Advancing Collective Innovation
for business and civics

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UC San Diego’s Design Lab
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Galaxy Tutorial
Galaxy Analysis
Galaxy Zoo - Thank You
Show My Galaxies

Welcome to Galaxy Zoo's view of the Universe. If you're here you should already have seen the Tutorial, but feel free to go and remind yourself. There's no need to agonise for too long over any one image, just make your best guess in each case.
Several sheets are lining up in this protein, but one is out of place. Pull the misaligned sheet back in to form hydrogen bonds! Don’t forget you can control-click to lock, and use Shake and Wiggle.
Collective Innovation

How can we harness collective intelligence, energy, and creativity to innovate on complex problems?
Engaging communities in planning
PROGRAM COMMITTEE
~200 PEOPLE

AUTHORS
~1000 PEOPLE

ATTENDEES
~3500 PEOPLE
PROGRAM COMMITTEE
~200 PEOPLE

Paper List

Need your help:
- papers not in any valid sessions
- papers not in an approved session
- papers in < 2 approved sessions

Keyword: All (5)

Showing 5 papers
Show all papers
See all: authors abstracts keywords sessions

Test Paper 1: How to write a good paper
test001
John Smith, University of Testing
Jane Smith, University of Testing
Abstract: Abstract for test paper 1 goes here. crowdsourcing

My Workspace

Sessions in my workspace: 2

mysession
approve delete
Test Paper 1: How to write a good paper test001
Test Paper 2: How to write a good paper test002

better session
approve delete

Test Paper 2: How to write a good paper test002

makers: Anonymous
Your Paper: **Revising Learner Misconceptions Without Feedback: Prompting for Reflection on Anomalous Facts**

1. **Tell us your name:** (as it appears in the paper)

2. We’ve identified 10 papers that may be similar to yours. Tell us how they would fit in a session with your paper:

   - It's Creepy, But it Doesn't Bother Me
     - Great in same session
     - Okay in same session
     - Not sure if it should be in same session
     - Should not be in same session

   - Learning From the Crowd: Observational Learning in Crowdsourcing Communities
     - Great in same session
     - Okay in same session
     - Not sure if it should be in same session
     - Should not be in same session

   - Participatory Design through a Learning Science Lens
     - Great in same session
     - Okay in same session
     - Not sure if it should be in same session
     - Should not be in same session
Steven Dow and Narges Mahyar
Advancing Collective Innovation

projectCOBI.com

pre 2014 2014 -

UC San Diego
Deployments:

Conference on Computer-Human Interaction (CHI) 2013-2017
Conference on Computer-Supported Cooperative Work (CSCW) 2014-2015

Research papers:


Community Clustering: Leveraging an Academic Crowd To Form Coherent Conference Sessions, Paul André, Haoqi Zhang, Juho Kim, Lydia Chilton, Steven P. Dow and Rob Miller. AAAI Conference on Human Computation and Crowdsourcing, 2013. (Notable Paper Award)

Frenzy: Collaborative Data Organization for Creating Conference Sessions, Lydia Chilton, Juho Kim, Paul André, Felicia Cordeiro, James A. Landay, Daniel S. Weld, Steven P. Dow, Robert C. Miller, and Haoqi Zhang. CHI, 2014. (Honorable Mention Award)

Collaborators:
Collective Innovation

How can we harness collective intelligence, energy, and creativity to innovate on complex problems?
Engage crowds in ideation and synthesis


Obtain feedback from multiple stakeholders

Obtain feedback from multiple stakeholders

Probe the market to measure potential value
Probe the market to measure potential value.
COLLECTIVE INNOVATION FOR CIVICS
Many highway revolts (also freeway revolts, expressway revolts, road protests) took place in developed countries during the 1960s and 1970s, in response to plans for the construction of new freeways, a significant number of which were abandoned or significantly scaled back due to widespread public opposition; especially of those whose neighborhoods would be disrupted or displaced by the proposed freeways, and due to various other negative effects that freeways are known to cause.
VANCOUVER 1960’S FREEWAY PROTESTS
California State Route 480 was a state highway in San Francisco, California, United States, consisting of the elevated double-decker Embarcadero Freeway (also known as the Embarcadero Skyway), the partly elevated Doyle Drive approach to the Golden Gate Bridge and the proposed and unbuilt section in between. The unbuilt section from Doyle Drive to Van Ness Avenue was to have been called the Golden Gate Freeway and the Embarcadero Freeway as originally planned would have extended from Van Ness along the north side of Bay Street and then along the Embarcadero to the San Francisco-Oakland Bay Bridge.

The Embarcadero Freeway, which had only been constructed from Broadway along the Embarcadero to the Bay Bridge, was demolished after the 1989 Loma Prieta earthquake, and Doyle Drive is now part of U.S. Route 101. SR 480 was Interstate 480, an auxiliary route of the Interstate Highway System, from 1955 to 1965.[1][2] The entire route was deleted in 1991.[1]
APPROACHES FOR PUBLIC ENGAGEMENT

- Public workshops
- Town hall meetings
- Design Charrettes
WHAT ARE DESIGN CHARRETTES?
WHY DESIGN CHARRETTE ARE IMPORTANT?

- Diversity of viewpoints
- Discourse among stakeholders
- Buy-in for final solutions

UD CO-SPACES (URBAN DESIGN COLLABORATIVE SPACES)
UD CO-SPACES: TABLETOP AND HANDHELD DEVICES
UD CO-SPACES VIDEO
CURRENT VERSION: INTEGRATING INDIVIDUAL DISPLAYS
USER STUDY
WHAT DID WE LEARN?

a) engaging diverse stakeholders
b) fostering collaboration and co-creation
c) understanding consequences of their choices
"Having this tabletop got every stakeholder involved so they can make changes themselves, see those changes right away, [which] promotes collaboration"
DID THE TECHNOLOGY CATALYZE DISCUSSIONS?

“2D and 3D helped with dialogue”

3D is integral for engagement with the design process
DID THEY UNDERSTAND CONSEQUENCES OF THEIR DESIGNS?

“Having [indicators] and having that in real time definitely altered how we approached the project”
How might we apply such approaches at city scale?
“GET IT DONE” APP

REPORT NON-EMERGENCY PROBLEMS
MISSION VALLEY COMMUNITY SURVEY

Mission Valley Online Outreach

How do you get around Mission Valley?

BICYCLE OWNERSHIP

How many bicycles do you have in your household?

- None
- 1
- 2
- 3
- 4 or more

COMMUTE MODE

To where do you commute for work? If you commute to multiple locations, please select the main one.

- Within Mission Valley
- A community that neighbors Mission Valley (Linda Vista, Serra Mesa, Kearny Mesa, Tierrasanta, Navajo, College Area, Kensington-Talmadge, Normal Heights, Greater North park, Uptown, Old Town, Midtown/Pacific Highway)
- Within the City of San Diego, but beyond the neighboring communities listed in the previous option
- El Cajon
- National City
OTHER APPROACHES: IMAGINE BOSTON 2030
WHAT IS LACKING?

- How to identify and organize opinions and patterns of thoughts?
- How to deal with conflicts?
- How to enable citizens to generate alternative solutions?
NEED FINDING THROUGH INTRA-COMMUNITY INTERVIEWING
I’m a Young Techie. Here’s What San Diego Needs to Do to Keep Me.

THE GIST
Please don’t make me work in Sorrento Valley.

A view of the San Diego skyline
The Research Team

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Cognitive Science

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Eric Richards  
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Cognitive Science
Discussion

• How can we apply methods of collective innovation to business and civic practices?

• What resources does San Diego have to offer?

• What local issues can we tackle with our research?
THANK YOU

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@StevenDow
@NargesMahyar
“Enlightened trial and error succeeds over the planning of the lone genius.”

Peter Skillman, IDEO
Collective focus and flare

Buxton, 2007
Lasaeu, 1974
A simple model of iterative design

create a design

get feedback
A simple model of iterative design

create a design → get feedback

more complex
BACK UP SLIDES
WHY DESIGN CHARRETTES ARE HARD?

“AN IMPOSSIBLE PROBLEM IN AN ABSURDLY SHORT TIME”

Condon, 2007
CITIZEN INTELLIGENCE

- Cities are a powerhouse of collective intelligence. It is time to unlock the wisdom of the crowd.

- Collective intelligence platforms offer citizens the opportunity to engage in important civic discourse and develop solutions collaboratively.
HOW DESIGN CHARRETTERES ARE CARRIED OUT TODAY?

- Paper-based
  - Engaging, collaborative
  - No feedback on indicators
- Geographic info system
  - Expert intensive
  - Non-collaborative
WHAT ARE THE CHALLENGES FOR DESIGNING TOOL SUPPORT?

‣ Integrating data and visualizations of information
‣Employing interactive modes to engage people
‣Providing understandable yet credible information
‣Employing social and peer learning

(Sheppard, 2012; Moser, 2010; Holden 2008; Davis, 2008)
DEFINITIONS

- Indicators (sustainability metrics):
  - e.g. population density, percentage of walking trips
- Case: has information such as footprint, height, volume
  - e.g. buildings, streets, or parks.
- Task: Designing a neighborhood for maximum walkability
SEVEN PRINCIPLES FOR URBAN DESIGN CHARRETTE

1) Engagement
2) Collaboration
3) Interactive visualization
4) Accessibility
5) Iteration
6) Understanding consequences
7) Transparency
HOW MUCH ENGAGEMENT?

Increasing levels of engagement:

- **Empower:** make or delegate decisions about options
- **Collaborate:** participate in generating and testing options
- **Involve:** participate in defining options
- **Consult:** contribute, and learn about others’, feedback
- **Inform:** share information
VISUALIZATION DESIGN FOR PUBLIC ENGAGEMENT

- Infographics & donut charts based on domain experts’ suggestions
ROLE: SHARE THEIR THOUGHT PROCESS WITH OTHERS
There are a lot of details to consider when doing urban planning!

“The process helped understand city planning and its ramifications”
UD CO-SPACES: SPECIFICATIONS

- Projectors in Decision Theater (UBC, CIRS building):
  - Native Resolution: 1920x1200
  - Aspect ratio: 16:10 (WUXGA)
  - Image Size: 127-1524 cm
- Touch table: PQ labs touch interface
  - 52” HD TV
  - Resolution 1920 x 1080