

## JUDGE BIOS

### Written Technical Report

**Gary Baker** is a vehicle efficiency engineer for the CANMET Energy Technology Center of Natural Resources Canada (NRCan), which conducts R&D and related technology transfer activities related to efficiency technologies for the industrial and buildings sector, vehicle and engine efficiencies, and alternative transportation and renewable energy technologies.

**Frederick M. Cartwright** is the Director of Technology Planning for Global Planning and Program Management for GM Powertrain, where he has responsibility for the development of integrated technology plans for gasoline, diesel, and hybrid powertrains.

**Roger A. Clark** serves as Senior Manager for Energy, Mass, Drive Quality, and Environment for GM. His position includes leadership in vehicle performance, fuel economy, and mass requirements development; Corporate Average Fuel Economy (CAFÉ) strategy development; and the Fuel Economy Learning Vehicle innovation program.

**Forrest Jehlik** is Technical Coordinator for the Challenge X program, where he is responsible for the technical execution of the competition from the competition logistics to team support. Forrest is formerly a General Motors powertrain research and development engineer and is a proud veteran of the student competitions.

**Steve McConnell** is a Research Engineer in the Center for Transportation Research, Energy Systems Division at Argonne National Laboratory. Previously, Steve was a Project Engineer at Automotive Testing Laboratories. He graduated from West Virginia University with a B.S. and M.S. in Mechanical Engineering and served as Ergonomics and Controls Team Leader and Crew Chief for WVU's SAE Formula Team.

**Chuck Risch** has extensive experience with advanced automotive technology and alternative fuels from his more than twenty years at Ford Motor Company. A pioneer in developing and commercializing these technologies, Chuck joined Argonne National Laboratory after his recent retirement from Ford.

### Technical Presentation

**Don Baldwin** is Director of OE Technical Marketing, Michelin North America. He has 25 years with Michelin and is currently responsible for technical marketing and communications for the Michelin Automotive Industry Division.

**Micky Bly** is Director of Hybrid Vehicle Integration at GM's Milford Proving Ground, where he is responsible for the overall vehicle integration of the GM Hybrid and Two-Mode Hybrid Systems. Micky is also one of the GM Co-Executive leads for Challenge X.

**Debbi Bourke** is a Project Engineer at COBASYS LLC working in the transportation department. She has worked on a wide variety of projects, including a hybrid electric locomotive, an all-electric bus, a hybrid electric transit bus, and a hybrid electric bus.

**Joe Cargnelli** is Chief Technology Officer of Hydrogenics, one of the company's founders in 1995 and has served as a director since January 1996. Joe has led the evolution of the company's broad technology portfolio over the years and has been a key contributor in the alignment of technology development with Hydrogenics leading hydrogen and fuel cell product development.

**John Cotner** is a Senior Applications Engineer for the Field Automotive Systems Team of Freescale Semiconductor, where he works on hybrid vehicle control electronics and the implementation of advanced powertrain control algorithms on Freescale 32bit processors. John has worked in the automotive electronics industry for 17 years, managing Digital Radio and In-Vehicle Communication for Ford as well as Anti-Lock Brakes, and Vehicle Stability Control and Adaptive Cruise Control for Kelsey-Hayes. John received both B.S.E. and M.S.E. degrees in Electrical Engineering from the University of Michigan.

**Ted Grey** is Manager of Fuel Cell Stack and Power Module Design in GM's Advanced Product Engineering department, where he is responsible for the stack design and components.

**Jon Heidorn** is VP, Business Strategy & Marketing for UGS Corporation, where he is responsible for marketing all UGS product lines within the Americas. He has over 20 years of enterprise product design, manufacturing, and data management experience in the product lifecycle management industry. Previously, he held positions with Schlumberger Technologies Applicon, Halliburton, and P.C. Dynamics. Mr. Heidorn earned a bachelor's degree from Eastern Michigan University and an MBA from the University of Illinois-Chicago in marketing and finance.

**Larry Johnson** has more than 30 years of transportation research experience and is the author or co-author of more than 70 publications and conference presentations on transportation topics. He serves as the Director of the Transportation Technology R&D Center at Argonne National Laboratory.

**John Kluz** is a Consulting Engineer for The MathWorks, specializing in Controls, Modeling, and Rapid Prototyping. He has a M.S. from Penn State and a B.S. from Lehigh University—both in Mechanical Engineering. Previously, John worked on a number of electro-mechanical systems, including all-electric and electronically controlled air powered gantry cranes at Ingersoll-Rand, a robotic cargo handling system for the U.S. Navy at Penn State and prosthetic actuator devices at CyBotic Technologies.

**Stanley Ludlow** is Program Engineering Manager for the Theta Architecture, NAO Engineering, for GM. His position includes responsibility for engineering of the Chevrolet Equinox and the Pontiac Torrent.

**Ricardo Martinez**, Fuels Product Specialist, manages the Specialty Fuels Team within BP's Global Fuels Technology group. The Specialty Fuels Team supplies custom-blended gasoline and diesel to the automotive industry, laboratories, and academia for research purposes.

**Mark Roberts** is the Director of the Talent Acquisition Center at GM. He leads the overall salaried recruiting function and Academic Relations activities for GM in the United States and is the chairperson for GM's Global Talent Acquisition Roundtable.

**Don Senich** is the director of the grant program for "academic liaison with industry" at the National Science Foundation. He is responsible for implementing 22 million dollars in academic and industrial collaborative research in the Engineering Directorate and is the procurement interface with the Small Business Administration's Office of Government Contracting.

**Dr. K. Thirumalai** is Chief Engineer for RD&T with the U.S. Department of Transportation's (DOT's) Research and Innovative Technology Administration, a new administration created by DOT to focus on innovations and advanced technologies for transportation.

### Control Strategy Presentation

**Charles H. Folkerts** is the Manager of the Model-Based Controls group within the Advanced Propulsion System Controls department of GM Powertrain. He leads the design and development of control systems, architecture, and algorithms for future powertrain systems.

**Tim Grewe** is the chief engineer for GM's AHS2 – EP40/50 parallel hybrid system. The EP40/50 is a parallel hybrid system for heavy-duty transit buses that entered production in 2003; the AHS2 will enter production in 2007.

**Kent Helfrich** is director of GM's Advanced Powertrain Control Systems, where he develops powertrain control systems for near-future vehicles through internal R&D and strategic industry and university partnerships.

**Chris Hennessey** is the Applications & Controls Group Engineering Manager for AVL Powertrain Engineering, Inc. He has over 10 years of Powertrain Development experience with vehicle level controls, calibration, and production engineering programs. Currently, he is focused on the expansion of AVL's globally based advanced powertrain development efforts, with specific focus on hybrid powertrain development.

**Scott Kirchner** is a Senior Manager in the Global Electrical Software and Controls Central Engineering Group at GM. His group is responsible for vehicle chassis and body software and controls, and Scott is the GM Liaison to Intrepid Controls for Challenge X.

**James B. Kolhoff** is the Director of Software Engineering for GM Powertrain. He is responsible for production software design and testing for embedded engine and transmission controls, system engineering for security-critical powertrain functions, and powertrain-to-vehicle electronic and software interface specifications.

**Robert Leale** is a Field Applications Engineer for Intrepid Control Systems, Inc.

**Aymeric Rousseau** is head of the Advanced Powertrain Vehicles Modeling Department at Argonne National Laboratory. After working for PSA Peugeot Citroen for 3 years, he joined Argonne, where he is responsible for the development of the Powertrain Systems Analysis Toolkit (PSAT).

**Justin Shriver** has experience designing, testing, and implementing algorithms for stability control and is currently part of The MathWorks Advanced Support Group.

**Lee Slezak** manages the Advanced Vehicle Simulation and Evaluation Activities for the Office of FreedomCAR and Vehicle Technologies Programs within DOE's Office of Energy Efficiency and Renewable Energy.

**Richard Soja** works for Motorola and is focused on system design and definition of new microcontroller products. He contributed to the architecture and design of the MPC5554.

**John Theofanopoulos** worked on multiple DOE-sponsored advanced technology vehicle competitions during college. He works at Cobasys as a software development engineer and is currently Manager of Software Development for Stationary Applications.

**Andrew Watchorn** is the Academic Product Marketing Engineer, Northeastern U.S., for National Instruments. During college, he worked for seven summers at GM in various roles — from manufacturing engineer on assembly lines to project engineer related to the Cadillac Night Vision Head-Up-Display System.

### Vehicle Development Review Presentation

**A. Harvey Bell IV** is Executive Director of GM North America Advanced Vehicle Development. The Program Engineering Managers who report to him are responsible for the product and process engineering integration for all North America advanced vehicle programs, as well as the development engineering and validation associated with those programs.

**Joseph Cargnelli** is Chief Technology Officer for Hydrogenics, a leading global developer of hydrogen and fuel cell products. Joe was one of the company's original founders and has served on the board since 1996. He earned a Master's degree in Applied Science, Mechanical Engineering, from the University of Toronto, where he also received a Bachelor's in the same field. Previously, Joe served as a Research Engineer with the Laboratory of Advanced Concepts in Energy Conversion, Inc., a laboratory engaged in the research, development and demonstration of alkaline fuel cells and hydrogen storage methods.

**Tom Carter** has a bachelors and masters degree in mechanical engineering from Virginia Tech. He has worked 23 years for Michelin Americas Research Corporation including four years as a design engineer in Clermont-Ferrand, France, Michelin's international headquarters. His work experience includes tire testing, tire design, and business analyst for world wide testing.

**Ray Corbin**, president of AVL Powertrain Engineering, Inc., is responsible for the company's powertrain engineering consultancy activities and growth of the company's North American simulation software sales. Corbin is an active member of the Society of Automotive Engineers and the North American Defense Industry Association. Corbin holds a bachelor's degree from Kettering University (formerly General Motors Institute), Flint, Michigan, in mechanical engineering.

**Jack Dawson** manages Dana Corporation's Technology Resource Park in Ottawa Lake, Michigan, and is responsible for identifying and assessing emerging technologies that could disrupt Dana's current portfolio. Mr. Dawson is also responsible for the Dana India Technical Center, which is an engineering and IT organization supporting Dana globally. He has worked in the auto industry for more than 30 years in design and process engineering with General Motors, Ford, Volkswagen, and the Tier 1 supply base. He has a mechanical engineering degree from General Motors Institute (Kettering).

# CHALLENGE X JUDGES

**Don Hillebrand** has over 20 years of experience in automotive engineering, research management, and government affairs and was a senior policy advisor to the Executive Office of the President, White House Office of Science and Technology. He is the Vehicle Systems section leader at Argonne National Laboratory's Center for Transportation Research.

**Michael Iverson** has worked for Johnson Controls, Inc. (JCI) Automotive Group for over 14 years and has experience in a variety of advanced battery products. As the Manager of Applications Engineering for the JCS Advanced Battery Solutions group, he is currently working on OE hybrid and plug-in hybrid vehicle programs using JCS nickel-metal hydride and lithium-ion battery technologies.

**Robert Lawson** is a recent graduate of Clemson University with a Master's degree in Mechanical Engineering. At Clemson, his research was focused on vehicle dynamics and included modeling and simulation of tractor-trailer rollover and on-center handling for passenger cars. He is currently employed with Michelin where he works to design and develop innovative run-flat solutions. He is also responsible for designing the PAX assemblies, which were supplied to each of the Challenge X teams.

**Pete Maloney** is a Senior Consulting Team Leader at The MathWorks, where he provides engineering consulting services to automotive and aerospace customers to help them apply model-based design practices using MathWorks tools.

**Derek Matthews** was the founder and team captain of the McMaster Formula SAE team. He has worked with Ford of Canada, Ecostar, and DaimlerChrysler. He is currently the Customer Service & Application Engineering Manager for Ballard Power Systems.

**John M. Miller** is VP, advanced transportation applications for Maxwell Technologies, with primary responsibility for developing and promoting ultracapacitor-based solutions for the automotive and heavy vehicle industries. Previously, Mr. Miller spent 18 years with Ford Motor Company, where he led several automotive electronics and electric and hybrid drive train development programs, and has also worked as an automotive industry consultant, author, and guest lecturer. He holds 50 patents and has written more than 100 scientific and technical papers and three books, including *Hybrid Vehicle Propulsion Systems*. Mr. Miller holds a BS degree from the University of Arkansas, an MS degree from Southern Methodist University, and a doctorate. Mr. Miller will be the host and guest speaker at the Maxwell Technologies Challenge X Faculty Advisor Round Table on June 5, 2006.

**Larry Nitz** is the Executive Director of GM's Hybrid Powertrain engineering team. He is responsible for the engineering execution of GM's hybrid powertrains on a global basis.

**Ed Wall** is Program Manager of the FreedomCAR and Vehicle Technologies Program Office in DOE's Office of Energy Efficiency and Renewable Energy. He received a B.S. in Physics from Muhlenberg College and a Master's in Geology from the Johns Hopkins University.

**Nicholas Zielinski** is the Vehicle Chief Engineer for Advanced System Integration within the Advanced Vehicle Development Center of GM, where he is responsible for leadership of the vehicle integration and performance development of advanced propulsion systems, electronic controls, and by-wire systems prior to their implementation in volume production vehicles.

## Outreach Presentation

**Andrea Arnold** is Public Relations Manager for AVL North America, which offers combined solutions of powertrain engineering, simulation software and testing, and instrumentation systems. Prior to this, Arnold was a Senior Account Executive at Eisbrenner Public Relations. Arnold has a Bachelor of Arts degree in Communication from Michigan State University.

**Liz Callanan** is the Community Relations Manager for The MathWorks, leading partnerships with worldwide universities, aerospace and automotive companies, and engineering organizations. She has managed product marketing programs and public relations for The MathWorks.

**Betsy Creedon** is Director of Business Operations in GM's Law and Public Policy Group.

**Jane Dalziel** is the Director of Communications & Government Liaison of Hydrogenics Corporation. Since joining Hydrogenics in 2000, Jane has been evolving Hydrogenics' communications and government relations efforts to position the company as a recognized leader in hydrogen and fuel cell technology and products, and to advance the industry sector as a whole across a wide range of stakeholder audiences. Jane graduated from Queen's University in Kingston, Ontario, with a Bachelors Degree in Chemical Engineering.

**Matt Hartwig** has been the Communications Director for the RFA since October 2005. Prior to working at the RFA, he served as a communications aide to Senator Tom Harkin on the Senate Agriculture, Nutrition and Forestry Committee and as a spokesman with Consumers Union. Matt hails from Thornton, Iowa, and is a graduate of Iowa State University.

**Andy Mastronardi** is Global Director of the Freescale University Program. Prior to Freescale, Andy spent 26 years in the education industry, both as a teacher and in educational publishing.

**Roger Meyer** is the team lead in the Office of Communications and Outreach for DOE's Office of Energy Efficiency and Renewable Energy. Previously, he served as a press secretary on both the House and Senate sides of Capitol Hill.

**Lynda Palombo** is Chief, Office of Coordination and Technical Information for the CANMET Energy Technology Centre (CETC) of NRCAN. For more than 16 years, Lynda has been active in the marketing and promotion of efficient and alternative transportation technologies.

**Jenny Rios** is an account director with Strat@comm, a Washington, D.C.,-based public relations firm. She has a decade of public relations and strategic consulting experience, specializing in media relations, writing and editing, community outreach, grassroots mobilization, and special events work in the private and public arenas.

## Freescale Silicon on the Move Award

**Ted Bohn** is a Research Engineer for Argonne National Laboratory's Advanced Powertrain Facility. He has more than 20 years experience in electrical engineering in industrial and research environments, with an emphasis in power electronics, electric machines, and control systems. Ted has been involved in HEV-related design projects and student vehicle design competitions for more than 15 years. Ted has a MS in Electrical Engineering from the University of Wisconsin – Madison.

**Bruce Emaus** is the President of Vector CANtech, a company that specializes in development tools and embedded software components for automotive distributed applications. Mr. Emaus is also the chairman of the SAE Embedded Software Standards Committee and co-chair of the SAE Distributed Embedded Systems Engineering Task Force. With over 30 years of product development experience covering embedded software, electronics hardware, systems and information engineering, he is a leading expert in the area of distributed embedded systems and small area network protocols.

**Pete Savagian** is Engineering Director of Hybrid Powertrain Systems for GM Powertrain. His group is responsible for hybrid powertrain architecture development and control, analysis, and simulation.

**Ron Stence** has more than 25 years of professional experience and holds nine U.S. patents in microprocessor architectures and systems. He is currently in the Microcontroller Division of Freescale's Transportation & Standard Products Group, working in a variety of embedded processor areas for the automotive industry.

**Rich Swartzel**, Director of Business Development for MotoTron, has a BSEE and MSEE and is a licensed engineer in the State of Ohio. Rich worked for General Motors 10 years and has spent the last 12 years in the embedded controls business developing solutions for the production implementation of model-based software, including the current MotoTron MotoHawk platform.

## National Instruments Most Innovative Use of Virtual Instrumentation Award

**Rodney Cummings** graduated with a bachelor's degree in Computer Science from the University of Texas in 1990. Since that time, he has worked at National Instruments as a software architect and group manager on a variety of communications products spanning a variety of markets, including test instrumentation, industrial I/O and motion, telecom, and automotive. In recent years, Rodney has focused on National Instruments products for automotive communications, including CAN, GMLAN, FlexRay, and LIN.

**Eric Gassenfeit** is the Information Officer for GM Powertrain Product Development, where he has global responsibility for all IT systems, applications, infrastructure, and support services used in powertrain product development.

**Becky Linton** is a Field Sales Engineer for National Instruments in the state of Michigan. She works with all academic accounts in the state as well as General Motors and other automotive manufacturers. Becky started her career at NI in 2004 as a member of the Engineering Leadership Program. Becky is a member of IEEE and received a bachelors of science in electrical engineering from Kettering University, formerly GMI Engineering & Management Institute.

**Jeff Meisel** is the NI Sponsor for the ChallengeX program and Product Marketing Engineer for LabVIEW Real-Time and Embedded. Jeff started his career at NI in 2004 as a member of the Engineering Leadership Program. Jeff is an active member of IEEE and holds a bachelors of science in computer engineering from Kansas State University.

## The MathWorks Crossover to Model-Based Design Award

**Craig Borghesani** has over 17 years of MATLAB experience. He ran his own consulting company specializing in MATLAB and Simulink development for 10 years. Some of his past customers include GM, Pratt & Whitney, and Otis Elevator. He joined the MathWorks in 2004 as an Application Engineer after moving to San Diego.

**Jon Friedman** is the Automotive Industry Marketing Manager at The MathWorks, leading the marketing effort to foster industry adoption of The MathWorks' tools and Model-Based Design. Previously, Jon held various positions at Ford, including software development research, product development, and Electrical Engineering Supervisor. Jon has also worked as an Independent Consultant for Delphi, General Motors, Chrysler, and the Armaments Command. Jon holds a B.S.E., M.S.E., and Ph.D. in Aerospace Engineering as well as an MBA—all from the University of Michigan.

**Robin Lo** is an Energy and Drive Quality Performance Engineer in GM's Hybrid Integration Group, where he works on the Saturn Vue Green Line hybrid. In this role, he has been integral in ensuring that this vehicle met its targets for fuel economy and vehicle performance. Robin also serves as the Lead Engineer for the Energy Hybrid Expert Team at GM.

**Paul Smith** is the Manager of North American Consulting at The MathWorks. His background includes serving as an automotive powertrain control design engineer at Ford Motor Company and as a nuclear propulsion officer in the U.S. Navy.

## Outstanding Faculty Advisor

**Connie Bezanson** manages DOE's Advanced Vehicle Competition activities within the FreedomCAR and Vehicle Technologies Program Office. She received a B.S. in Mechanical Engineering from The Catholic University of America.

**Forrest Jehlik** (See bio on page 24)

**Bob Larsen** is a Senior Technical Advisor at Argonne National Laboratory. Bob initiated the Advanced Vehicle Technology Competition program in 1989 and was instrumental in the development of the Challenge X competition.

**Cindy Svestka** is an Energy and Drive Quality Performance Engineer in GM's Hybrid Integration Group, where she is responsible for meeting fuel economy vehicle performance targets through testing, development, and integration of a future hybrid application. She also serves as the GM Technical Lead for Challenge X and was active in student vehicle competitions when she was in college.