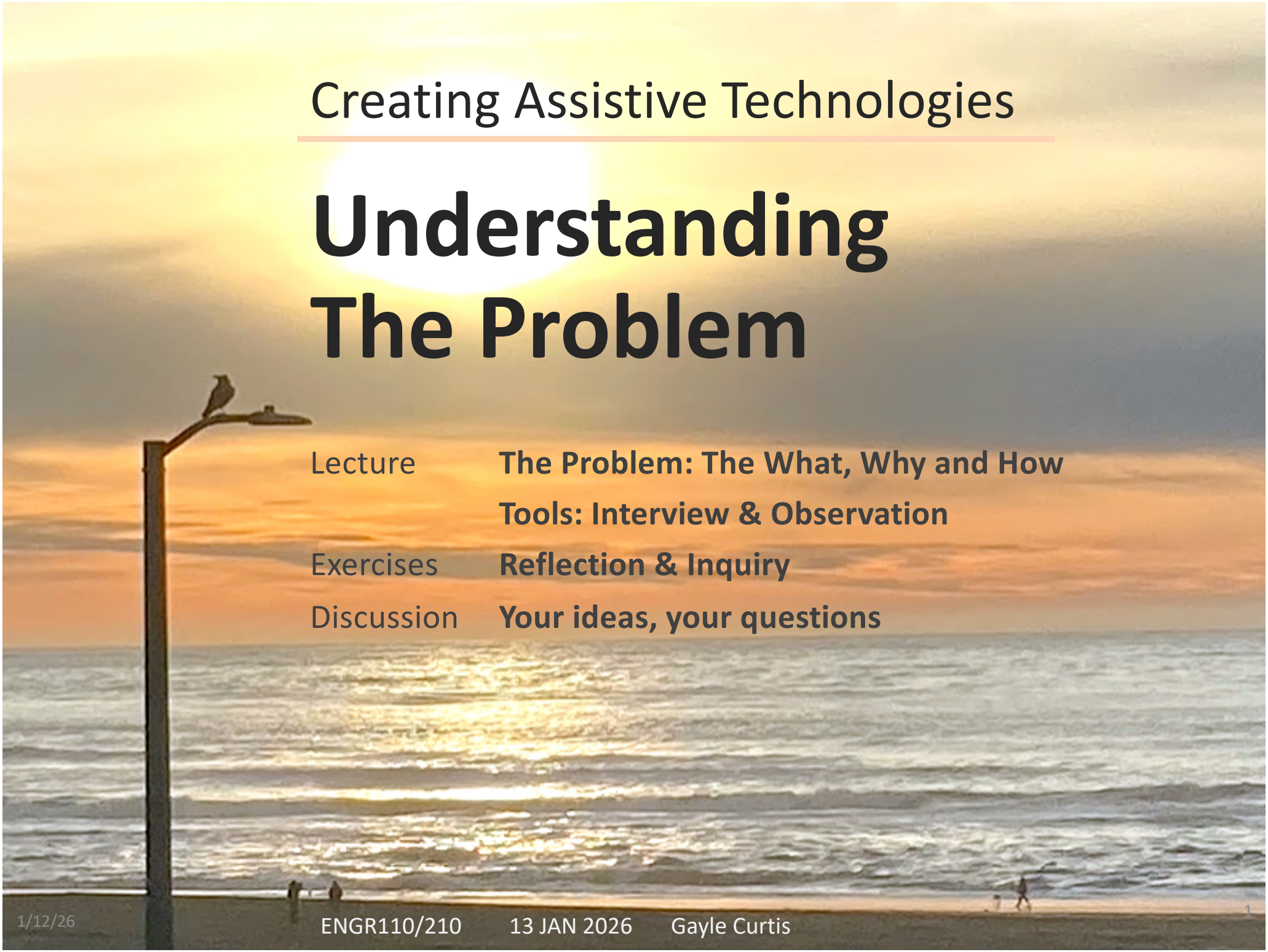


Creating Assistive Technologies

Understanding The Problem

Lecture	**The Problem: The What, Why and How**
	Tools: Interview & Observation
Exercises	**Reflection & Inquiry**
Discussion	**Your ideas, your questions**

Gayle Curtis



MS Engineering
Product Design – Stanford

Lecturer – SU
HCI Design Studio – CS247
Visual Thinking – ME101/313

Biomedical Engineer – VA Palo Alto

Information Architecture – vivid studios SF
Principal User Experience Designer – Yahoo!

Exercise – Reflect: How you got here today

Think about what it took for you to be here today –
From the time you woke up, or from your last class.

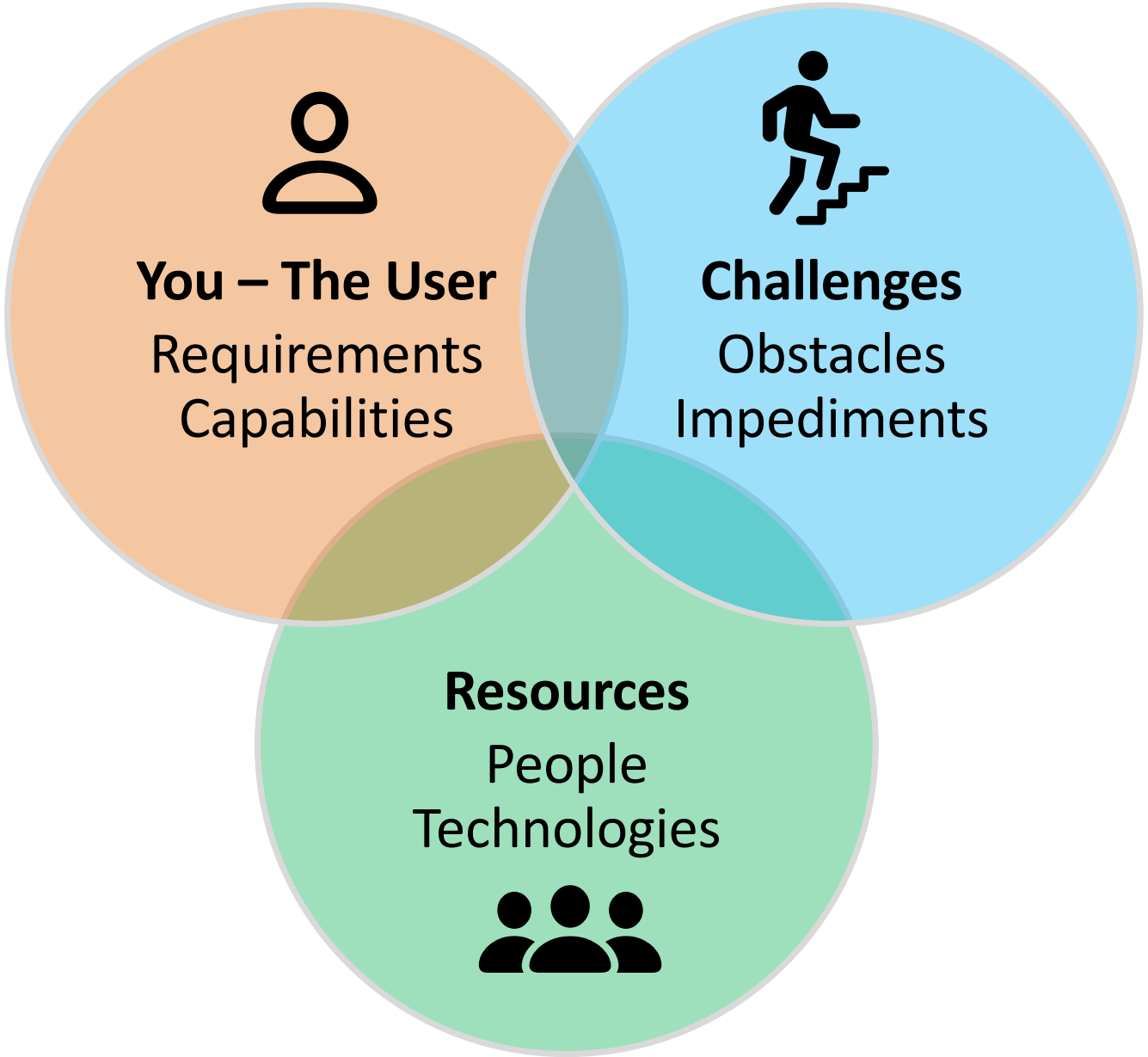
Make a list of ~10 things you had to do
The things you had to do in order to be here today …

Make note –

1. What things were important for your journey?
2. Why was it important to be done in that way?
3. Tools/enablers you used
4. Blocks/challenges you managed

5 min

Parts of the problem – Your viewpoint



Requirements, aspirations, desires – Needs



https://www.simplypsychology.org/maslow.html

What we want to learn about the challenge

Goals
What does the person want to do, have, or accomplish?

Values
What's important about what they want or the way they achieve it? What does it mean for them?

Capabilities
What resources, skills or abilities does the person have or bring to the situation?

Constraints
What kinds of obstacles, limitations, or deficits are at work in the situation?

How do we do it?

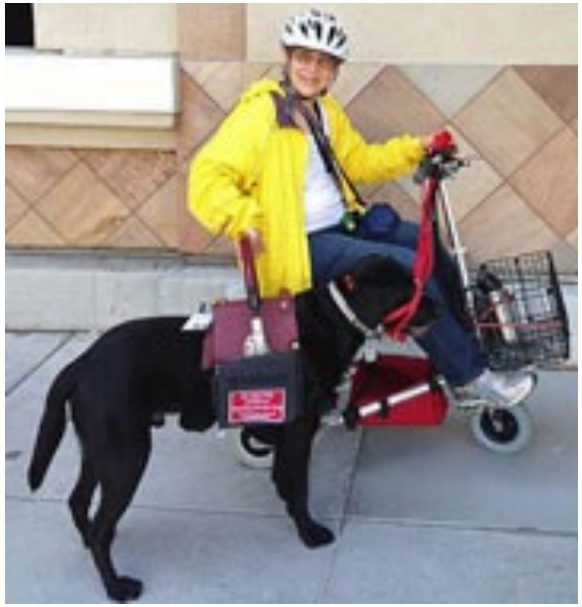
Interview – Talk to people

Observation – Watch their activity, in context

Prototype – Make something and see what they do with it







How do we do it?

Interview – Talk to people

Observation – Watch their activity, in context

Prototype – Make something and see what they do with it

Then what?

CRITICAL THINKING

Facts

Assumptions

Inferences

DESIGN THINKING

Ideate

Sketch

Prototype

Test & Analyze

Iterate

Interviewing

TIPS

Ask about goals & what's important

Avoid leading questions

Ask them to show as well as tell



\+ We get information directly from the person – the user

We get their perspective, how they feel about it

\- Time and skill intensive

Must be careful when generalizing

What people say is often different than what they do

Observing

TIPS

Observe *actual* activity

Approximate the design target

Immerse yourself in context

Shadow, record, review

Collect a rich description of the activity



Look for –

Resources used to accomplish

Hindrances that get in the way

SAMPLE PROJECT

Improved Pooper Scooper

Background:
The intended user is an older adult who relies on her powered wheelchair and service dog for mobility.

Problem:
Current products are bulky, difficult to operate, and are not designed for wheelchair users.

Aim:
Explore designs for a device that will allow a wheelchair user to effectively clean up after their service dog while remaining active in their community.

Design Criteria: [Requirements]

Compact to facilitate storage
Aesthetic design
Easy to retrieve and store
Integrated waste disposal bag
Easy to dispose bag
Easy to clean

Group exercise – How they got here today

Work with others at your table

One person volunteers to be ‘interviewee’

Class or community member

Ask about how *they* got here today

Activity | Materials | Gear | Challenges

See what you can learn about their:

Goals – why they wanted to be here – their purpose in coming

Values – what was important about the way they got here

Capabilities – what resources were available or used

Constraints – what blocks stood in the way

