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**University of Michigan North Campus Research Complex
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SPEAKER BIOS

KEYNOTE SPEAKER

Julie Beth Zimmerman, PhD – Yale University

Associate Professor of Green Engineering
School of Engineering and Applied Science
School of Forestry and Environmental Studies
Acting Director for Center for Green Chemistry and Green Engineering

Dr. Julie Beth Zimmerman's research interests include green chemistry and engineering, systems dynamics modeling of natural and engineered water systems, environmentally benign design and manufacturing, the fate and impacts of anthropogenic compounds in the environment as well as appropriate water treatment technologies for the developing world. She also conducts research on corporate environmental behavior and governance interventions to enhance the integration of sustainability in industry and academia. Dr. Zimmerman previously served as an Engineer in the Office of Research and Development at the United States Environmental Protection Agency where she managed grants to academia and small businesses in the areas of pollution prevention and sustainability. She received a joint PhD from the University of Michigan in Environmental Engineering and Natural Resource Policy.

James M. Amrine, Jr., of Altair ProductDesign and ilumisys, is a graduate of the Sibley School of Mechanical and Aerospace Engineering at Cornell University. After earning a degree in Mechanical Engineering with a concentration in Automotive Design, he began work as a design engineer at Altair Engineering, Inc. in the fall of 1998. He has done work for automotive OEMs and Tier One suppliers in the design and release of suspension, body, and drivetrain systems. He has also worked on defense programs such as the Army FAST Semi-trailer. He was involved with the design of the Altair BUSolutions program to develop a low cost of ownership transit bus which would increase fuel efficiency while also reducing maintenance costs over the lifetime of the vehicle. He now serves as the Lead Design Engineer for Sustainability Programs for Altair and is working for Altair subsidiary ilumisys in conjunction with the National Center for Manufacturing Sciences to develop a public-domain guide for the sustainable design of LED lighting products.

Professor Bart M. Bartlett is an inorganic materials chemist who studies novel synthetic methods to prepare compositionally complex materials needed for technological applications such as solar energy conversion and electrical energy storage. He holds degrees in chemistry from Washington University in St. Louis (A.B., 2000) and the Massachusetts Institute of Technology (PhD, 2005), and did postdoctoral research at the University of California Berkeley before joining the faculty at the University of Michigan in July 2008.

Mr. John Bradburn is a Staff Environmental Engineer with GM's Real Estate and Facilities Group, Energy and Environment, Global Environmental Programs. He received a Master of Science degree in Hazardous Waste Management from Wayne State University in 1995, and a Bachelor of Science degree from Northern Michigan University. John also is a Certified Hazardous Materials Manager (CHMM). His current job responsibilities include implementing process and product technology improvements on a global basis that reduce environmental impacts and costs. These improvements include working with suppliers, product and manufacturing engineers as well as external stakeholder groups from a Design for the Environment (DfE) perspective to improve the global environment. John has been recognized by the Society of Automotive Engineers, Environmental Excellence in Transportation group, with four Environmental Excellence in Transportation awards for material development and usage as well as reuse and recycling projects. He has also received numerous GM internal environmental recognitions and is responsible for GMs Design for the Environment (DfE) activities, including the landfill free initiative. This program has resulted in over half of GMs global manufacturing operations (76) and eight non-manufacturing operations eliminating all manufacturing waste from entering landfills.

Dr. Paul Chalmer developed the coatings life-cycle assessment tool for the NCMS LCA-VOC collaborative research project, and is currently assisting in preparing the final deliverable from the project. Dr. Chalmer's approach to life-cycle assessment is based on experience in chemical process design and implementation in numerous collaborative projects carried out at NCMS (1991 – 2009), and in process control, environmental control technology and environmental remediation at the former Gelman Sciences facility in Ann Arbor, Michigan (1979 – 1990).

Mr. Scott Charon has a key role in Herman Miller's environmental leadership and drive toward sustainability. Since 2001, Scott has helped facilitate supply chain communications for the Design for the Environment (DfE) program. His efforts have influenced the implementation of DfE within Herman Miller and throughout the supply chain. He's worked closely with MBDC (McDonough Braungart Design Chemistry) to implement their Cradle-to-Cradle DesignSM Protocol at Herman Miller. Scott also leads Herman Miller's Advance Materials Consortium. Scott earned his undergraduate degree in Supply Chain Management from Michigan State University in 1990 and his MBA from Grand Valley State University in 2001. He is a U.S. Green Building Council LEED Accredited Professional and served on the U.S. Environmental Protection Agency's National Pollution Prevention and Toxics Advisory Committee (NPPTAC). He is married and is the father of three children.

Tom Czartoski is the founder of Solution Recovery Services (SRS), a leading provider of fluid management and fluid recycling services based in Dexter, Michigan. SRS provides contracted programs and equipment sales globally. The company has four locations and has grown from a small, two-man shop outside of Ann Arbor to an international, multi-location fluid purification and management leader. Tom is also the CEO of United Solutions, Inc (USI), SRS' holding company, with over 160 employees, \$50mm in sales and over 3000 clients and currently engaged as leader of USI's newest division, SRS Energy. SRS Energy is working on developing proprietary algae biomass metabolite fractionation technology with patent pending position. Tom has an extensive background in environmental sciences, industrial waste minimization and compound isolation techniques. He has a BS in Environmental Chemistry from the University of Findlay and a MS in Civil Engineering from Tufts University.

Dr. Rajan Eadara is currently the Vice President of Research and Development at DCT, Inc. He holds masters degree in Polymer Chemistry from the University of Aston, UK , and masters and PhD degrees in Polymer Science from the University of Detroit. He is conversant in polymeric materials design and development. He holds several patents in the subject with industry experience of over 30 years.

Mr. Jeff Gearhart has worked on issues related to chemical in products for two decades and is co-author of 10 previous studies on chemical hazards in a wide range of consumer products, including vehicles, building materials, electronics, toys and children's products. These widely cited studies have resulted in significant changes in both government and industry policy on heavy metals, sustainable plastics and overall sustainability of industry. Mr. Gearhart's work specializes in alternative painting technologies; hazardous additives in plastics; clean production, green chemistry and chemical alternatives assessment. He is currently a Visiting Scholar at the University of Michigan School of Public Health.

Mr. David Green is a dedicated eco-efficiency analyst in the Construction Chemicals Admixtures Systems business unit of the BASF Corporation. His scope of work includes life-cycle assessments, total cost of ownership, carbon foot prints, and eco-efficiency analysis for admixture products and processes in the support of sustainable construction using concrete. His background includes over 25 years of operations and manufacturing management experience in various industries including chemical recycling, steel production, fenestration, nylon casting, metal roll forming, and machine tool repair. He has also supported projects for LEED EBOM and NC certification. David has a BS in Mechanical Engineering and a Masters degree in Business Administration.

Mr. Eric Harrington is a chemical engineer, environmental engineer, and sustainability professional with thirty years of experience in areas ranging from nuclear weapons to textiles manufacturing. Most recently he was the Director of Manufacturing Sustainability for a major commercial U.S. textiles manufacturer, where he administered TerraCheck, a chemical hazard screening protocol for textile dyes and chemicals. Mr. Harrington is currently the program manager for green chemistry services at NSF International, the public health and safety company

in Ann Arbor, Michigan, where he is responsible for management and growth of the green chemistry program, including support for the U.S. EPA Design for Environment program, CleanGredients, the Green Screen, and others.

Carol J. Henry, PhD, D.A.B.T. is a Professorial Lecturer at the George Washington University School of Public Health and Health Services and a consultant to Society of Automotive Engineers (SAE) International. She advises organizations on issues in toxicology, risk assessment, public and environmental health, and sustainable green chemistry and engineering practices. She retired as Vice President, Industry Performance Programs at the American Chemistry Council in November 2007. She is Chair of the Federal Advisory Committee for the National Children's Study, Co-chair of the Montgomery County Maryland Water Quality Advisory Group, and Past-President of the Chemical Society of Washington of the American Chemical Society. She is a member of the Joint Committee on the ANSI NSF Green Chemistry Institute Greener Chemical Products and Processes Standard Initiative; the Board on Chemical Sciences and Technology of the National Research Council; the Environmental Health Perspectives Editorial Board; the American College of Toxicology, of which she was president; the Society of Toxicology; and the American Association for the Advancement of Science. Dr. Henry received her undergraduate degree in chemistry from the University of Minnesota and doctorate in microbiology from the University of Pittsburgh. She is a diplomate of the American Board of Toxicology, certified in general toxicology.

Dr. Pilar Herrera-Fierro has a BS, MSc in Chemical Engineering, and a PhD in Surface Chemistry from CWRU University in Cleveland, OH. She held a NRC fellowship at NASA Glenn Research Center where she worked for 10 years in the Tribology and Surface Science Branch later moved to Michigan and went to private industry where she worked in Solar and semiconductor technology. In 2007, Ms. Herrera-Fierro joined the staff of LNF at the University of Michigan. Her expertise is in semiconductor processing, surface science and electrochemistry.

Dr. Matthew D. Kleinhenz earned his MS and PhD degrees in Horticulture at the Ohio State University and University of Wisconsin-Madison, respectively. He joined the faculty in the Department of Horticulture and Crop Science at The Ohio State University-Ohio Agriculture Research and Development Center in 1998. Dr. Kleinhenz holds a 60-40 extension-research appointment focused on enhancing vegetable cropping systems design and implementation but he also contributes to the introduction of new commercial crops. It is this latter aspect of his work that he will outline today; specifically, Matt has been asked to summarize efforts to convert a naturally occurring plant into a foundational component of a global industry centered in North America.

Mr. Michael D. Knoblock, CHMM, spent the last year working for a Chemical Management Service Provider before starting his own consulting business. He is the former Manager of General Motor's Global Environmental Programs. His group was responsible for GM's worldwide Chemical and Resource Management programs, Design for the Environment, and global metrics programs. He has been a CHMM since 1995. During Mr. Knoblock's 30 plus year career at GM, he held numerous positions that gave him experience in a myriad of automotive manufacturing operations such as plating, assembly (painting), stamping and machining and at all levels from plant floor to

corporate-wide. He was on the ground floor of GM's development of their pioneering approaches to chemical and resource management in the 1980's, approaches with well-defined performance measures and immediate benefits. He has spent much of his career re-shaping and refining these mutually beneficial partnerships with the supply chain and getting their adoption worldwide. He has been a director and member of the Chemical Strategies Partnership's Chemicals Management Systems (CMS) Forum Committee, and participates in the Suppliers Partnership for the Environment. He has presented several papers at the CMS Forum, the Water Environment Conference, Society of Automotive Engineers, Lubrication World and the U.S. EPA's Resource Conservation Challenge National Meeting.

Mr. Thomas Laginess is currently employed by BASF Corporation as a Senior Sustainability Specialist, within the Product Stewardship group. Tom has worked for BASF for over 19 years and has spent most of his time in technical development within the automotive coatings group. Tom obtained a BS Degree in Polymers and Coatings Technology from Eastern Michigan University in 1991. Tom has been involved with Eco-Efficiency Analysis and Sustainability studies since 2000 and has had several of his technical development projects evaluated with the BASF methodology. In 2005, BASF was awarded the U.S. EPA Green Chemistry award for a UV curable Primer that was a technical project lead by Tom. The Sustainable analysis and the unique use of this product helped BASF win this award. For the past 2 years, Tom has been doing the Life Cycle Assessments, Total Cost of Ownership and Eco-Efficiency Studies for BASF. These studies along with SEEBalance make up the tools used by BASF for Sustainable Analysis.

Susan D. Landry received a Bachelor of Science in Polymer Science from the University of Southern Mississippi in 1984. She has worked for Albemarle Corporation for twenty-seven years. The majority of this time she was in the Flame Retardant Applications and Technical Service group, where her expertise was in styrenic resins, UV stability, recyclability, and experimental design. Her current position is Advocacy Advisor II, with focus in North America. In this position, Susan spends the bulk of her time providing information on products produced by Albemarle to a wide variety of stakeholders. Susan has served on an assessment panel in the Building & Fire Research Laboratory at the National Institute of Standards and Technology. She has presented numerous papers and presentations on flame retardants related to fire safety, regulatory, and recyclability. She recently authored a chapter (Changing Chemical Regulations and Demands) in the American Chemical Society Book entitled, "Fire Retardancy of Polymeric Materials, 2nd Edition." She has received 14 patents related to flame retardant products.

Mr. Robert Levine (Bobby) completed his B.A. in Molecular Biology & Biochemistry at Middlebury College in Vermont in 2008. Robert's undergraduate research focused on mitigating the impacts of climate change through novel approaches to integrate how society produces its energy and processes its wastes. Today, Robert is a PhD Candidate in Chemical Engineering at the University of Michigan. He continues to investigate the use of microalgae to produce biofuels, with a focus on the use of novel thermochemical processes to obviate biomass drying and solvent-based lipid extraction steps that have significantly hampered successful implementation of this promising concept.

Dr. Manish Mehta is Executive Director of Industry Forums & Sustainability at the National Center for Manufacturing Sciences (NCMS), a cross-industry R&D consortium based in Ann Arbor, Michigan. He leads the NCMS' strategic initiatives in green manufacturing, lightweighting, and sustainability standards development. He obtained a BS in Mechanical Engineering from Bangalore University, India, and MS and PhD degrees in Industrial Engineering from the University of Cincinnati. He completed the University of Michigan Stephen M. Ross Business School's Executive Program, specializing in technology strategy. He has over 60 publications, including authorship of three successive studies of nanotechnology commercialization trends in the US (2003, 2006, 2008), and a chapter in the Nanomanufacturing Handbook (Taylor & Francis, 2006). He served two terms as a member of the National Academy of Sciences Board on Manufacturing and Engineering Design (2002-2007). Dr. Mehta was Peer Review Director of Michigan's 21st Century Jobs Fund 2008 Business Plan Competition. He is a member of the 2011-12 ASM International Detroit Chapter Executive Committee, a Fellow of the Engineering Society of Detroit and also active in the Society of Manufacturing Engineers (SME Nanotech Forum), and Society of Automotive Engineers (Non-Ferrous Committee).

Mr. Ramani Narayan, a Distinguished Professor at Michigan State University in the Department of Chemical Engineering & Materials Science, has refereed 130 publications, 25 issued patents, and edited three books and one expert dossier in the area of bioplastics. He has served as Scientific Chair of the Biodegradable Products Institute (BPI), North America Director to Society of Plastic Engineers (SPE) Bioplastics special interest group (BioSIG), Board of Directors of ASTM

International Chairman committee on Environmentally Degradable Plastics and Biobased Products (D20.96), USA technical expert to ISO (International Standards Organization) TC 61 on Plastics, Chairman of ISO TC 61 SC 1 on Terminology, Convener of working group 7 of ISO TC 120 SC 4 on Packaging. Mr. Narayan has served on the Environment Board of Directors of Northern Technologies International (www.ntic.com) – a \$100 million NASDAQ publicly traded company Technical Advisory board of Tate & Lyle (www.tateandlyle.com)– a world leading manufacturer of renewable food and industrial ingredients, and has served on Coca Cola's Plant Bottle Advisory Board, is an ASTM Fellow and received award of merit University Distinguished Faculty Award, 2006, Withrow Distinguished Scholar award 2005; Fulbright Distinguished Lectureship Chair in Science & Technology Management & Commercialization Successful entrepreneur, and has commercialized several technologies.

Mr. Jim Pollack is an Environmental Management Consultant. Following his employment with Dow Corning Corporation, he joined Omni Tech International in Midland where he provides environmental, health and safety assessments and life cycle modeling services for biobased products. He was the Project Manager for a comprehensive study to update life cycle information on soybean production and soy feedstocks used in commercial products such as plastics, adhesives, coatings and biodiesel. This internationally peer reviewed study is unique in that it incorporated actual operating data for all life cycle phases and replaced previously used mathematical models and default data. He is currently serving as a consultant to the United Soybean Board Sustainable Initiative committee whose mission is to gather and share information on the sustainability of soybean production and products with interested parties worldwide. While

at Dow Corning, he participated in an initiative to develop a “life cycle and regulatory checklist” to aid product researchers and marketing people in commercializing new products. The purpose of this checklist was to identify and mitigate possible environmental, health and safety impacts at an early stage of development before manufacturing would begin. The checklist is still in use today.

Mr. David Randall is a Senior Environmental Engineer with General Motors Real Estate and Facilities Group, Energy and Environment, Air Compliance and Permitting. He received a Bachelor of Engineering in Environmental Engineering and a Bachelor of Science in Biology from Michigan Technological University. He has also received a Masters of Engineering from Purdue University and a Masters of Business Administration from Indiana University. David is a registered Professional Engineer (PE) in the State of Michigan and a Certified Hazardous Materials Manager (CHMM). David has held assignments in numerous automobile manufacturing facilities and managed a variety of environmental tasks. His current job responsibilities include providing air permitting and operational support to General Motors North American facilities. These activities involve preparing, negotiating, and implementing new air permits, as well as maintaining compliance with existing air permits. David is also responsible for interpreting new air regulations and developing implementation plans for General Motors facilities.

Dr. Dawn L. Shiang is an Associate Director for Sustainable Technologies at Dow, responsible for imbedding best sustainable practices into Dow’s global early stage R&D product development and research. She has held a variety of leadership roles across many of Dow’s business and corporate research teams, as well as diverse geographical experience including assignments in Europe and Asia. Her experience includes businesses and technologies such as Dow AgroSciences, Building Solutions, Plastics, Corporate Research, Epoxy and Specialty Chemicals. She has recently returned from Shanghai where she was part of the leadership team that established a world-class research capability. Dawn holds a bachelor’s degree in chemistry and a doctorate in organic chemistry from the University of Missouri-St. Louis and was a post-doctoral fellow in bio-organic chemistry at The Pennsylvania State University. She is a co-author of several publications and holder of five patents.

Mr. Sarang D. Supekar is a PhD Candidate in the Mechanical Engineering Department at the University of Michigan at Ann Arbor. He received his Master’s degree in Mechanical Engineering from the University of Florida with a concentration in manufacturing and design, and a Bachelor’s degree in Mechanical Engineering from the University of Pune, India. Before pursuing his graduate education, Mr. Supekar worked as an engineer in automotive manufacturing and steam generation-distribution equipment design. His current research is on understanding and modeling the cooling characteristics of supercritical carbon dioxide based metalworking fluids in macro- and micro-scale machining operations. His other research interests include using consequential life cycle assessment methodologies to evaluate and design policies for sustainability in manufacturing, greenhouse gas accounting strategies and social factors in sustainability. Mr. Supekar’s academic interests are in developing and teaching courses in environmental sustainability at undergraduate and K-12 levels. He has served as the Graduate Student Instructor for a graduate level course in sustainable design at the University of Michigan.

Mr. Reuben Tandoh is the Technical Director for Recycled Polymeric Materials, Inc. He holds a masters degree in the Economics of Polymer Chemistry from the University of Detroit Mercy, Polymer Institute. He has extensive knowledge in polymer formulations, processing, and new technology commercialization especially in thermoplastic, thermoset, and polyurethane chemistries. He has 15 years of industry experience.

Mr. Peter Valdez received his BS in Chemical Engineering in 2008 from the New Mexico Institute of Mining and Technology. He is currently pursuing his PhD in the same field at the University of Michigan. Mr. Valdez's graduate research focuses on the investigation of hydrothermal processes to convert biomass into liquid hydrocarbon fuels. Specifically, he is examining the hydrothermal liquefaction of microalgae to produce energy-dense biocrudes. His research includes identifying the significant processing parameters that affect the yield and composition of the microalgal biocrudes.

Stella Wixom, Director, UM Business Engagement Center, works as a direct liaison between the business community and the University of Michigan, identifying corporate partnership opportunities and matching University assets to industry needs. Before joining the Business Engagement Center, Stella was the national sales director for CFI Group, a customer and employee satisfaction research and consulting firm. Prior to CFI, Stella worked for Nortel Networks in a variety of senior management roles in marketing, sales and customer satisfaction. Stella also acted as a strategic university team leader and served as Nortel's corporate liaison to the University of Michigan. Stella is an alumna of the University of Michigan, where she received a B.A. in general studies with a focus on business and communications. She is originally from Ann Arbor but spent many years in Tennessee and North Carolina.