Short Course 2: Functional Safety for Electrified Powertrains
Wednesday, June 20th, 2019
2:00PM – 5:40PM (3:20PM-4:20PM Coffee Break in Exhibit Hall)
Venue: Legacy 1

Instructor:
Jody Nelson - kVA

Short Biography:
Jody Nelson received the B.S. and M.S. degrees in electrical engineering from the University of Wisconsin, Madison, with an emphasis on power electronics and was a member of WEMPEC. From 2002 until 2009 he worked for Daimler AG. At Daimler he worked in both the EMC Research and Development departments working on production hybrid and electric vehicles. He later moved to the electric motor control department where he focused on software development, diagnostics, high voltage safety, torque security and control board development for electric powertrains. In 2010 he co-founded kVA, a U.S. based company dedicated to improving functional safety in the automotive and industrial segments through consulting, assessments and training on ISO 26262 and IEC 61508.

Summary:
This short course discusses functional safety development concepts, stemming from the ISO 26262 standard, with respect to electrified powertrains. Without preventive measures, the risk of safety critical system malfunction becomes unacceptably too high. The functional safety standard ISO 26262, recently updated in its Second Edition, provides crucial safety-related requirements for all on-road vehicles. The First Edition was limited to passenger cars. Now with the introduction of the Second Edition, all trucks, buses and motorcycles are now included. Electric powertrains introduce additional hazards in comparison to traditional, internal combustion engine powered powertrains. The course will cover these hazards including increased braking torque, high voltage exposure and thermal concerns. The course will describe how automotive OEMs conduct the required hazard analysis and risk assessment (HARA) at the vehicle level. The HARA is the key analysis used to identify potential risks and develop the highest level safety requirements to mitigate these identified risks. Attendees of the course will become more familiar with the rugged processes required to develop functionally safe on-road vehicles.