Ideation Playbook

**Wed Sept 20th, Gund 121-123**
Goal

The goal of this session is to collectively generate and build on ideas for MahmMs, and form productive relations with possible team mates. Think of it as a series of speed dates for building creative networks.

Schedule

08.50–08.55: Lab safety, M. Borton (25’)

08.55–09.00: Intro (5’)

09.00–09.45: Round 1 (45’)

09.45–09.55: Break (10’)

09.55–10.40: Round 2 (45’)

10.40–11.00: Round 3 (20’)

11.00–11.30: Discussion (30’)

Ingredients

- 6 MeiMei stations with pin-up boards.
- 26 eager and brilliant participants
- 26 drawing sets, each including: one pad of large (11 x 11 inches) yellow post-it notes; two pads of small (3 x 3 inches) post-it notes (one white, one orange); some sharpsies.

Rounds

- You have been randomly assigned different MeiMei stations for each round (see table above). The people at your station are (mostly) different each time.
- The first two rounds consist of 15’ Individual Time and a 30’ Speed Date
- During Individual Time, work alone to generate three concepts (for the MeiMei
station you have been assigned to for that particular round) and document them on giant yellow post-it notes.

- During the **Speed Date**, everyone pins their concepts to the board. Each person quickly presents their ideas in turn. Then the group takes ~15’ to **Build** and **Pause** on the concepts.

- **Building** means refining, editing or adding to an idea; white post-it notes are used to document builds.

- **Pausing** means raising issues that might hinder, limit, or constrain the development of an idea; orange post-it notes are used to document **Pauses**.

- Concepts (on giant yellow post-it notes) are left behind as students change stations (so they accumulate over three rounds).

- Round 3 is shorter. There is no **Individual Time**. Instead, the **MeiMei Elephant** presents the ideas on the board to the incoming group; the job of the group is to **Build** and **Pause** on what is already there.

- The role of the **MeiMei Elephant** is to moderate and perform a memory function. They stay at the same station for all three rounds and connect what is being said to what has already been said. During **Individual Time**, they generate concepts, organize them, or document them digitally.

**Discussion**

- The entire class walks from board to board, spending 5 minutes at each station.

- **MeiMei Elephants** present an interesting idea or two, some precious learning, and one or two puzzling questions.

**After class**

- **MeiMei Elephants** create pdf montages of concepts (photos of post-it notes), and Sarah Norman uploads them to course website for everyone to see.

- Students have until the end of the day to register their preferences for MeiMei and team members using a private online poll.

- Final groupings are are issued on Friday by email and canvas (alongside assignments 1 and 2)

**Remember!**

- You are not your idea, and if you identify too closely with your idea, you’ll be quickly offended when questioned, causing counter productive tension. Plus: you may miss a gem in the fog of other peoples ideas.
W3. APPENDICES
CONTENTS

1. Preparation

2. Session in progress

3. Ideation results

4. Final groupings (social network analysis)
1. PREPARATION
Dear Matter Magicians,

If you left yesterday’s class feeling overstimulated and full of ideas and questions, it’s a sure sign you’re on the right course. Perhaps you even dreamt up something new after letting your mind wander later in the day (Christof et al. 2016).

The next two to three weeks are special. All your courses are still warming up, so you’re not yet locked into a grueling schedule of deadlines. Use this time to READ, READ, READ. Immerse yourself in new knowledge, make copious notes, formulate questions. Make creative connections and leave space for mind-wandering. Document ideas, but don’t become attached to the first few that come along. More will flow.

Next week’s class is important as it will set you on a trajectory, pushing other possibilities to the wayside. The goal is to generate and build on ideas collectively, while also forming productive relations with possible team mates. It pays to be prepared. Here are some things you could usefully do:

1. Take 20’ to write down the two or three MeiMei that interest you most. Articulate why in short, simple sentences. (Simple can be harder than complex. You have to work hard to get your thinking clean to make it simple)
2. Take 20’ to write down which two or three platform technologies interest you most, and why. Again, use short, simple sentences.
3. Screen the list of research labs in section 10 of the syllabus. Choose two or three examples. Write them down and explain why they stand out for you.
4. Consult the references in section 11 of the syllabus and make your own shortlist of relevant scientific articles. Reading the abstracts should provide enough information for now. Access the articles through Harvard Hollis. Use Zotero to start a bibliography (which you can share with team mates later).
5. Choose two or three articles from your bibliography and read them more than once.

You’ll know you’ve prepared well if you come to class with an open mind, brimming with ideas. Stay cool, be deliberate, try to not fixate. Remember: you are not your idea, and if you identify too closely with your idea, you’ll be quickly offended when questioned, causing counter productive tension. Plus: you may miss a gem in the fog of other peoples ideas.

Stay tuned for more information about the next class!

Sal, Joanna, Sarah.

Sept 14th 11.43 am

Dear phenomena orchestrators,

The ideation session is upon us. Here are some notices:

- Class will take place in Gund 121-123 (porticos). Get there early; there’s lots to do!
- Read the ideation playbook before class. Take note of your three station assignments (they were chosen randomly and have no bearing on your final MeiMei grouping)
- Stay alert and focused, be cool and generous, and, most importantly, have fun!
- Straight after class, you’ll receive an email with a link to an online poll where you can tell us -- in private -- which MeiMei you’d most like to work on, with whom, for the rest of the semester. Complete it by the end of the day and we’ll do our best to make everything fit!
- Final groupings (plus assignments 1 and 2) will be issued on Friday.

Yours eagerly,

Sal, Joanna, Sarah

Sept 19th 4.21 pm

Dear Ideators,

Great work today! Please declare your preferences for MeiMei and teammates by filling out this survey by the end of today. To help, here is a list of peoples names alongside their Harvard profile pictures.

Stay tuned: On Friday we will send you our curated list of groups and the briefs for assignments 1 and 2.

Sal, Joanna, Sarah

Sept 20th 3.46 pm
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2. SESSION IN PROGRESS
3. IDEATION RESULTS
ATMOSPHERIC PHENOMENA

AIR POLLUTION/FILTRATION & PUBLIC AWARENESS

AIR FILTRATION/POROUS WALLS

AIR FILTRATION/OBJECTS

ENERGY HARVESTING AS A WAY TO CONTROL AIR/WATER AND VICE VERSA

META-MATERIAL AND AIR REGULATION

SLIPS

SCIENTIFIC QUESTIONS/THOUGHTS

- HOW CAN POLLUTANTS BE FILTERED, ESPECIALLY ONES AT MICROSCOPIC SCALE?
- HOW CAN CLOUDS BE “DECONSTRUCTED”?
- HOW COULD MECHANICAL META-MATERIALS, FILTER AIR, THROUGH THE CONTRACTION OF PORES.
- GENERATE MAP COMPILATION WITH AIR POLLUTANTS
MeiMei02: Biological Phenomena

Bacteria, Algae, & Energy

Cold + Hair

Tactility/Physical Prop.

Filtering & Atmosphere

- Bacteria and algae as renewable energy sources
- Cold hair and its role in cooling the body
- Tactility and physical properties in human interaction
- Filtering and atmosphere concepts
Responsive Facade

- Optimizing vascular wall systems
  - Light absorption
  - Nano-Porous Building Material
  - Moisture Management

- Water-changing colors
  - 3D surface exterior tiles change opacity as sun moves across sky

- Interior Atmospheric Indicators
  - Body Heat, Plain, Loud Noise

Color/energy absorption

Can optimize for more of electromagnetic spectrum than visible

Maximize direction:
- Power
- Efficiency

PV cells

Hierarchy of abilities:

- N, M, A

How to activate?

Thermo color

One large tile/window

Exposure, shade, surface to direct play to moisture traps
- Mechanical
- Chemical

Cooling & energy absorption

Plants tried in double glazed windows

In shade
MeiMei4: Sensory & Media Phenomena

Human Centered

Built Environment
MeiMei 6: Thermal Phenomena

vascular surfaces
permeable walls

heat storage
insulation
threshold spaces

heating
biomass
geothermal

material durability
textiles
clothing
membranes

interactive shading
reactive surfaces

[Diagrams and notes related to thermal phenomena and materials]
4. FINAL GROUPINGS
(SOCIAL NETWORK ANALYSIS)
Arrange 25 class members into 6 braintrusts.

Find social and intellectual affinities.
SURVEY

“Fill out after Ideation Session”
https://goo.gl/forms/l3l7UoGGOhw3ZqbU2
STEP 1

- Plot data in a directed network graph.

- 1st preference = 3 arrows; 2nd preference = 2 arrows; 3rd preference = 1 arrow; no preference (people) = reciprocal arrows (i.e. since you are open minded, you are sure to like people who like you).
1. Atmospheric
2. Biological
3. Optical
4. Sensory & Media
5. Structural & Mechanical
6. Thermal
**STEP 2**

- Search algorithmically for communities of people and ideas (MeiMei)

- Algorithm finds communities with many edges joining vertices of the same community and comparatively few edges joining vertices of different communities.
**STEP 3**

- Start with four communities and manually move some ‘bridges’ around to make six balanced groups.
- ‘Bridges’ are people who are happy to move someplace and will be welcomed by someone in that group.
One nice outcome is that groupings naturally pair. Atoms/Bio, Mech/Sense, and Therm/Opti display a natural affinity, conceptually and socially. This is useful for the exchange of ideas and for upcoming brain-trust sessions.
## Final Groups!

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REMEMBER!

• You must work together as a group on one project.

• However, the project may have several aspects that need developing in sub groups.

• For example: different versions of one MahmM, different applications of one platform technology, or different responses to one problem.

• In other words, your group must define a common conceptual theme so that work and ideas can be shared effectively.
HighlightGraph[peoplemeimeipref, Subgraph[peoplemeimeipref, #] & /@ FindGraphCommunities[peoplemeimeipref], VertexLabels -> "Name", PlotTheme -> "Monochrome"]