

Industrial & Systems Engineering Seminar

Wednesday, March 9

3:15 PM – Refreshments before the seminar

3:30 PM – Graduate Seminar

Mechanical Engineering Room 4125 A & B



Innovative Aisle Configurations for Unit-Load Warehouses

Professor Russell D. Meller

Professor

Department of Industrial Engineering
University of Arkansas

Unit-load warehouses are used to store items---typically pallets---that can be stowed or retrieved in a single trip. In the traditional, ubiquitous design, storage racks are arranged to create parallel picking aisles, which force workers to travel rectilinear distances to picking locations. We consider the problem of arranging aisles in new ways to reduce the cost of travel for a single-command cycle within these warehouses. Our models produce alternative designs with piecewise diagonal cross aisles, and with picking aisles that are not parallel. One of the designs promises to reduce the expected distance that workers travel by more than 20 percent for warehouses of reasonable size. We report on the expected performance of these designs under various warehouse configurations and operating policies, as well as relate experiences from the implementation of these designs.

BIO: Dr. Russell D. Meller serves on the faculty at the University of Arkansas, teaching in the Department of Industrial Engineering. He previously served on the faculties at Virginia Tech and Auburn University. He proudly holds the James and Marie Hefley Professorship in Logistics and Entrepreneurship. He received his B.S.E., M.S.E., and Ph.D. in Industrial and Operations Engineering from the University of Michigan. He currently serves as Director of the Center for Excellence in Logistics and Distribution. (CELDi; a National Science Foundation Industry/University Cooperative Research Center with over \$5M in research expenditures in 2010). He served as the innagural Deputy Director of the Center on Innovation in Healthcare Logistics (CIHL), which was formed in collaboration with Wal-Mart Stores, Inc. and BlueCross BlueShield with \$2M. An additional \$1M has been obtained from VHA, Inc., as well as smaller contributions from other organizations.

Dr. Meller's research interests are in the area of facility logistics, logistics at the facility level, which includes automated material handling systems and facilities planning. He has published his research in leading journals, with over 100 total research articles published to date. He is an award-winning researcher and teacher and his research has been supported by over fifty grants from government agencies (including seven from NSF) and companies in many industries.

FOR MORE INFORMATION ON PROFESSOR MELLER'S RESEARCH, please visit:
<http://faculty.ineg.uark.edu/rmeller/web/home.html>