tips and Tricks is to make you think about how you are training or teaching your students. Are you the teacher who spends time teaching and worrying about making sure the student gets through the written certification process or are you a teacher who is concerned with providing feedback on the practical work the student is doing and evaluating them in a manner that encourages success when they get to the shop and need to perform the job. I think there is room for both if you are a teacher who still must ensure that a student is prepared to write their certification exam.

With the above ideas, how about bringing some of these ideas to the NACAT mentor meetings and share what you have used to evaluate students practical work in your shop setting. The next session, **"How to Get the Most Out of Your Skills Program"**, is scheduled for 7:00 PM Central Time on Thursday October 12, 2023. [Please register for this FREE EVENT and join us!](#)

[A listing of upcoming NACAT Mentor Program Sessions is available on the NACAT site.](#)

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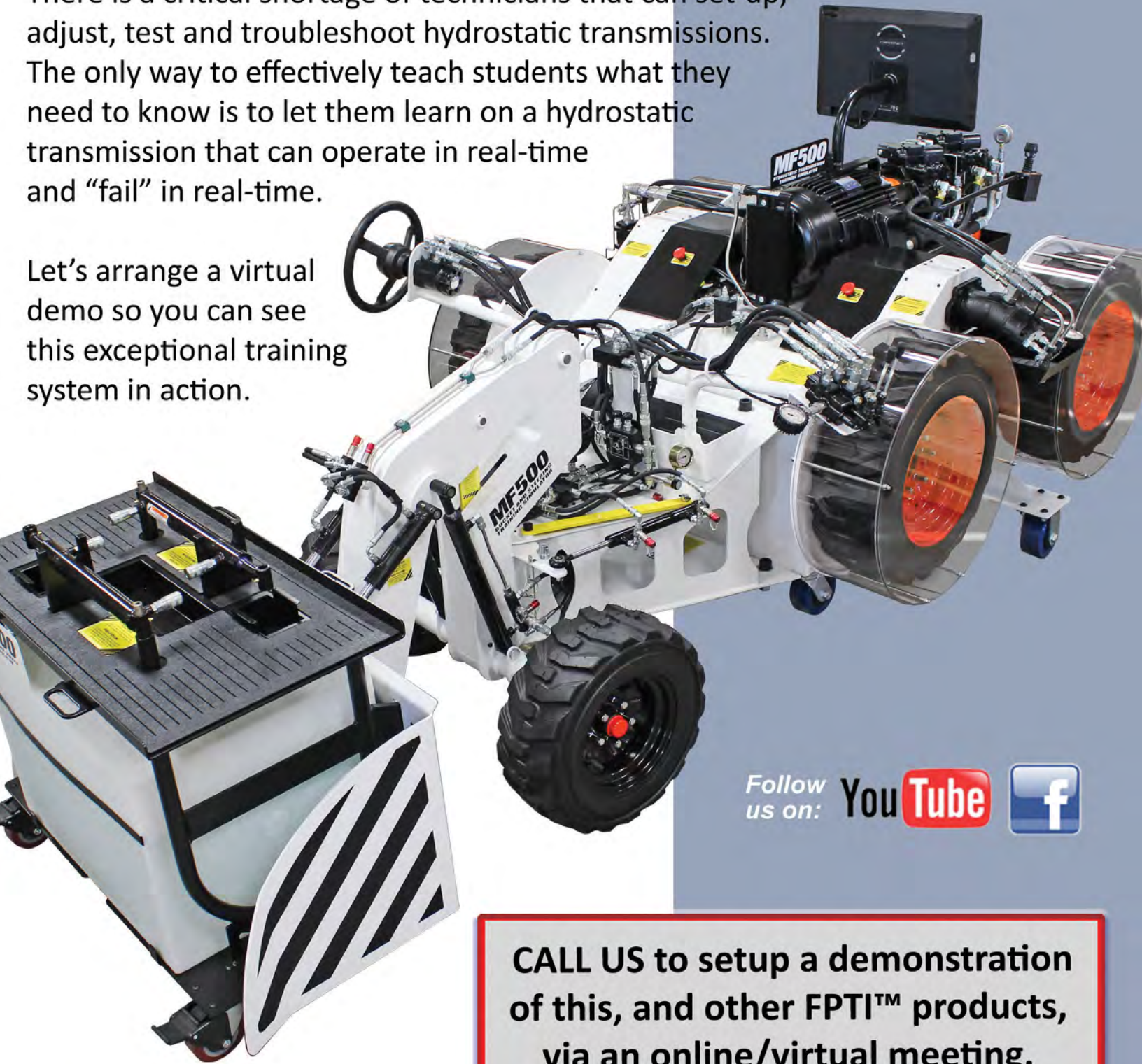
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