

## Young Investigator Award



**Professor Jian Cao**

*Department of Mechanical  
Engineering  
Northwestern University*

**Professor Jian Cao** has been with Northwestern University since she received her Ph.D. degree in solid mechanics from M.I.T. in 1995. She received her M.S. degree from M.I.T. in 1992 and the dual B.S. degrees in Materials Engineering and Automatic Control from Shanghai JiaoTong University in 1985. She is now an associate professor in the Department of Mechanical Engineering. During her tenure at Northwestern, she took a one-year leave at General Motors in 1996 and a two-year leave at the National Science Foundation in 2004 and 2005 as a program director. Prof. Cao's primary interests are in the mechanics analysis and design of macro/micro metal forming and composite sheet forming processes. Her research contributions toward the understanding of material instability in the deformation process have advanced the predictability of numerical simulations and have been implemented in engineering practice. Her research also includes the creation of intelligent process design algorithms that consider process variations and utilize real-time sensors as well as the development of efficient simulation tools. Recently, she has published work on the size effect in material deformation and friction behavior in microforming processes.

Professor Cao has approached her research in manufacturing based on an overarching link between solid mechanics and intelligent control. The work has earned her many honors and awards. Prof. Cao is a recipient of the General Electric Foundation Professorship, the ALCOA Foundation Award, the National Science Foundation CAREER Award, the Society of Automotive Engineers (SAE) Ralph R. Teetor Educational Award, the Society of Manufacturing Engineers (SME) Outstanding Young Manufacturing Engineer Award, and the Young Investigator Award from the Japan-US Flexible Automation. She is an associate editor for the ASME Journal of Manufacturing Science and Engineering and the ASME Journal of Applied Mechanics. She is a member of the executive committee of ASME Manufacturing Engineering Division, an executive board member of SME North America Manufacturing Research Institute, and a member of the Scientific Board of European Scientific Association for Material Forming. She was the Chair of Materials Processing Committee of the ASME Applied Mechanics Division.

*The Young Investigator Award is a special achievement award for young investigators in Applied Mechanics.*