Keys to success for innovative ideation behavior: Ideation TRIO

Seda Yilmaz (ID), Stephen Gilbert (IMSE), Debra Satterfield (GD)
Need and Industrial Relevance

Research Thrust Area:
New Design Paradigms and Processes

“Innovation is more important than ever... That’s how we will ensure a high quality of life for this generation and future generations” Barack Obama, August 2009
Project Goals

- Investigate how different factors impact design ideation as individuals and teams

- Structure a new design framework supported with set of guidelines for the engineering faculty and practitioners
Objectives

- Gain fundamental knowledge about how these factors impact ideation
- Learn how to leverage these factors in supporting ideation flexibility
- Better prepare engineers to meet the needs of 21st Century Engineering
Approach and Methods

How are approach and outcomes in ideation related to cognitive style, problem framing, use of concept generation techniques, and interaction with others?

We will investigate the impact of these four factors on ideation in experimental studies with engineering and design college students, as well as practicing engineers and designers.
Approach and Methods

We will investigate these relationships in one experimental context.

- Pre-session: Everyone takes KAI
- Idea generation, individually - 15 min.
- Idea generation, with partners - 15 min.
- Idea generation, with Design Heuristics - 15 min.
- Selection of one idea for submission - 15 min.
Outcome/Deliverables

- Deeper understanding of how engineers approach design ideation
- New instructional techniques and a set of guidelines to promote ideation flexibility
Impact

- Significant contribution to successful design problem solving
- Students will be prepared for the challenges encountered by the differences in cognitive styles
- *Ideation TRIO* will be introduced to companies’ design departments as a series of ‘innovation workshops’
- New, empirically-driven set of guidelines applicable across design and engineering education and practice
# Project Duration & Proposed Budget

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<tr>
<th>Activity</th>
<th>2012</th>
<th>2013</th>
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<td>5/1-8/31</td>
<td>9/1-12/31</td>
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<td>Finalize IRB Approval</td>
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<td>Identify and recruit industry participants</td>
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<td>Develop and Pilot series of design problems for different cognitive styles</td>
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<td>Data Collection</td>
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<td>Data Analysis</td>
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<td>Dissemination of Ideation Trio</td>
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$42,000 for participant recruitment, graduate student for data collection and analysis, faculty time, travel to companies, publishing ideation trio