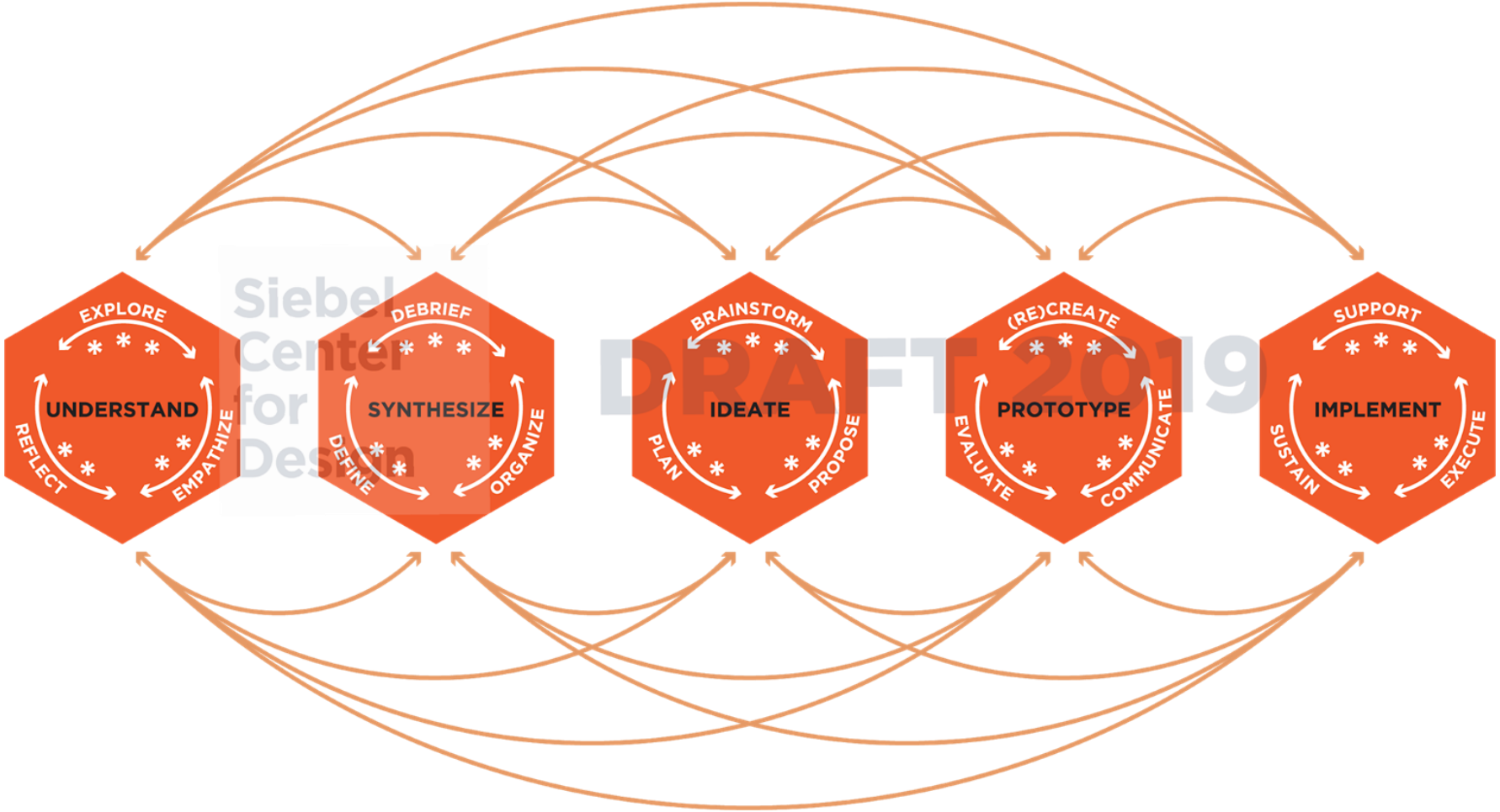
ME 170 Lab 3

How might we…?



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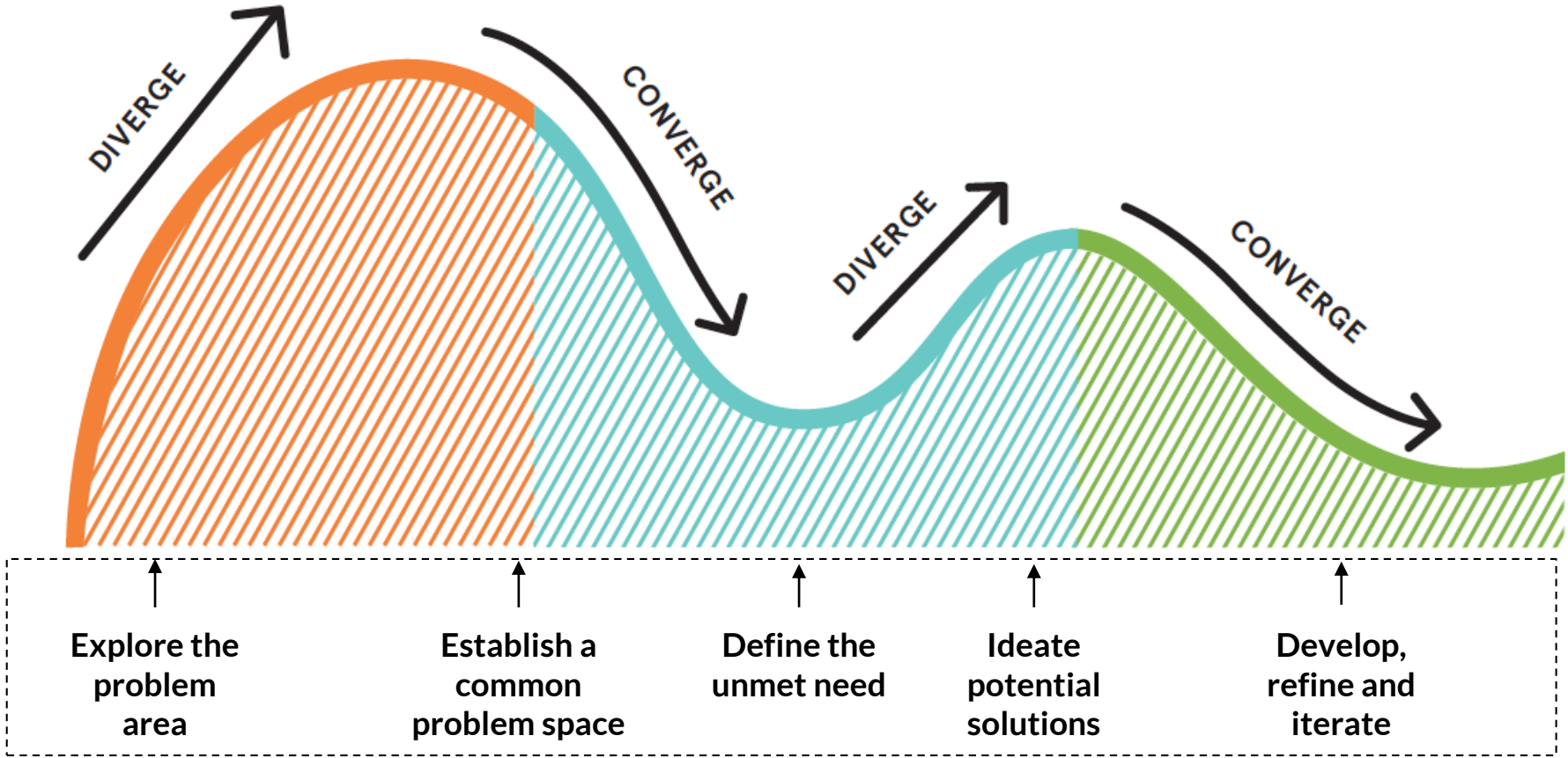


*Example does not represent all cases

INSPIRATION

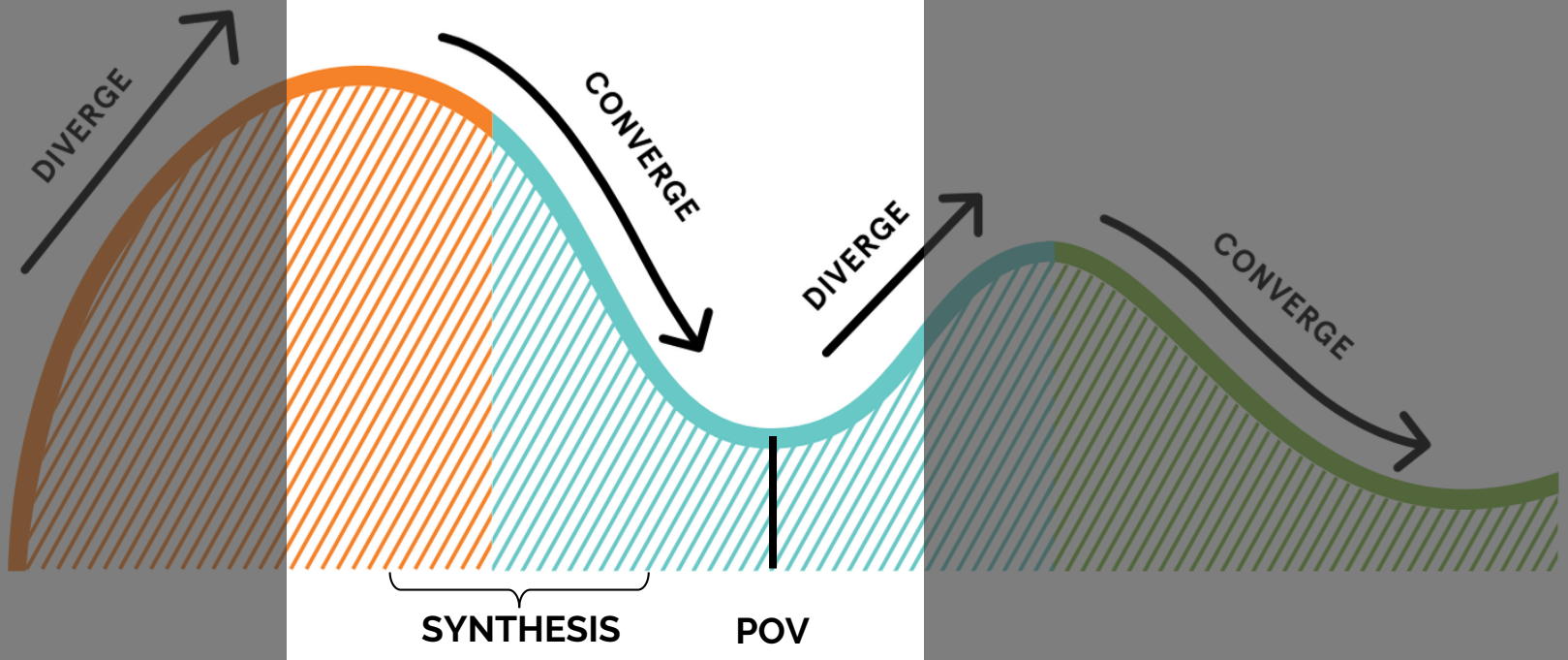
I have a design challenge.
How do I get started?
How do I conduct an interview?
How do I stay human-centered?

IDEATION

I have an opportunity for design.
How do I interpret what I've learned?
How do I turn my insights into tangible ideas?
How do I make a prototype?

IMPLEMENTATION

I have an innovative solution.
How do I make my concept real?
How do I assess if it's working?
How do I plan for sustainability?



Learning Objectives

After this lab you should be able to…

1. Write “point of view” statements to describe the project scope and motivate action
2. Formulate “how might we” questions to guide project ideation
3. Develop a plan to complete the project using human-centered design

Steps of Synthesis

1. Downloading interviews and observations
2. Identifying patterns and themes
3. Extracting key insights

[10 mins] Work with your team to Download + Synthesize findings from the new interview(s)

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Refine your understanding

Frame your current understanding of the problem using a "Point of view" statement.

"*User* needs *unmet need* because *surprising insight*"

[5 mins!]

Opportunity Areas and Ideation

Defining Opportunity Areas

- Not solution oriented
- Narrowing in on a specific moment or need
- This is an art not a science!
    - It’s best to start somewhere and iterate

“How might we…” Questions

- “How might we…” suggests that a solution is possible
- Offers you the chance to answer them in a variety of ways
- A properly framed How Might We doesn’t suggest a particular solution, but gives you the perfect frame for innovative thinking
- Useful at various points in the process, but should be carefully phrased to provide the correct scope

Creating Design Opportunities

Example Challenge: improving efficiency of dining halls

Potential HMWs:

This is where we started

- “HMW make dining halls more efficient?”
  - Too broad

This is solution-oriented

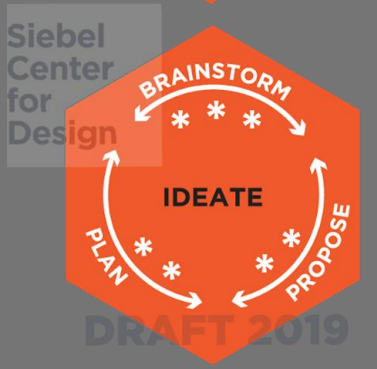
- “HMW create a dishwasher which cleans forks faster?”
  - Too narrow

This will prepare us for ideation

- “HMW make the downtime while waiting for food more useful?”
  - Just right!

How might we...?

1. Come up with at least 5 HMWs (5 per person).
2. Then discuss with your team. [10 mins]



Ideation session

Modified 6-3-5 method

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1. Choose 1 HMW each (4 per team)
2. Write it down on a post-it
3. Give 1 HMW question to each person
4. Sketch 3 concepts in response to this HMW [*5 mins*]
5. Rotate and repeat until finished

A team of 4 should have at least 12 sketches per HMW.
4 x 12 = 48 total concept sketches!

Traditional Numerical Decision Matrix

Most widely used and taught method for concept selection.

Ratings come from testing with users or predefined quantitative test metrics

These are your observations and insights! +Engineering Constraints

The importance (weight) of each requirement is informed by our empathetic understanding

	Weight Factor	Rating			Wtd. Rating		
		1	2	3…	1	2	3…
Aesthetics	5	4	3	2	20	15	10
Speed	3	3	1	2	9	3	6
Mfg. Cost	5	1	3	5	5	15	25
Weight	3	5	2	1	15	6	3
Size	2	3	4	2	6	8	4
Reliability	4	4	3	2	16	12	8
Totals					73	59	56

Concept #1 is selected

Document your work:

- 5 slides
- Tell us the story of how you got to now. Who are the main characters? What's the problem they are facing?

Required info:

- Initial interviews - Who? Why? Key findings?
- Follow up interview(s) - Who? Why? Key findings?
- "Point of view" Statement
- "How might we…" questions
- 5 different concept sketches - Explain how each concept addresses the unmet need.

Share your work:

- Name your team
- In Lab 5 each team will give a 5 min pitch/presentation
- All team members should present
- Send slides (.ppt/pptx) to your TA by noon on the day of Lab 5.

Ideate and planning

EXAMPLE
Story arc

Interviews	POV	HMW	Concepts	Concepts

Feedback

https://tinyurl.com/ME170-FA19