

# Diversity in Everyday Life

-- Collage of the class works

EECE 499: Computers and Nuclear Energy  
Electrical and Computer Engineering  
Howard University  
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[www.mwftr.com/cne.html](http://www.mwftr.com/cne.html)



**D'ANGELO R. WOODS** — Design and  
Functional Diversity

Multiple components. Same design requirements.

## **DESIGN DIVERSITY**

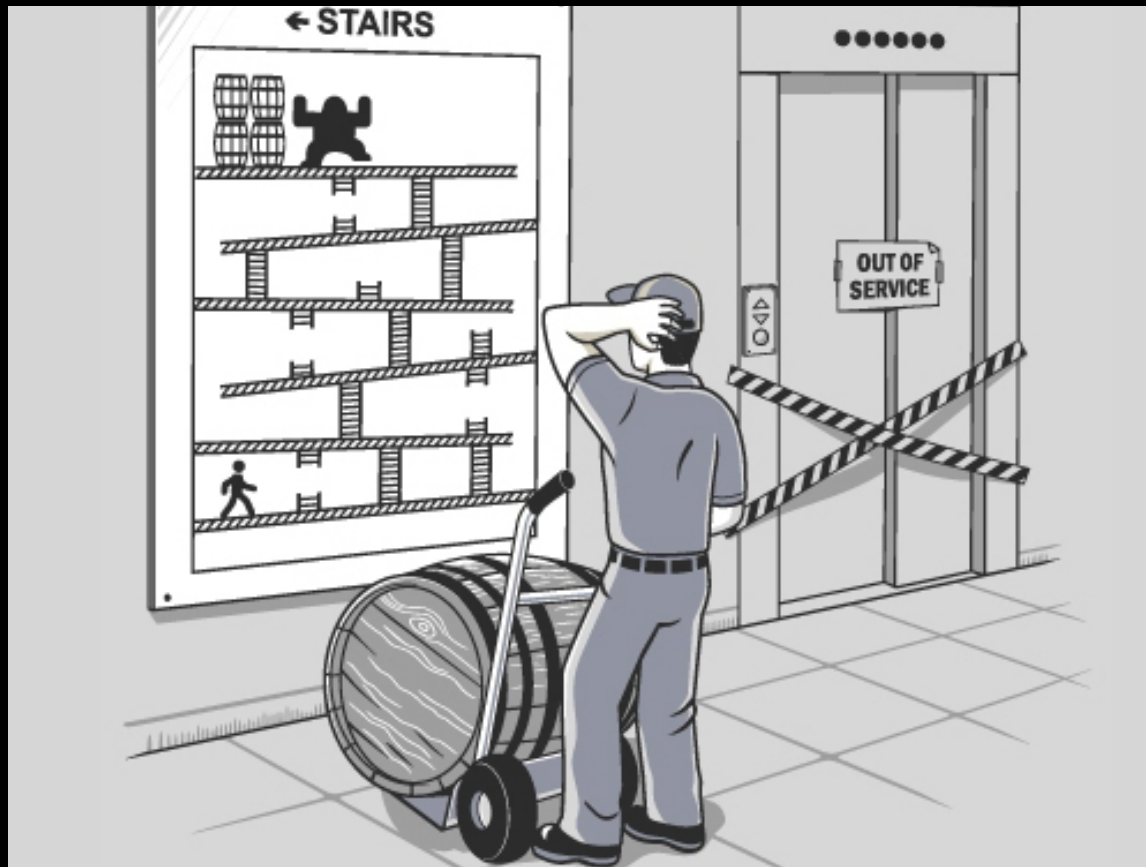


## **Personal Protective Equipment**

The helmet, reflective vest, safety glasses, and even the khaki-colored jeans are worn to protect different parts of the utility worker's body

Different requirements. Same mission.

# **FUNCTIONAL DIVERSITY**



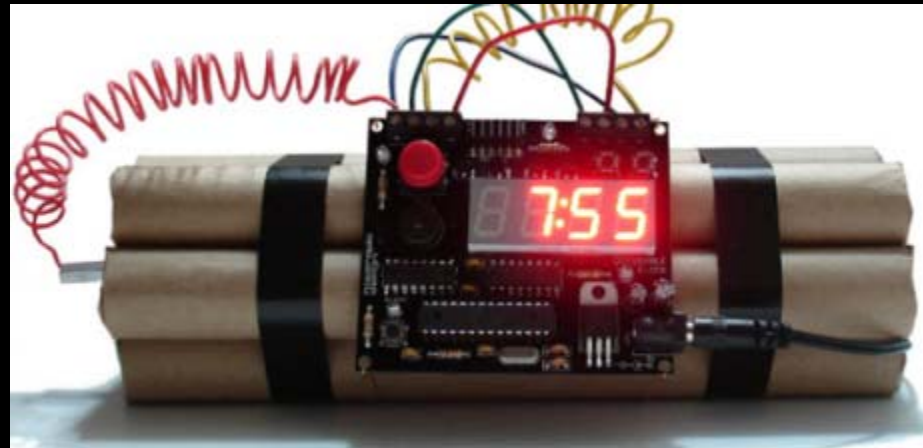
## Stairs and Elevators

Both perform independent functions to satisfy the upper-level requirement of transporting people between floors. But...



## Common Cause Failure?

...both the stairs and the elevator can fail as a route to safety for those with physical limitations.

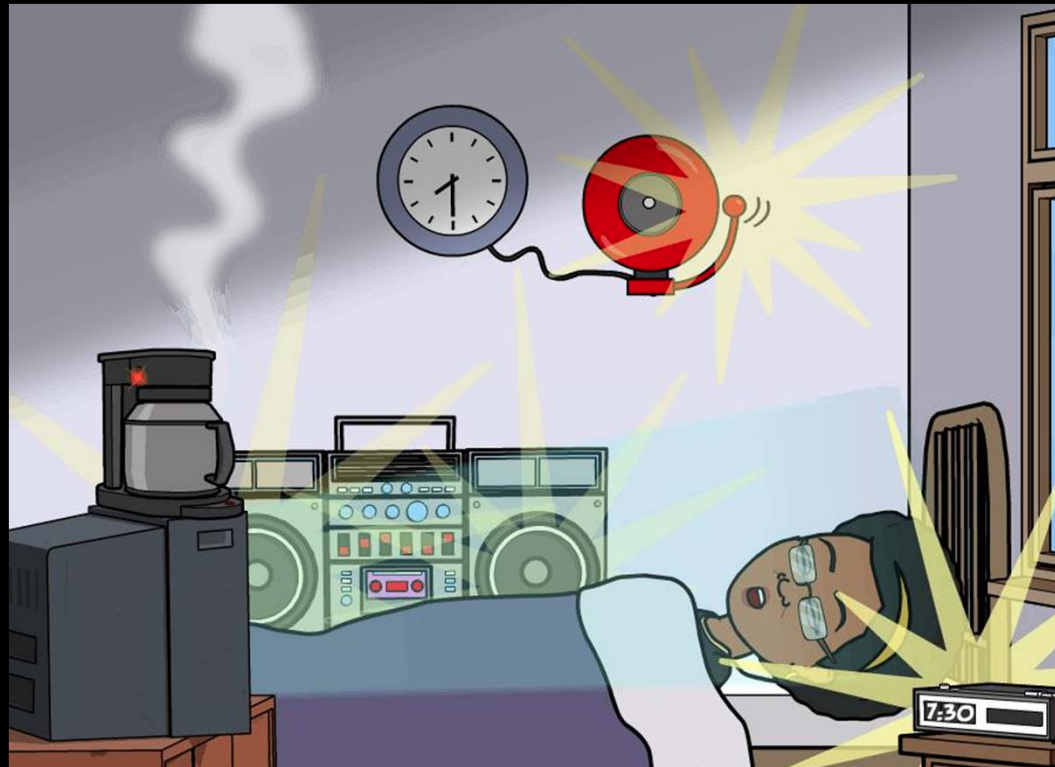


## JADE PARKER — 5 ALARM SYSTEM



# 5-alarm system

- Even something as simple as an alarm has diversity
- For some, the hardest part of the day can be just getting the day started





**KENNETH BOOKER — ALL IN ONE**

# All in one

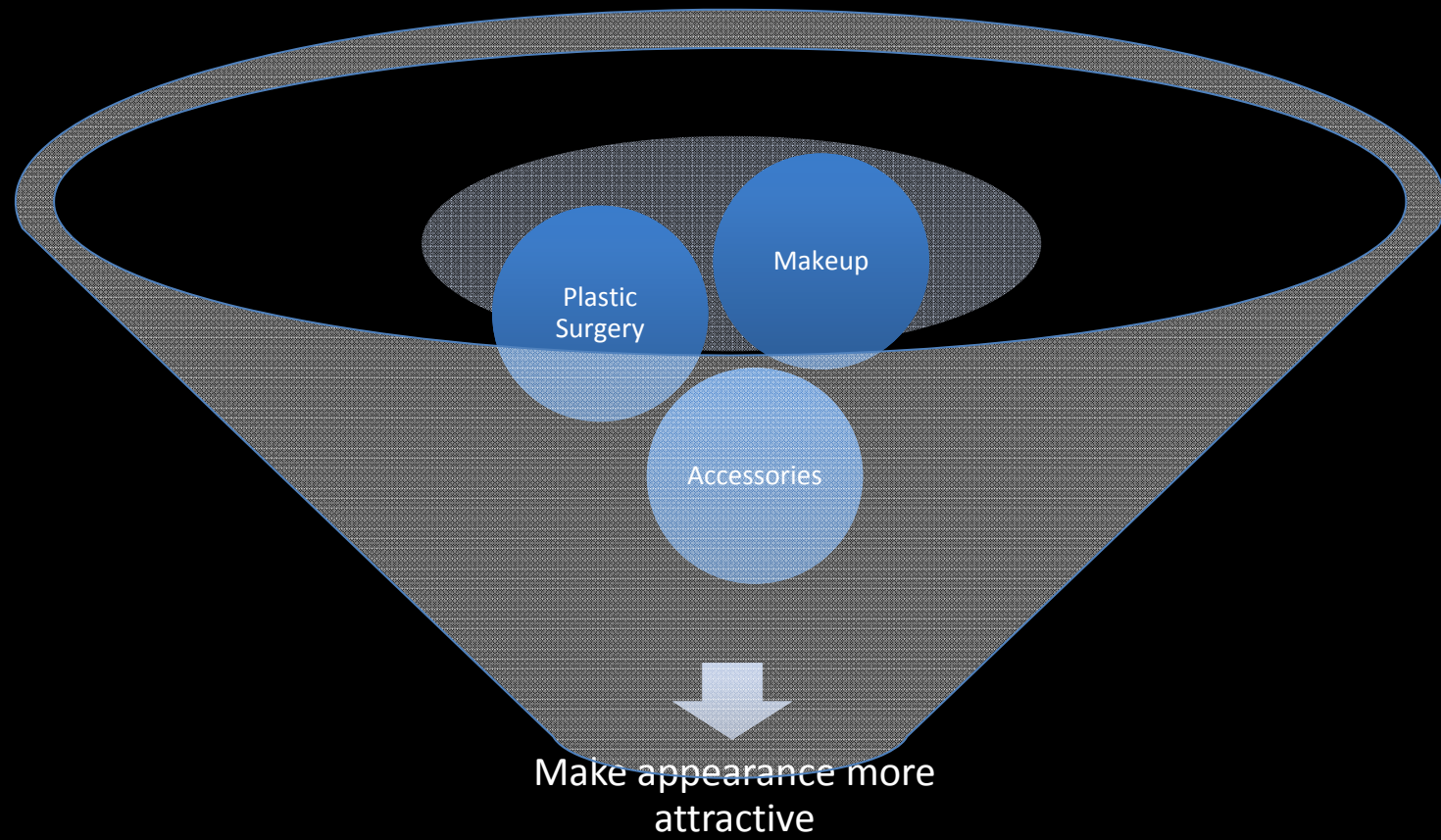
- Lock Systems can come with up to three varieties.
- Biometric electronic Lock
  1. Thumbprint
  2. Pin Entry
  3. Eye Scan





# CHRISTINE ANDALL - ATTRACTION

# design



# Motion Sensor Light Switch

**CORBIN JACKSON – I/O**

# Input/Output

Motion-----→Light

*Input*

*Output*

Switch-----→Light



# **PHATHOM DONALD – CARS AND ELECTRICITY**



# Design Diversity

- Implementation of components that perform the same function with differing internal design.
- All cars perform the same general function: DRIVE
- Customers can choose from gas, electric, and hybrid vehicles



# Design Diversity

- Solar panels, dams, and wind turbines (as well as other methods of power generation) all perform the same function: GENERATE ELECTRICITY
- Diversity in methods of generation: where one fails, another may be highly efficient





# VENESSA WOODSON- PHONES, KEYS, OVENS, AND MESSAGE

## Example

IPHONE 5S





**example**

Car Keys





**example**

Toaster Oven



## EXAMPLE

E-mail and Instant  
Messaging





# ALEXIS WELLS — VERTICAL MOBILITY



# Technology: Vertical Mobility

- Escalators, Elevators, & Stairs



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[http://subwaynut.com/ind/jay\\_metrotecha/jay\\_metrotecha14.jpg](http://subwaynut.com/ind/jay_metrotecha/jay_metrotecha14.jpg)



# WARREN SPENCER – 101 DALMATIANS

# Diverse Solutions

- Get multiple breeds of dogs if you do not want to suffer from CCF.





## **ANDRE PALHARES- PERSONAL HOTSPOT**

# Solution

Students

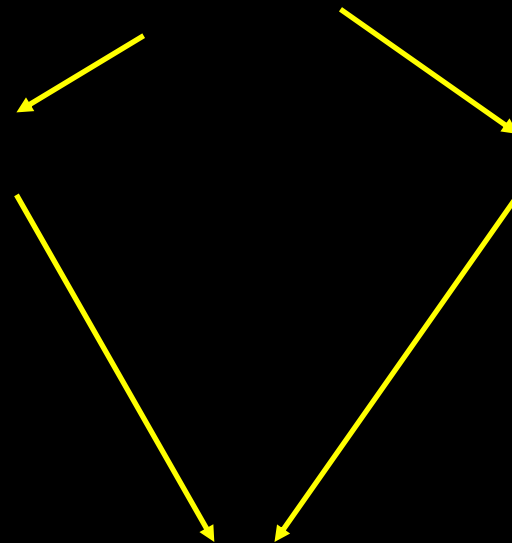
Howard ISP



T-Mobile



Internet



THE END