



# A WIZARD-OF-OZ EXPERIMENT TO DEMONSTRATE WATER REDUCTION AND USER TRAINING WITH AN "AUTONOMOUS" FAUCET

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# An Example of a Telepathic<sup>2</sup> Faucet

- The Telepathic Faucet meets a potential user

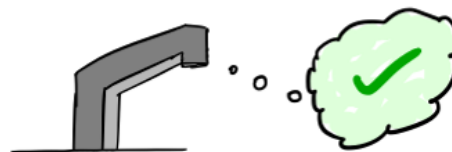
## SENSING

HUMAN? A PLATE? WASH HANDS?  
CLEAN DISH? A KID? AN ADULT?  
IMPULSIVE? PICKY? EASY-GOING?



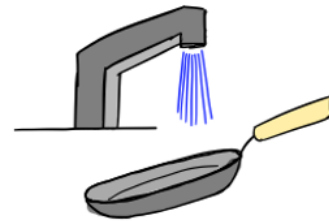
## SENSING COMPLETE

SOILED DISH ;  
HUMAN - IMPULSIVE AND PICKY



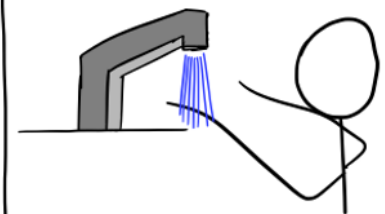
## FUNCTIONALITY

- PROVIDE FULL FLOW UNTIL TEMPERATURE IS APPROPRIATE.
- STAY ON FOR 5 SECONDS.



## TRAINING

EVENTUALLY, FAUCET OFFERS USER  
TRAINING IN WATER CONSERVATION!



## Slide 2

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- 2 Move "An example of how a telepathic faucet might work" up to be the title, so that the space can be used to add description if any  
Minhua, 8/17/2017

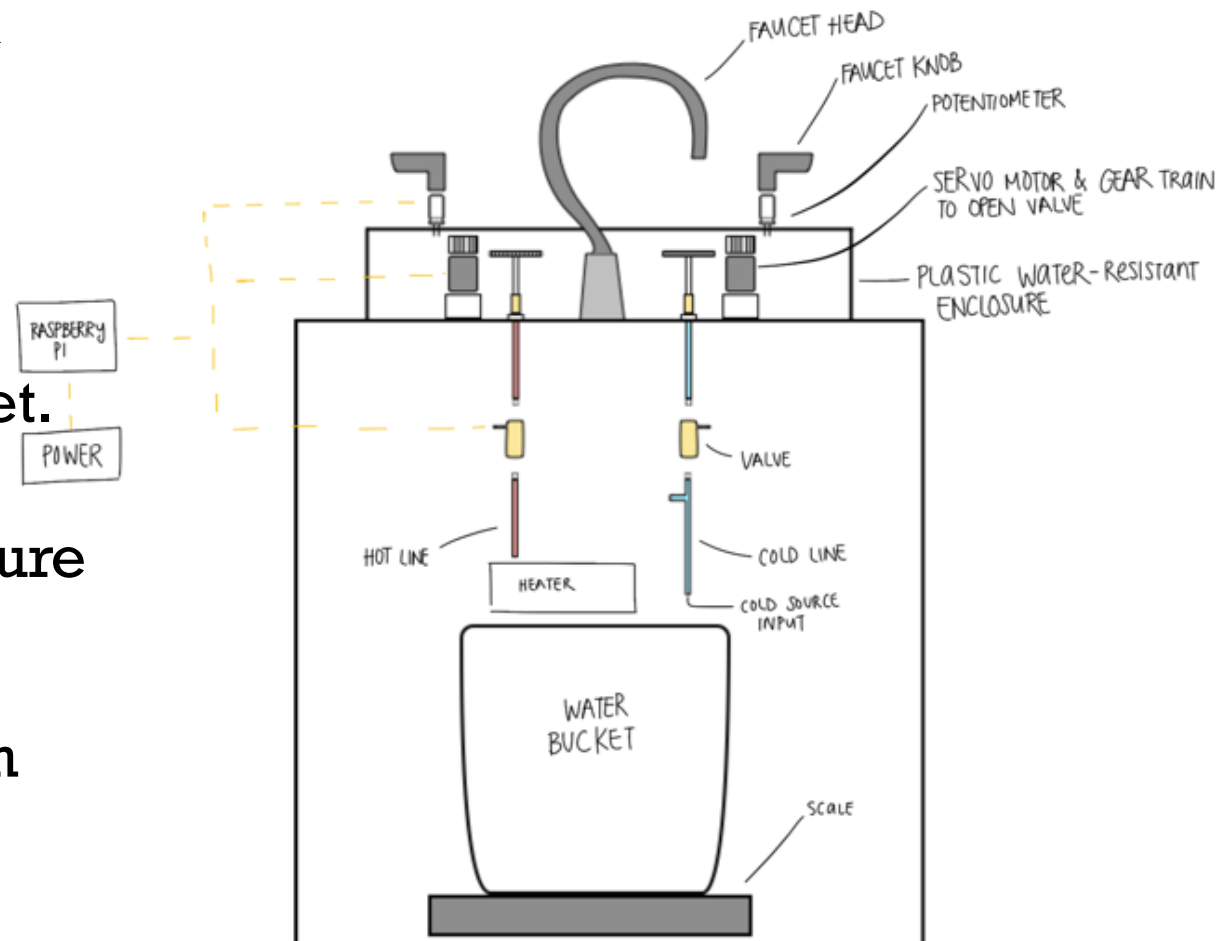
# Experiment

- Can we save water?
- (also papers on ML)
- To test our design concept, we created a “smart faucet” that was actually a wizard-of-oz experiment.
- We shall call him:  
**William The Faucet**
- William is very smart



# Faucet design

- Acted as fully manual, fully automatic, and combination automatic/manual faucet.
- Reading the manual adjustment to temperature and flow after William's guess was stand-in for updating algorithm with user input



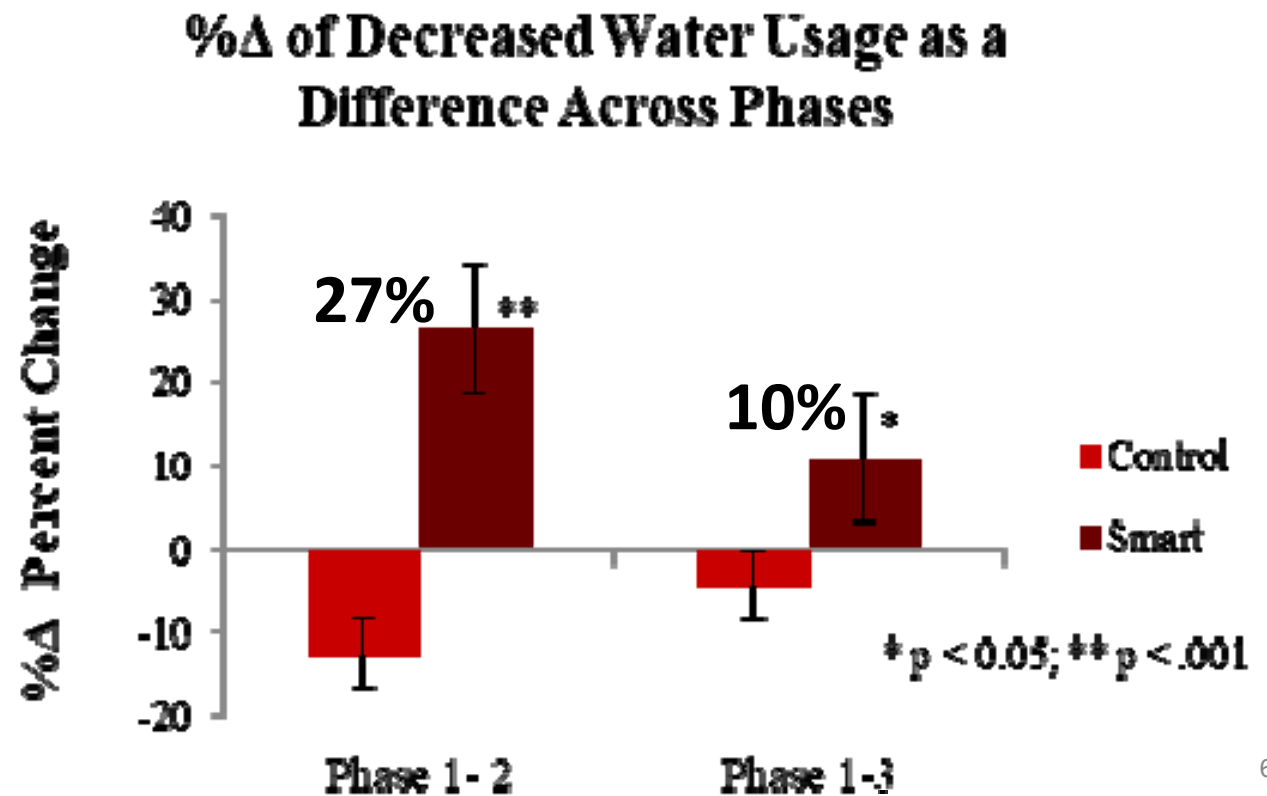
# Experiment Task

- Phase 1: Wash dishes w/manual faucet
- Phase 2: Wash dishes w/William Faucet or manual faucet
- Phase 3: Wash dishes with manual faucet

(William was hiding behind wall to drive faucet)



**Did William The Faucet decrease water usage? Yes! Even when switched back to manual in Phase 3.**







## FEATURED TOPIC

### Wizard-of-Oz Experiment May Influence Design of Super Smart Faucet

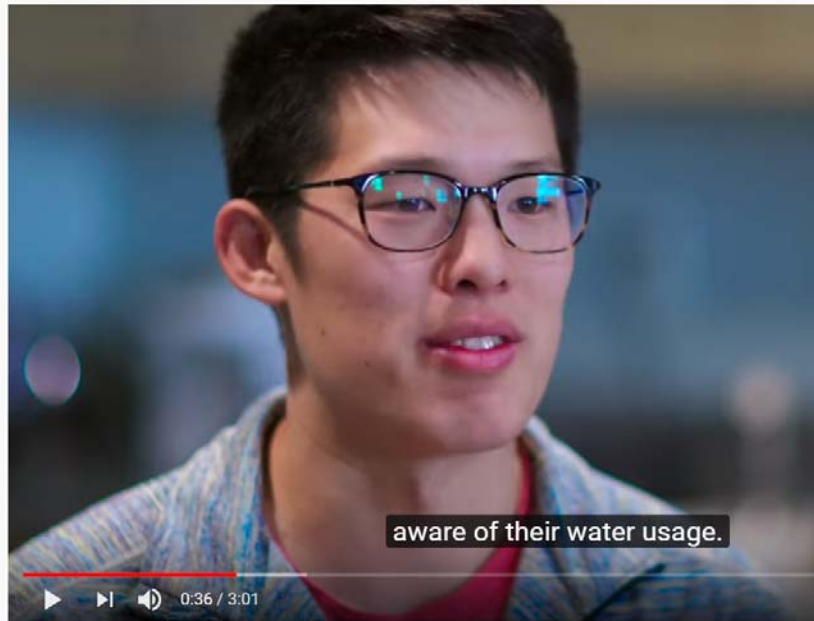
An experiment by a Stanford University Research Team demonstrates the potential of a user-centric, super-smart faucet that may influence user behavior and help conserve water. The experiment was detailed in a [paper](#) presented at IDETC/CIE2019.

Related stories: [ASME News](#); [Stanford News](#) ...

AUGUST 20, 2019

## Stanford researchers find smart faucets could aid in water conservation

*An experiment with a water-saving “smart” faucet shows potential for reducing water use. The catch? Unbeknownst to study participants, the faucet’s smarts came from its human controller.*



Stanford researchers reimagine the sink

8,722 views • Aug 20, 2019

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