

2009 CAST DIVISION AWARD WINNERS

Computing in Chemical Engineering Award

Dr. Venkat Venkatasubramanian

Purdue University



Professor Venkat Venkatasubramanian is a Professor of Chemical Engineering and a Professor of Industrial and Physical Pharmacy (by courtesy) at Purdue University. He earned his Ph. D. in Chemical Engineering (with a Minor in Theoretical Physics) from Cornell University in 1984, M.S. in Theoretical Physics from Vanderbilt University in 1979, and B. Tech. in Chemical Engineering from the University of Madras, India, in 1977. Venkat worked as a Research Associate in Artificial Intelligence in the School of Computer Science at Carnegie-Mellon University and taught at Columbia University before joining Purdue in 1988. Prof. Venkatasubramanian's research contributions have been in the areas of process fault diagnosis and abnormal events management, risk identification and management in complex engineered systems, pharmaceutical engineering and informatics, molecular products engineering, and complex adaptive systems using knowledge-based systems, neural networks, genetic algorithms, mathematical programming and statistical approaches. Prof. Venkatasubramanian has published over 165 refereed papers, and delivered over 125 invited lectures and seminars, including fifteen keynote/plenary lectures, at various international conferences and institutions all over the world. He has co-authored/co-edited five books. He leads the informatics and cyberinfrastructure research efforts in pharmaceutical engineering at Purdue and the Integrated Systems Science Thrust in the NSF ERC on Structured Organic Particulate Systems.

Venkat is equally dedicated to teaching, and has received the *Norris Shreve Award for Outstanding Teaching in Chemical Engineering* in 1993, 2004 and 2006, and the *Teaching for Tomorrow Award* in 2004, both awarded by Purdue University. In 2007, Venkat was recognized for his outstanding teaching contributions as the only faculty member in the College of Engineering to be elected as a *Fellow of the Teaching Academy* at Purdue University.

He serves on the Editorial Board of *Computers and Chemical Engineering* and is the Associate Editor for Cyberinfrastructure, Informatics, and Intelligent Systems area. His co-authored paper on fault diagnosis was awarded the *CAST Directors' Award for the Best Poster Presentation* at the 2000 AIChE Annual meeting in Los Angeles. Venkat and his students were awarded the *Best Paper Prize for 2002-05* from the *Journal of Engineering Applications of Artificial Intelligence*, sponsored by the *International Federation of Automatic Control (IFAC)*, for a paper on abnormal events detection and process risk management. Venkat and his students were awarded the *Best Paper Prize* for 2006 from *Computers and Chemical Engineering* for their paper on Ontological Informatics. He is a co-recipient of the *Team Research Excellence Award* from the

College of Engineering, Purdue University, in 2007, for his contributions to the development of the Discovery Informatics framework for molecular products design. His other interests include comparative theology, Indian classical music, and cricket.

W. David Smith, Jr. Graduate Publication Award
Dr. Eric Haseltine
Vertex Pharmaceuticals



Eric Haseltine started his studies in chemical engineering at Clemson University, where he obtained a B.S. degree. He then pursued graduate studies in chemical engineering at the University of Wisconsin-Madison under the direction of James B. Rawlings. His research during graduate school included forays into nonlinear state estimation, stochastic chemical kinetics, and multi-level models of viral infections (in collaboration with John Yin). Next, Dr. Haseltine joined the

lab of Frances H. Arnold at the California Institute of Technology as a postdoctoral fellow in the field of synthetic biology. There he used both experiments and mathematical modeling to understand the influence of network architecture on cell-cell communication.

Currently he is a research scientist at Vertex Pharmaceuticals in Cambridge, MA where he is using mathematical modeling to aid in the understanding and treatment of human disease. The academic wanderings of Dr. Haseltine were graciously subsidized by research fellowships from the National Science Foundation (undergraduate and graduate), the Computation and Informatics in Biology and Medicine training program at UW-Madison, the Center for Biological Circuit Design at Caltech, and the National Institutes of Health (Ruth L. Kirschstein postdoctoral fellowship).

David Himmelblau Award for Innovations in Computer-Based Chemical Engineering Education

Dr. Daniel Lewin

The Technion, Israel Institute of Technology



Prof. Daniel R. Lewin holds the Churchill Family Chair at the Faculty of Chemical Engineering at Technion. He is the co-author of the book, *Product and Process Design Principles*, published by John Wiley and Sons, whose third edition appeared in 2008, which is now the most widely-used teaching text in chemical process design in the USA. Daniel has been consistently active in continuing the development of his courseware, which promotes student awareness and competence in all aspects of Process Systems Engineering. He has twice received Muriel and David Jacknow Awards, as well as the Weissman Award for his innovative teaching methods. Apart from his above-average teaching load, he currently also serves as the Assistant to the Technion Senior Vice President for the Promotion of Teaching at the Technion.

Computing Practice Award

Dr. Brian Froisy

ASPEN Tech



Brian Froisy has over 35 years experience developing process control systems technology and products, including their implementation in a broad range of process industries. His degrees in Chemical Engineering are from LSU, including a PhD in 1971. He developed and deployed computer-based control systems in the sheet processing industries (paper, rubber, plastics, and metals) and has implemented advanced applications in many refining and chemical processes. He was the lead business and technology developer for refinery FCC units and was technically and commercially responsible for Setpoint's SMCA multivariable control product. As principal technologist and technology director at AspenTech, he led a major development for a new class of multivariable controllers. Dr. Froisy retired from AspenTech in 2008.

CAST Outstanding Young Researcher Award
Dr. Yiannis Kaznessis
University of Minnesota



Prof. Yiannis Kaznessis received the diploma in chemical engineering from the Aristotle University in Thessaloniki, Greece, and the PhD degree in chemical engineering from the University of Notre Dame, working with Ed Maginn and Davide Hill. Thereafter, he completed postdoctoral research at Pfizer Global Research and Development, Ann Arbor, Michigan, and at the University of Michigan, with Ron Larson and Sangtae Kim.

In 2001, Kaznessis joined the faculty in the Department of Chemical Engineering and Materials Science at the University of Minnesota as an assistant professor. He was promoted to associate professor in 2007. He also directs the University of Minnesota Bioinformatics Summer Institute.

His research interests focus on computer modeling of biological matter, synthetic biology, and statistical mechanical modeling of biomolecular recognition phenomena. He has authored and co-authored more than 50 refereed papers.

Kaznessis is the recipient of several awards and recognitions including the Fulbright Award, the US National Science Foundation CAREER Award, the 3M non-Tenured Faculty Award, and the IBM Young Faculty Award.