



system

DESIGN AND MANAGEMENT

2006 SDM Conference

SDM's 10th Anniversary!

"Designing Systems that Deliver Strategic Results"

Thanks to our Sponsors



United Technologies



October 19-20, 2006

at the

Broad Auditorium (Thurs.)

and the

MIT Faculty Club (Fri.)





2006 Alumni Conference Speaker Biographies (as of 9/21/06)

Thursday, October 19 th		Friday, October 20 th	
<i>System and Project Management</i>	<i>System and Software Engineering</i>	<i>System Architecture</i>	<i>Strategy</i>
Hau Tai-Tang <i>keynote</i>	Nancy Leveson	Mark Maier	John Sterman
Indra Purkayastha	Daniel Jackson	Ed Crawley	Hal Stillman
Michael Cusumano			

Hau Thai-Tang

Director of Advanced Product Creation and SVT, Ford Motor Company



Hau Thai-Tang is currently the Director of Advanced Product Creation and SVT. He formerly was the Chief Nameplate Engineer for the Mustang program. He has total operational responsibility for the Mustang business including the current model programs, and the new model programs.

Prior to his current appointment, Thai-Tang served as the Chief Engineer for Vehicle Engineering in Ford's North American Car, Lifestyle Vehicles organization. As Vehicle Engineering Chief, he oversaw the design and development of the Thunderbird, Mustang, and Windstar vehicle lines.

Thai-Tang served as the Vehicle Engineering Manager for the Mustang Vehicle Line from June 1999 to April 2001. He led the development and launch of the 2001 Mustang GT, V6, Cobra, and Bullitt models. In addition, Thai-Tang led the design of the all new, next generation Mustang replacement vehicle.

From March 1997 to June 1999 Thai-Tang served as the Vehicle Dynamics Supervisor and then the Vehicle Engineering Manager for the 2000 Lincoln LS program. Under his leadership, the LS earned Motor Trend Car of the Year award, Autoweek's Ten Best award, a Consumer Reports "Promising" rating, and was named the Best Driving Domestic Sedan by Road and Track magazine.

Thai-Tang's Ford experience also includes an international assignment in Cologne, Germany along with an assignment with Ford Racing as part of Ford's CART program. Thai-Tang served as a race engineer for the Newman-Haas Racing team during the 1993 season. He was responsible for the development of Nigel Mansell's and Mario Andretti's race cars. His efforts contributed to six race victories, eight pole positions, twelve podium finishes, and the overall driver's and manufacturer's championships.

Born in Saigon, Vietnam, Thai-Tang joined Ford as a Ford College Graduate Trainee in 1988. He received an MBA from the University of Michigan, Ann Arbor with distinction in 1993, and also holds a BS in Mechanical Engineering from Carnegie-Mellon University in Pittsburgh, Pennsylvania.

Indra Purkayastha

Product Development Manager, iRobot Corporation

Mr. Purkayastha joined the iRobot Home robots division in 2005 to lead its product development initiative and increase the capability of the technology team. Under his leadership, iRobot Corporation, in 2005, launched Scooba, the floor washing robot and the Scheduler version of the Roomba vacuuming robot. He comes to iRobot from 27 years at General Electric holding various technology roles in aerospace, industrial equipment and sensing technology. Mr. Purkayastha has been associated with new product development all his career, be it at the front end on the research side, on the design execution side of product development and launch or at the back end working with manufacturing and sales on a launched product. He holds a B.Tech EE from the Indian Institute of Technology, Kanpur, India and a MSEE from the University of Missouri, Columbia. A member of IEEE, Mr. Purkayastha has a few IEEE publications and holds a few patents.

Michael Cusumano

Sloan Management Review Distinguished Professor



Michael A. Cusumano is the Sloan Management Review Distinguished Professor at the Massachusetts Institute of Technology's Sloan School of Management. He specializes in strategy, product development, and entrepreneurship in the computer software industry, as well as automobiles and consumer electronics. He teaches courses on Strategic Management, Technological Innovation and Entrepreneurship, and The Software Business.

Professor Cusumano received a B.A. degree from Princeton in 1976 and a Ph.D. from Harvard in 1984. He completed a postdoctoral fellowship in Production and Operations Management at the Harvard Business School during 1984-86. He is fluent in Japanese and has lived and worked in Japan for seven years. He received two Fulbright Fellowships and a Japan Foundation Fellowship for studying at Tokyo University. He has been a visiting professor in management at Hitotsubashi University and Tokyo University in Japan and the University of St. Gallen in Switzerland, and a visiting professor in computer science at the University of Maryland. He has consulted for more than 50 major companies around the world. He has been a director of NuMega Technologies (sold to Compuware in 1998 for \$150 million) and Infinium Software (sold to SSA Global Technologies in 2002 for \$105 million), as well as other private and public software companies. He is currently a director of Patni Computer Systems (software outsourcing, based in India, NYSE PTI) and Coral Networks (synchronization and security software). He has been an advisor to numerous startup companies, including NetNumina Solutions (now part of Keane, Inc.), firstRain (wireless and web services software), H-5 Technologies (digital search technology), and Sigma Technology Group PLC (early stage ventures). He has also served as editor-in-chief and chairman of the *MIT Sloan Management Review* and writes periodically for *Communications of the ACM* as well as *The Wall Street Journal*, *Computerworld*, *The Washington Post*, and other publications.

Professor Cusumano has published eight books, and played a central role in the Microsoft anti-trust trial.

Nancy Leveson

Professor of Aeronautics and Astronautics and Engineering Systems at MIT



Nancy Leveson is Professor of Aeronautics and Astronautics Dept. and also Professor of Engineering Systems at MIT. She is a member of the National Academy of Engineering (NAE). Prof. Leveson conducts research on the topics of system safety, software safety, software and system engineering and human-computer interaction. In 1999, she received the ACM Allen Newell Award for outstanding computer science research and in 1995 the AIAA Information Systems Award for

"developing the field of software safety and for promoting responsible software and system engineering practices where life and property are at stake." In 2005 she received the ACM Sigsoft Outstanding Research Award. She has published over 200 research papers and is author of a book, "Safeware: System Safety and Computers" published by Addison-Wesley. She consults extensively in many industries on the ways to prevent accidents.

Daniel Jackson

Professor, Computer Science, MIT



Daniel Jackson is Professor of Computer Science at the Massachusetts Institute of Technology. He received an MA from Oxford University (1984) in Physics, and his SM (1988) and PhD (1992) from MIT in Computer Science. He was a software engineer for Logica UK Ltd. (1984-1986), and Assistant Professor of Computer Science at Carnegie Mellon University (1992-1997).

He has broad interests in many areas of software engineering, especially in specification and design, critical systems, formal methods, static analysis and model checking. He is currently chairing a National Academies study entitled "Sufficient Evidence? Building Certifiably Dependable Systems". His book, Software Abstractions, was published in March 2006 by MIT Press.

Mark Maier

Distinguished Engineer, The Aerospace Corporation



Dr. Mark W. Maier is a Distinguished Engineer at The Aerospace Corporation, a non-profit Federally Funded Research and Development Corporation with oversight responsibility for the National Security Space Program. At Aerospace he founded the systems architecting training program and applies architecting

methods to government and commercial clients, particularly in portfolios-of-systems and research and development problems. He received the BS and MS degrees from the California Institute of Technology and the Engineer and PhD degrees in Electrical Engineering from the University of Southern California. While at USC, he held a Hughes Aircraft Company Doctoral Fellowship, where he was also employed as a section head. Prior to coming to The Aerospace Corporation he was an Associate Professor of Electrical and Computer Engineering at the University of Alabama at Huntsville. Dr. Maier is co-author, with Dr. Eberhardt Rechtin, of *The Art of Systems Architecting*, Second Edition, CRC Press, the mostly widely used textbook on systems architecting, as well more than 50 papers on systems engineering, architecting, and sensor analysis.

Ed Crawley

Professor of Aeronautics and Astronautics and Engineering Systems at MIT

Co-Executive Director, Cambridge MIT Institute



Dr. Crawley received an SB (1976) and an SM (1978) in Aeronautics and Astronautics, and an ScD (1980) in Structural Dynamics from the Massachusetts Institute of Technology (MIT). He is currently Professor of Aeronautics and Astronautics and Engineering Systems at MIT, and a MacVicar Faculty Fellow. Dr. Crawley's current research interests include: the design of spacecraft and space systems; the development of intelligent structures with embedded actuators, sensors and processors;

the architecture of large engineering systems. He is the author of over 50 journal publications in the [AIAA Journal](#), the [ASME Journal](#), the [Journal of Composite Materials](#), and [Acta Astronautica](#). Dr. Crawley has served as the Chairman of the American Society of Mechanical Engineers (ASME), International Gas Turbine Institute (IGTI), Structures and Dynamics Technical Committee, and serves as Chairman of the Soaring Society of America (SSA) Structures and Materials Panel. He is a Fellow of the AIAA. In 1987, Dr. Crawley was an advisor to the National Academy of Engineering Committee on Space Station, and in 1993 was a member of the Presidential Advisory Committee on the Space Station Redesign. He is also a member of the NASA Technology and Commercialization Advisory Committee (TCAC). He is conversant in Russian, and has spent time as a visitor at the Moscow Aviation Institute and the Beijing Institute of Aeronautics and Astronautics. He was a finalist in the NASA Astronaut selection in 1980, is an active pilot, and was the 1990 and 1995 Northeast Regional Soaring champion.

John Sterman

*Jay W. Forrester Professor of Management and Engineering Systems at MIT
Director, MIT System Dynamics Group*



John D. Sterman is the Jay W. Forrester Professor of Management and Engineering Systems at MIT and Director of MIT's System Dynamics Group. His research includes systems thinking and organizational learning, computer simulation of corporate strategy, and the theory of nonlinear dynamics. He is the author of many scholarly and popular articles on the challenges and opportunities facing organizations today, including the book *Modeling for Organizational Learning*, and the award-winning textbook *Business Dynamics*.

Prof. Sterman's research centers on improving managerial decision making in complex systems. He has pioneered the development of "management flight simulators" of corporate and economic systems. These flight simulators are now used by corporations and universities around the world. His recent research ranges from the dynamics of organizational change and the implementation of sustainable improvement programs to experimental studies assessing public understanding of global climate change.

Prof. Sterman's work on management flight simulators was selected as one of the top 50 articles published in the first 50 years of the journal *Management Science*. He has twice been awarded the Jay W. Forrester Prize for the best published work in system dynamics, won a 2005 IBM Faculty Award, won the 2001 Accenture Award for the best paper of the year published in the *California Management Review* (with Nelson Repenning), has five times won awards for teaching excellence from the students of the Sloan School, and was named one of the Sloan School's "Outstanding Faculty" by the 2001 *Business Week Guide to the Best Business Schools*. He has been featured on public television's *News Hour*, National Public Radio's *Marketplace*, CBC television, *Fortune*, the *Financial Times*, *Business Week*, and other newspapers and journals for his research work and innovative use of interactive simulations in management education and corporate problem solving.

Hal Stillman

Director of Technology, International Copper Association



Hal is Director of Technology for the International Copper Association, where he leads research, development and commercialization initiatives aimed at creating new applications for copper; and he is also an advisor to SAS Investors, an early-stage venture capital fund. He began his career at General Electric; moved on to consulting on technology strategy and using entrepreneurial ventures to achieve business growth.

He received the Industrial Research Institute's highest achievement award in recognition of his accomplishments.

At ABB he held the positions of Senior Vice President, New Ventures and Senior Vice President, Technology and Innovation and was involved in many new product and new business development initiatives.

Hal has an undergraduate degree in Mechanical Engineering from New York University and pursued MBA studies at NYU's Stern School of Business.

We would like to thank our generous sponsors:



And, our SDM Conference 2006 Committee Members:

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and

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...whom without, this conference would not have been possible.

Thank you for attending SDM's Fall 2006 Conference!

**SDM Fall 06 BT, SDM 07 Open House & SDM Conference
October 16th - 20th, 2007**

	Monday Oct. 16th Faculty Club	Tuesday Oct. 17th Faculty Club	Wednesday Oct. 18th Faculty Club	Thursday Oct. 19th Area: System and Software Engineering Broad Institute 7 Cambridge Center (next to Legal Sea Food) & Hotel@MIT	Friday Oct. 20th Area: Strategy Faculty Club	
TIME						TIME
8:00 AM	Free Time 8:00 am - 11:30 am	Free Time 8:00 am - 12:00 pm	Free Time 8:00 am - 9:45 am	Continental Breakfast ! No Food/Beverages Allowed in Auditorium 8:00 am - 8:30 am	Continental Breakfast 8:00 am - 8:30 am	8:00 AM
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8:30 AM				8:30 AM		
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10:45 AM	Guillermo Aguirre "Evaluation of Technical Systems at the Design Stage" & Lunch Faculty Club Dining Room 5 & 6 11:30 am - 1:30 pm	SDM Council Pat's Office 11:00 am - 12:00 pm	SDM Program & January 07 "Boot Camp" Overview and FAQ 10:00 am - 11:45 am	Opening Remarks & Logistics 8:30 am - 8:45 am	Mark Maier Challenges for Architects: Technical and Otherwise 8:30 am - 9:30 am	8:45 AM
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