

# Pictorial Personas: A Way to Look at Longitudinal Qualitative Data

Center for the Advancement  
of Engineering Education

## *Authors*

Holly Matusovich

Virginia Tech

Ruth Streveler

Purdue University

# Overview

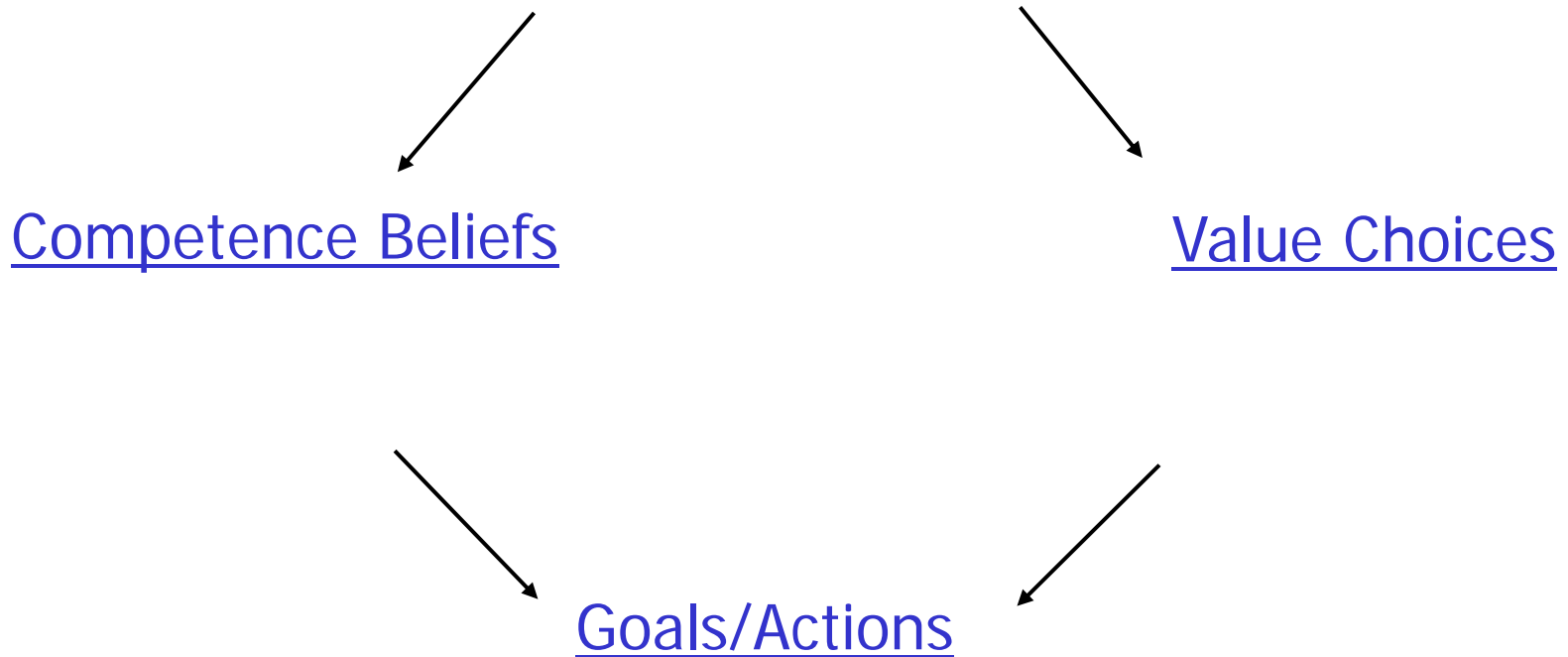
- Research Context
- Challenges with Methods
- Pictorial Personas
  - Development and Use
- Limitations

# Research Context

- Engineering Education
  - Persistence (women) important issue
  - How do students' beliefs about being engineers shape their choices to pursue engineering degrees?
- Eccles' Expectancy-Value Framework
- Existing multi-method, multi-institutional database

# Framework-Simplified View

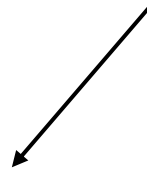
Identity



# Research Questions

## Identity

What are students' self-perceptions of being engineers in the future? How do they change with time?

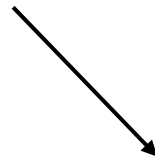


## Competence Beliefs

What are they? How do they change with time?

## Value Choices

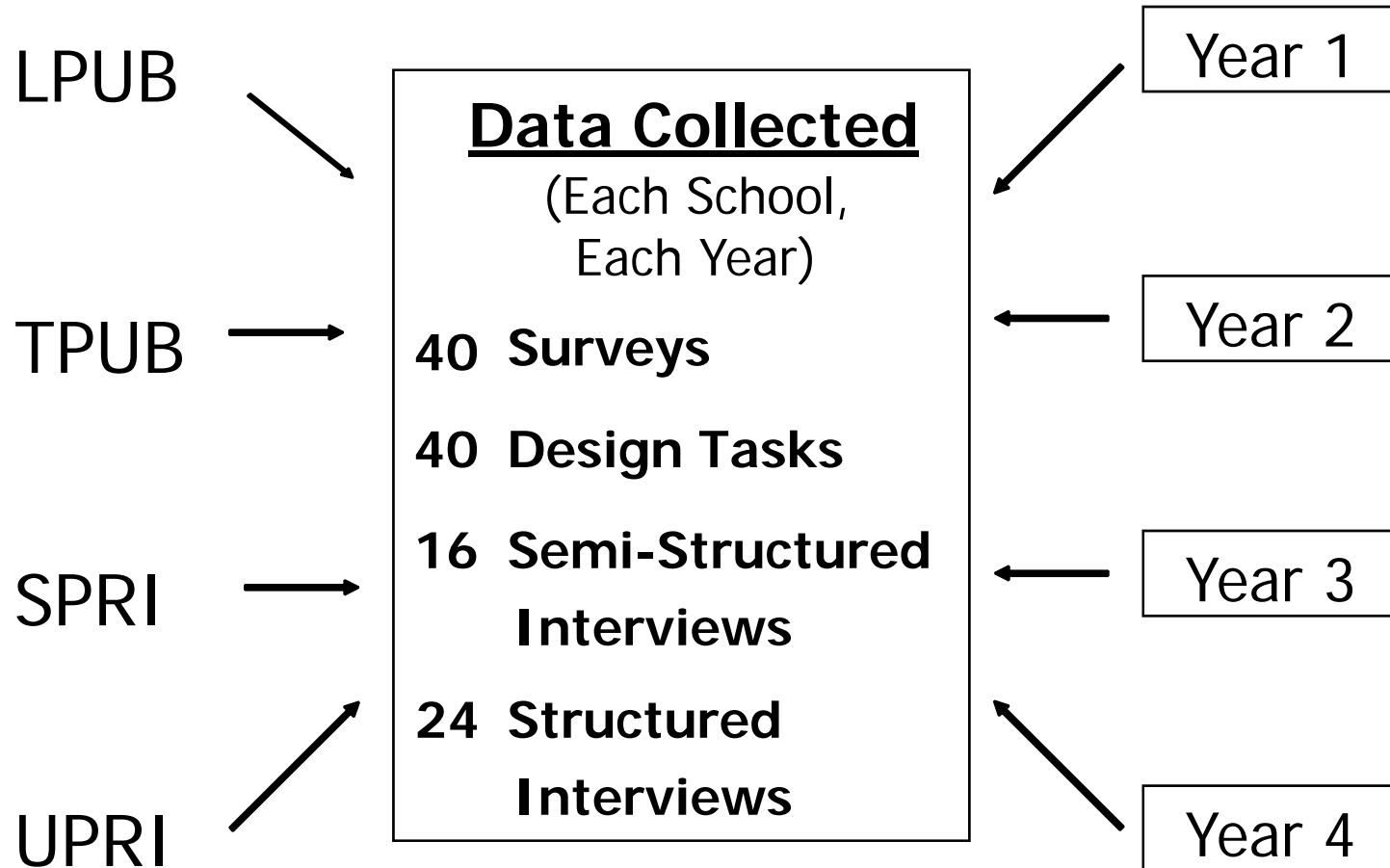
What are they? How do they change with time?



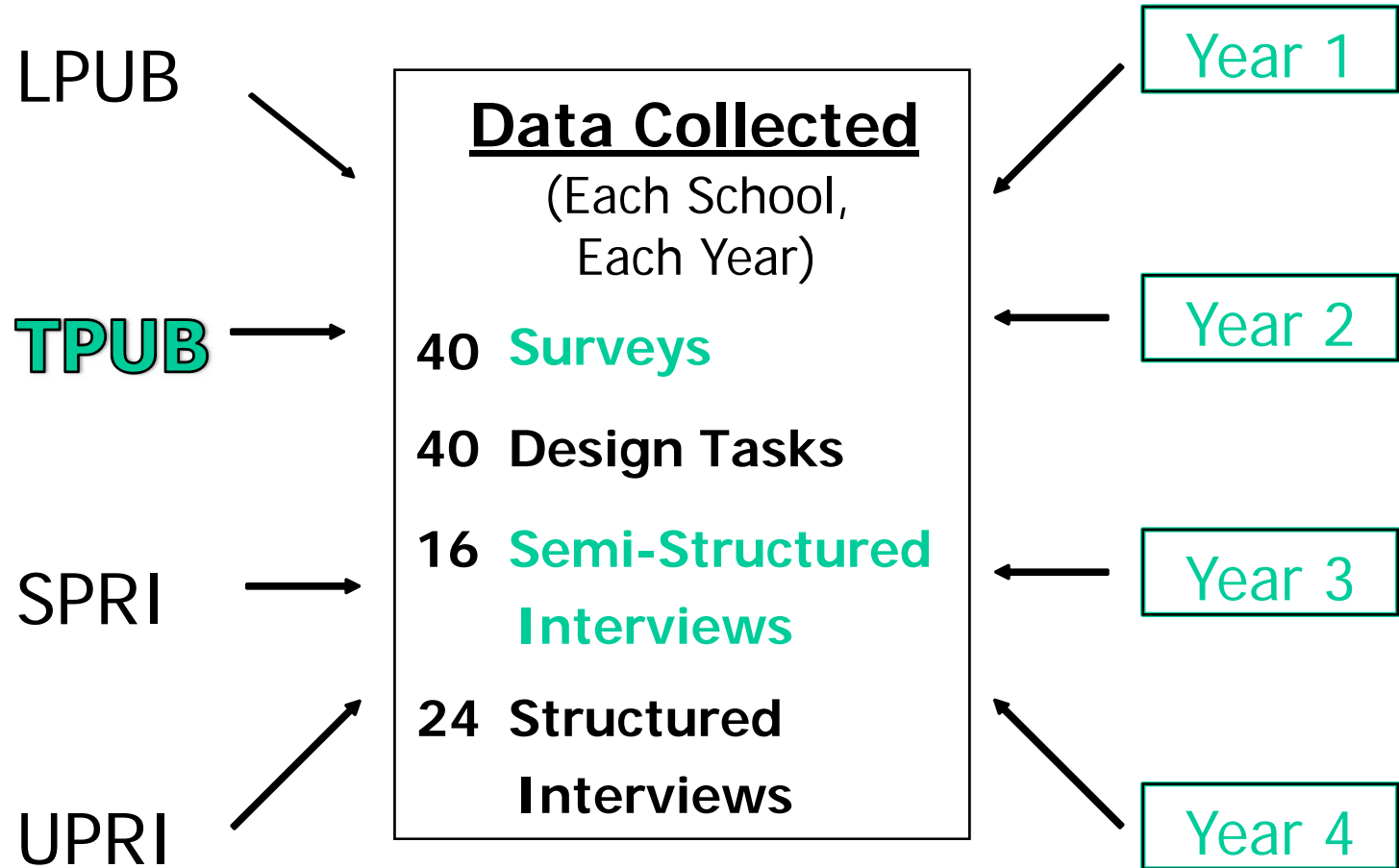
## Goals/Actions

Pursue an Engineering Degree

# The APS Research Study



# This Research Study



# Participants and Data

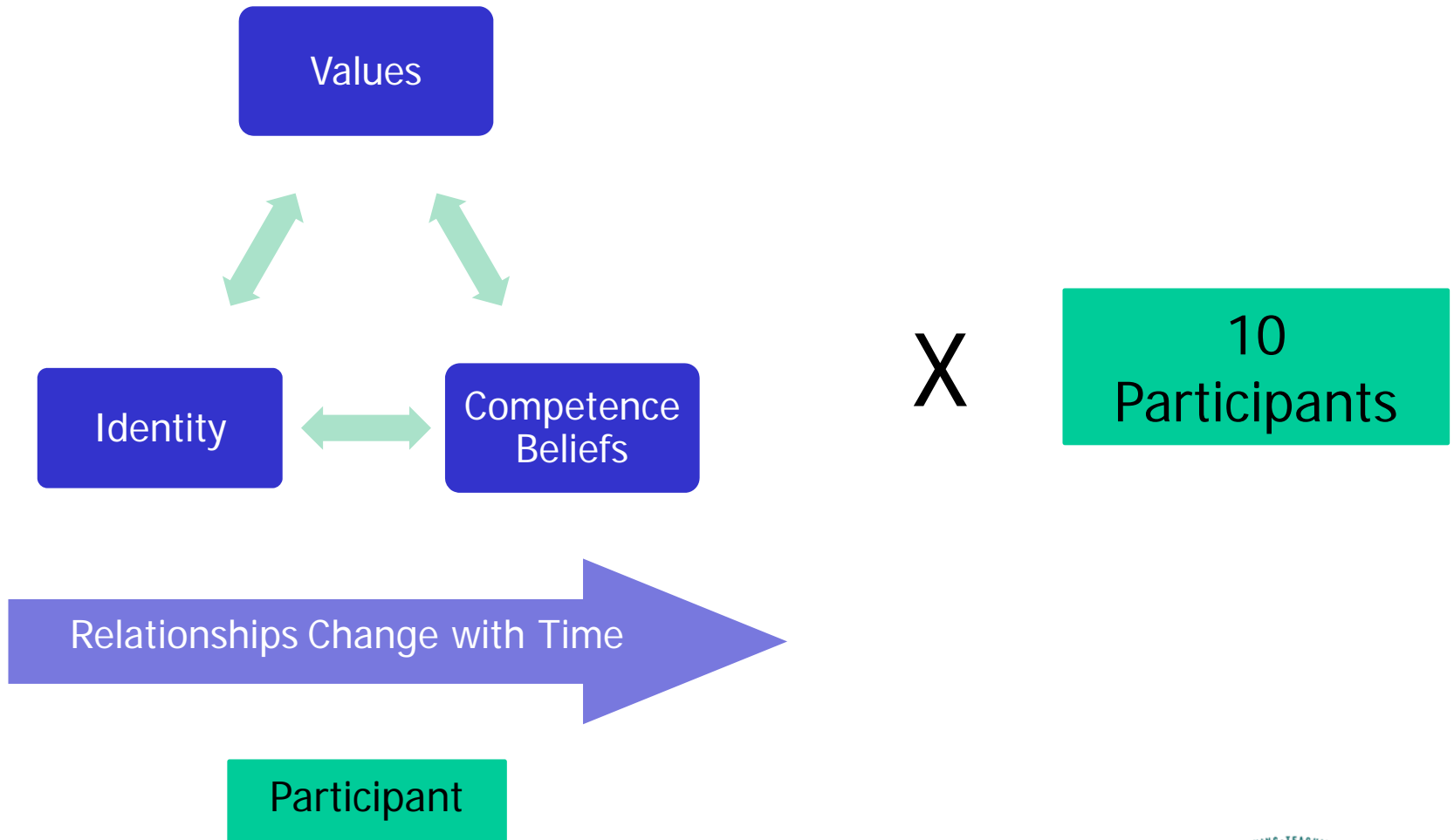
- TPUB
- 5 men and 5 women
- Engineering undergraduates
- 40 semi-structured interviews
- 22 informal conversations
- Triangulated with surveys and transcripts



# Challenge #1- Existing Data

- Researchers did not interact with participants
- No member-checking

# Challenge #2- Longitudinal Data



# Pictorial Personas

- Creation
- Use
  - Mitigate bias
  - Hypothesis testing

Participant ID #

I Want to Be/Do:

In this section, bulleted and color-coded by year, are the participant's descriptions of what he or she wants to be and/or do in the future. This includes career and lifestyle (e.g. "have a dog & kids") depictions of the future.

I / I am:



Play Soccer B-1

Write Poetry B-1



Play Soccer B-2

Prefer lab to lecture B-2



Play Soccer B-3

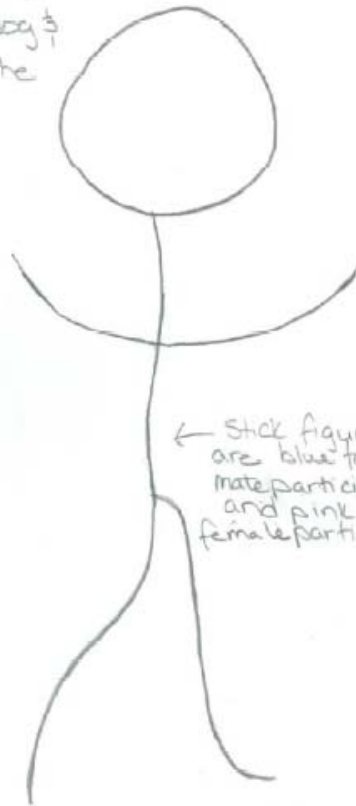
Struggle in lab class B-3

Take Poetry class B-3

Play Soccer B-4



↑ This section contains notes on small squares of sticky paper. The notes represent salient features from the interviews.



← Stick figures are blue for male participants and pink for female participants

Certainty of Major:

Motto: Summarizing catch phrase for participant

Jobs: Listed by year

Gender, Minor(s), sports, Clubs, Ethnicity

Future Plans per last interview

# Value Patterns

	Values by Year															
	Attainment (consistent with sense of self)				Cost (time and effort)				Interest (enjoyment)				Utility (perceived future usefulness)			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Max</b>	H	H	H	H	L	L	L	L	M	M	H	H	H	H	H	H
Hillary	H	H	H	H	L	L	L	L	H	H	H	H	M	L	L	L
Mark	H	H	H	H	L	L	L	L	M	M	M	H	H	H	H	M
Will	H	H	H	H	L	L	L	L	H	H	H	H	L	L	L	L
Beth	H	H	H	H	L	L	L	L	H	H	H	H	H	M	L	L
Joe	H	H	H	H	L	L	L	L	H	H	H	H	M	M	L	L
<b>Anna</b>	L	L	L	L	M	H	H	M	L	L	L	M	H	H	H	H
Marie	L	L	L	L	L	L	L	L	M	M	M	M	M	M	M	M
Leslie	L	L	L	L	M	M	H	H	L	L	M	L	H	H	H	H
Tim	L	L	L	L	M	M	M	M	M	M	M	L	H	H	H	H

High (H) = many instances/high quality, Moderate (M) = multiple instances/moderate quality  
 Low (L) = few or no instances/low quality

# Limitations

- Research Study
  - Single context
  - Use only available data
- Pictorial Persona Method
  - Context not represented
  - Limited by space and access

# Acknowledgement

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