Dana Meadows Award Presentation 2009

R. Joel Rahn, Co-ordinator of the Dana Meadows Award Committee

The Dana Meadows Award is given for the best paper, ***by a student***, presented at the Annual Conference. The Award was first presented at the Atlanta Conference, in 2001, to honor the life and work of Dana Meadows, who died in February of that year, after a long and brilliant career in education and research focussed on a systems approach to social and environmental issues. From her contributions to *Limits to Growth* to her later writings in *The Global Citizen*, Dana was an inspiration to generations of students and researchers in system dynamics.

The Award is instituted by the Society to bring recognition to the very best student work and thereby, to inspire students to contribute to the growing body of theory and applications of system dynamics-inspiration that Dana demonstrated throughout her career.

The Dana Meadows Award is funded through an endowment established by the Society, initially by a generous donation from Jane and Allen Boorstein to found the Award in 2001, and by many subsequent donors whose support the Society gratefully acknowledges.

Currently, the winner receives a cash prize of $500 as well as conference registration and a travel stipend. The members of the selection committee for the 2009 Award are Erich Zahn, John Sterman, Krystyna Stave, John Morecroft, Richard Dudley, and Joel Rahn.

I will start with presenting the Honorable Mention Awards for 2009.
The Honorable Mentions in the Dana Meadows Award competition for 2009, in alphabetical order, are:

Howard Hao-Chun Chuang at the Department of Information and Operations Management, Mays Business School, Texas A&M University for the paper "Team Psychological Safety and Group Learning: Cycle-Time Reduction for IT-enabled Collaborative Product Development".

This study presents a system dynamics analysis of IT-enabled Collaborative Product Development (CPD) in a manufacturer-supplier context. The system dynamics inquiry helps inter-organizational project teams understand how cognitive and social factors including team psychological safety, level of collaboration, and group learning, rather than technical factors such as the deployment of collaboration software, affect the development time. Simulation results show that higher level of team psychological safety and collaboration contributes to the cycle-time reduction and facilitates group learning.

Margaret Stringfellow at M.I.T., for the paper "Healthcare Industry Incentive Structures Pressure System Operators to Operate in a High-risk State."

This paper addresses the operation of hospitals to meet cost-of-care increases that have

forced hospitals to find alternative revenue sources. The model represents a current policy of expanding the ad hoc patient referral base and thus overloading the operation schedules without a corresponding increase in resources to treat the increased patient load thereby exposing the patient to greatly increased risk of an adverse event. Changes by third-party payers have attempted to address this issue by denying coverage of adverse event treatment. The policy is examined along with alternative solutions that seek to align the incentives of insurance companies, hospitals and surgeons in an effort to decrease the cost of care and to encourage the low-risk operation of hospitals.

Out of the 29 student papers submitted for this year's awards, these were regarded as very good papers and worthy contributions to system dynamics. The authors are to be congratulated for their efforts and their success in analyzing and providing insight into significant dynamic issues.

This year's winner of the Dana Meadows Student Award for the best student paper presented at the annual conference is: **Timothy Taylor** at the Construction Engineering and Management Program, Zachry Department of Civil Engineering, Texas A&M University, for the paper "Science, engineering, and technology in the policy process for natural systems."

This paper develops an ambitious model with a very broad boundary to model the interaction of environmental problems, societal risk perception, scientific knowledge of the biogeochemical processes involved in the issue, the development of technical knowledge for mitigation, and the implementation of policies to mitigate the problem. A formal SD model is developed and calibrated against the case of the destruction of stratospheric ozone by CFCs and related chemical species. The strength of the model is the very broad boundary, encompassing biogeochemical, social, and technical factors. The model sectors are based on established work in diverse literatures, including risk perception, knowledge development, atmospheric chemistry.

A model incorporating such a broad range of expertise inevitably draws comment from experts in the various disciplines it touches and such was the case for this paper. Nevertheless, the Award Committee considered this paper to be an fine contribution meeting the objectives and the high standards of the Dana Meadows Award.