Dr. MacNeil & Dr. McInnis

Deliberation, Data, and Community-Driven Design
Co-Constructing Design Spaces through Community-Driven Design

Dr. Steve MacNeil
Postdoc, Design Lab
@stevemacn
Rock Climbing

Kentucky

North Carolina

Mount Fuji

Arkansas

Les Calanques
Cognition and collaboration are increasingly mediated by technology.
Technology helps us to understand behavior and cognition.
Technology is grounded in social and cognitive contexts.
Technology mediates the work of real people and communities
How might technology enable people to work together to solve the world’s hardest problems?
OPEN
NO BOUNDARIES

COMPLEX
MANY ELEMENTS AND RELATIONSHIPS

DYNAMIC
CHANGE OVER TIME

NETWORKED
ACROSS ORGANIZATIONS
Many Stakeholders

Diverse needs
Potentially conflicting
Can change over time

Power and interest levels
Vary by stakeholder group
Can change over time
What is a problem frame?
Framing matters!
What is a problem frame?
Vague idea of the problem

Different perspectives

Clear, succinct problem statement
Probs Libs creating and using problem templates

It was a ______, cold November day. I woke up to the ______ smell of ______ roasting in the ______ downstairs. I ______ down the stairs to see if I could ______ the dinner. My mom said, "See if ______ needs a fresh ______." So I ______ a tray of glasses full of ______ into the ______ room. When I got there, I ______ couldn't believe my ______! There were ______ ______ on the ______!


How might we help [user] accomplish [goal]

How might we [human-oriented problem to solve] through/by [big hunch about the innovation] so that [important outcome that will happen].
## Evaluating Problems: What is a good problem?

<table>
<thead>
<tr>
<th>Specificity</th>
<th>Generative-ness</th>
<th>Feasibility</th>
<th>Overall Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>How specific is this problem? Is there a clear starting point?</td>
<td>Open to brainstorming? Is it likely to generate many solutions?</td>
<td>Is this problem solvable? Is it likely to generate feasible solutions?</td>
<td>What is the overall quality of the problem frame?</td>
</tr>
<tr>
<td>Novelty</td>
<td>Resonance</td>
<td>Clarity</td>
<td>Components</td>
</tr>
<tr>
<td>Has this problem already been addressed?</td>
<td>Is the problem real and meaningful?</td>
<td>Does the problem make sense? Is it confusing?</td>
<td>Are constraints, or stakeholders clearly described?</td>
</tr>
<tr>
<td>Title</td>
<td>Author</td>
<td>Latest activity</td>
<td>Views</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-------------------</td>
<td>----------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Hand-written input for assignments and quizzes</td>
<td>EMILY SCHOCH</td>
<td>December 2, 2019 2:20:16 PM</td>
<td>4221</td>
</tr>
<tr>
<td>Delete quiz attempts</td>
<td>Eric Castro</td>
<td>December 2, 2019 2:15:02 PM</td>
<td>20690</td>
</tr>
<tr>
<td>Recurring Assignments</td>
<td>Shannon Brown</td>
<td>December 2, 2019 2:07:32 PM</td>
<td>4417</td>
</tr>
<tr>
<td>Marking all announcements read</td>
<td>Connor O</td>
<td>December 2, 2019 1:54:29 PM</td>
<td>1418</td>
</tr>
<tr>
<td>Improve administration of profile pictures</td>
<td>Donald Schumacher</td>
<td>December 2, 2019 1:51:03 PM</td>
<td>108</td>
</tr>
<tr>
<td>Email multiple classes at one time</td>
<td>Elizabeth Malatestinic</td>
<td>December 2, 2019 1:49:38 PM</td>
<td>9718</td>
</tr>
</tbody>
</table>
Hello, [A] We would like to request a feature that would allow a teacher to mute an assignment in Canvas without muting the feedback that comes from student peer reviews. [So] How things currently work: If you mute an assignment that has peer review enabled, the feedback from peer review will also be muted. [Si] This means that muting hides both grades from the teacher and feedback from other students. [Si] How things should work: It should be possible to, when muting an assignment, allow for feedback from peer reviews to remain visible while still hiding from students grades that the teacher may be working on. [So] Our reasoning: These are two separate concepts and should not be affected by the same feature. [P] It is very reasonable for a teacher to want to work on grades and keep this aspect muted at the same time that students provide and view feedback between each other. [Si] This feedback does not influence their grades. [Si] and therefore it should be possible to mute grades without muting feedback. [So] Thank you! [A]“
Graffiti Removal: At 9:53pm on Saturday 12/10/2016, we saw a man wearing jeans, dark long sleeved shirt, and a shirt wrapped around his head stop and tag "GSK" on a temporary street construction sign. We were unable to get a view of the front of this man's face. Taller (~5'10") and mid-weight. Was walking South down 6th Avenue. Was not able to see him after turning. The next morning (Sunday 12/11) on our walk through Balboa park, we noticed 15+ "gok" tags on trees, buildings, the bridge, electrical boxes, garbage cans. I took a selection of pictures, with the orange striped construction one being the one we saw the tagger doing.
Problem Mapping wikis and problem hierarchies

How might we help people move freely through our city?

As people are looking for a more efficient way to move around, the mission of reducing our emissions and increasing the inclusivity of transportation continues to be an essential topic of discussion in our urban environments. Mobility can be examined from a number of lenses such as motor vehicle systems, transit, parking, intermodal connections, electric vehicles, accident reduction, walkability and bike-ability, and land-use patterns.

Tier 3 Problems

There are many problems related to mobility, but these are the ones currently on our radar. Feel free to identify problems we’ve missed in the discussion below!

Last Mile: the last mile of a commute is the most dangerous, least energy-efficient, and
Problem Mapping

causal relationships
Email me your resume to get involved during the spring/summer

smacneil@ucsd.edu
**Creative Search** can search engines better support creativity?

Pre-Study Survey:
- Prior Domain Knowledge
- Search and Design Experience

Study Task (in-class/homework assignment)
- Choose 1 of 4 search prompts
- 30 min search session
- Write notes as you search

**Mobility Centers > Mobility Hub**
**Scooters > Micro-mobility options**