

Distinguished Business Analytics Speaker Events

Vehicle Content Optimization at GM: 2022 INFORMS Edelman Competition Finalist

General Motors (GM) vehicles have more than 100 customer-facing features, known as vehicle content. Decisions about how to package and price these features have a significant impact on customers' experiences and on GM's business results. Awarded as a 2022 INFORMS Edelman Competition Finalist, Vehicle content optimization (VCO) combines customer market research, discrete choice models, and custom multi-objective nonlinear optimization algorithms to optimize vehicle contenting and pricing. As of 2021, VCO has been used on over 85 vehicle programs globally. GM Finance verified that VCO enabled \$4.4 billion of incremental life-cycle profit, making it a vastly impactful example of operations research and applied analytics.

Speakers

Jonathan H. Owen, Ph.D., CAP®

Jon Owen has served as director of GM's Advanced Analytics Center of Expertise (AACE) in the Chief Data and Analytics Office (CDAO) since January 1, 2019. He also serves as Chief Scientist for OR/MS and Analytics at GM since being named to the role in 2017.

Jon began his career at GM in 1999 as a member of the research staff in R&D and Strategic Planning. He advanced through several roles, attaining the rank of Technical Fellow, GM's highest technical classification, before being promoted to an executive position. He earned a BS degree from the University of North Carolina, MS and Ph.D. degrees from Northwestern University, and is a graduate of Harvard Business School's General Management Program.

Jon's contributions have been recognized by GM's highest internal awards, as well as external awards from IISE, SME, and INFORMS. He is a recipient of Northwestern University's IE/MS Distinguished Alumni Award and was inducted as an INFORMS Fellow in 2018. Jon has also served as an invited delegate to the Royal Academy of Engineering's Global Grand Challenges Summit, as well as the National Academy of Engineering's Japan-America and US Frontiers of Engineering Symposiums.

Peiling Wu-Smith, Ph.D.

Peiling Wu-Smith is currently a manager and Technical Fellow in the AACE, focusing on applying operations research and advanced analytics to GM's enterprise-wide business. Peiling is a three-time winner of GM's highest technical award (Boss Kettering award), which honors "outstanding inventions and innovations which have provided identifiable and substantial benefit to General Motors." She is a recipient of the Women of Color STEM Technology Rising Star Award and Asian American Most Promising Engineer of the Year (2016) Award. Peiling received her Ph.D. in Industrial Engineering and Operations Research from Lehigh University, MS in Systems and Control from Southeast University (China), and BS in Applied Mathematics from East China Institute of Technology.

Peiling is an active member of the INFORMS and served as a GM representative for the INFORMS Roundtable, a judge for the INFORMS Revenue Management Prize, and a member of the INFORMS Nominating Committee, the INFORMS Prize Selection Committee, and the Franz Edelman Award Finalist Selection Committee.

Philip T. Keenan, Ph.D.

Philip T. Keenan, Ph.D., is Principal Technical Fellow in the AACE. Formerly a management consultant with McKinsey, Phil was also Senior Technical Director of GM Strategic Initiatives from 2000 to 2009 and Principal Researcher at GM Research and Development from 2009 to 2016.

Phil has a Ph.D. in Mathematics from the University of Chicago and an undergraduate Math degree from MIT. He held a National Science Foundation post-doc fellowship at Rice University, taught at the University of Texas in Austin, and published peer-reviewed academic papers and articles in the business press.

Phil specializes in using mathematical models to improve business decision making. At McKinsey, his clients spanned industries as diverse as pharmaceuticals and financial services. At GM, he has collaborated with various functions, including engineering, marketing, finance, and human resources. Phil currently provides technical leadership for various consumer choice modeling projects, including Vehicle Content Optimization and Battery Electric Vehicle Forecasting. He is a five-time winner of GM's Boss Kettering award.

Kathryn Schumacher, Ph.D.

Kathryn Schumacher is Staff Researcher in the AACE. Kathryn earned her MS and Ph.D. in Industrial and Operations Engineering at the University of Michigan in 2011 and 2014, respectively. She has a BS in Chemical Engineering from MIT.

Kathryn's work at GM focuses on using discrete choice models to improve decision making. She has led projects on optimizing vehicle prices and incentives and using AI for choice modeling. She has five inventions recognized as GM Trade Secrets. She is a two-time winner of GM's Boss Kettering award.

Wednesday, October 5, 2022, Eastern Time, 4:00 pm - 5:00 pm

Zoom Webinar

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