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# UTILIZING SYSTEMS THINKING AND CONCEPT MAPPING TO IDENTIFY INTERDISCIPLINARY RESEARCH OPPORTUNITIES: CONSIDERING THE EFFECTS OF LIGHT ON MEAT PRODUCTS

HEBERT, PAULETTE R. & ET AL  
OKLAHOMA STATE UNIVERSITY  
DEPARTMENT OF DESIGN HOUSING AND MERCHANDISING

Dr. Paulette R. Hebert

Dr. Mihyun Kang

Dr. Gregory Clare

Dr. Hannah Lee

Dr. Yeasun Chung

Dr. Lisa Slevitch

Dr. Jerrold Leong

Department of Design Housing and Merchandising

Oklahoma State University.

### **Utilizing Systems Thinking and Concept Mapping to Identify Interdisciplinary Research Opportunities: Considering the Effects of Light on Meat Products**

#### **Synopsis:**

To seek opportunities for interdisciplinary collaboration, researchers collected information about current areas of interest and expertise from seven faculty members. Systems thinking becomes easier to visualize with the use of concept mapping techniques. Preliminary findings indicate research areas are clustered in (1) Health and Food Safety, (2) Consumer Behavior, (3) Sustainability, and (4) Lighting Application.

## **Utilizing Systems Thinking and concept mapping to identify interdisciplinary research opportunities: Considering the effects of light on meat products**

Abstract:

The use of Systems Thinking in planning research efforts has gained popularity. Synectics is defined as the development of creative solutions by collaborative partnerships which leverages the talents among diverse individuals. Mindmaps and concept maps are valuable tools for clearly defining the terms and goals of complex research agendas and problem solving strategies.

Systems Thinking has important characteristics: (1) global, (2) interdisciplinary, (3) concept of real-world phenomena as systems, and (4) importance of interrelationships and interactions. In the current project, the research team hypothesized that allied disciplines in the Human Sciences may contribute towards the formulation of novel research opportunities and partnerships. The ability to close the loops of interdisciplinary scientific practice by using diverse allied researchers who then create novel research solutions, requires linear, lateral and non-linear approaches to quantify relationships, knowledge and methods. Visual tools like concept maps help to simplify complex ideas and how each researcher's talents may relate to the problem being addressed. To seek opportunities for interdisciplinary collaboration, researchers collected information about current areas of interest and expertise from seven faculty members in the fields of (1) Hotel and Restaurant Administration, (2) Interior Design, and (3) Merchandising at a large university in the South Central U.S. Systems thinking becomes easier to visualize with the use of concept mapping techniques. Free-to-the-public concept mapping software, Visual Understanding Environment (VUE), was utilized to plot the subject areas. The software facilitated the development of research nodes, direct and indirect research relationships. These were reviewed and analyzed. Links were proposed, reviewed and edited by the research team. Topic clusters that appeared to have collaborative research potential, as determined by consensus, were identified. The preliminary findings of the study indicate research areas are clustered in (1) Health and Food Safety, (2) Consumer Behavior, (3) Sustainability, and (4) Lighting Application. The interrelationship among these may suggest the pursuit of collaborative research grants for future funding. Based on analysis of the commonalities and links amongst research areas, one high-potential interdisciplinary opportunity was identified; the study of light's effect on meat products. It was proposed the team could investigate consumer perceptions of food safety and willingness-to-buy when new-to-the-market lighting technologies, such as light emitting diodes (LED) and compact fluorescent lighting (CFL), are used in display cases at restaurants and grocery stores. A target funding source is the U.S. Department of Agriculture (USDA).