

Mechanical Engineering Department Seminar

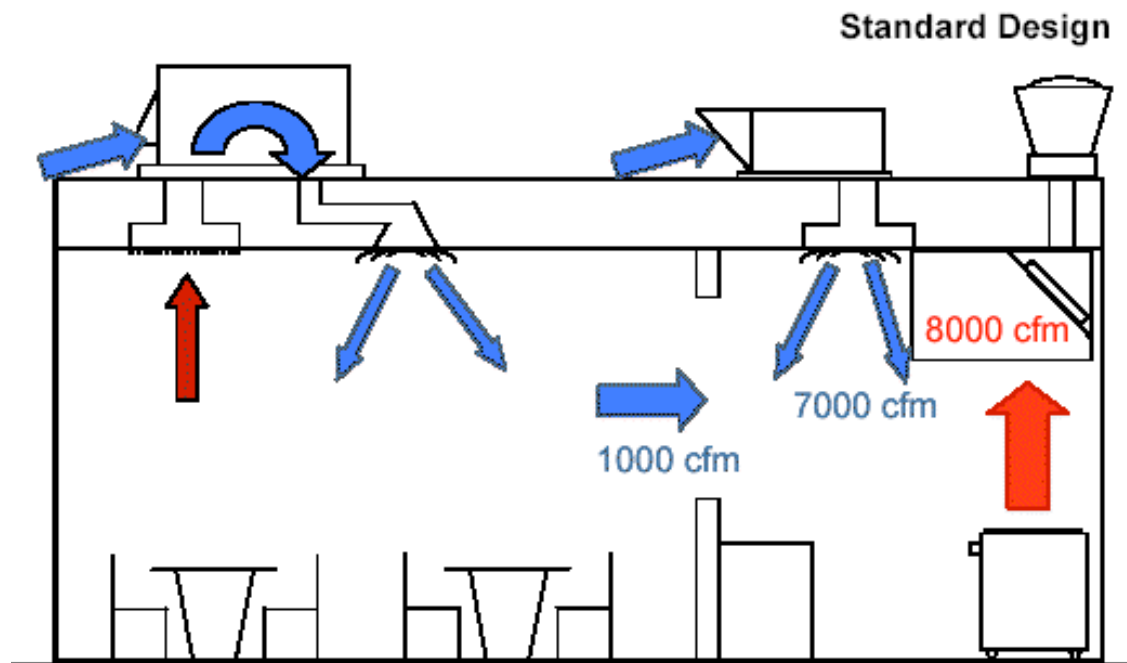
3:30pm September 16, 2009
1130 Mechanical Engineering



Engineers in the Kitchen

Thomas H. Kuehn, P.E.

Approximately 1 million food service facilities operate in the U.S. including restaurants, school kitchens, hotel kitchens, and sports facilities such as the new TCF Bank Stadium. The industry employs over 13 million workers and is the largest private employment sector in the country. Sales revenue in 2008 is estimated at \$558 billion with a total GDP of \$1.5 trillion. Despite the significance of this sector, few technical advances were made until the mid 1990's when a significant number of companies began to join a Commercial Kitchen Ventilation committee sponsored by ASHRAE (American Society of Heating, Refrigerating and Air Conditioning Engineers) to sponsor pre-competitive research. The University of Minnesota has been receiving research contracts from ASHRAE, ad hoc groups, and individual companies over the past ten years. This presentation will provide an overview of technical issues, results of recent research activities, and challenges for future work. Results have been implemented through new emission regulations, changes in national building codes, improvements in kitchen appliance design, and development of standard methods of test.



Bio Professor Kuehn received all his post secondary education at the University of Minnesota. Following doctoral research in natural convection heat transfer, he spent seven years as a faculty member in the Mechanical Engineering Department at Iowa State University teaching and conducting research on building energy utilization. Upon returning to the University of Minnesota he expanded his research activities into indoor air quality to include particulate air filtration and bio-aerosols. He also leads the current research activity in the commercial kitchen area.