



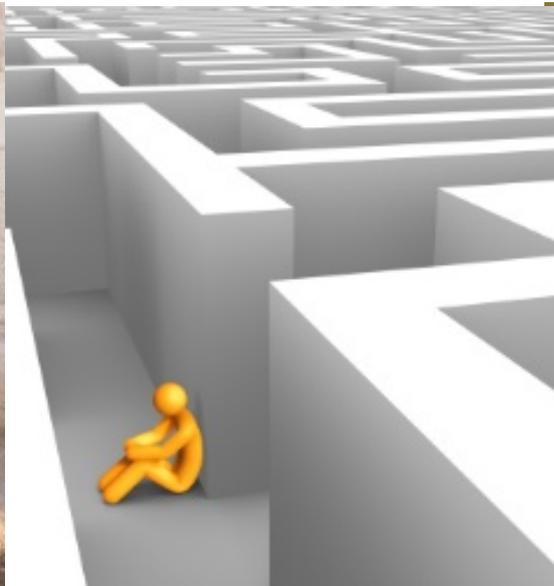
# NAVIGATING ITS EDUCATION: CHALLENGES AND INNOVATIVE PATHWAYS

Monty Abbas, Professor  
Virginia Tech

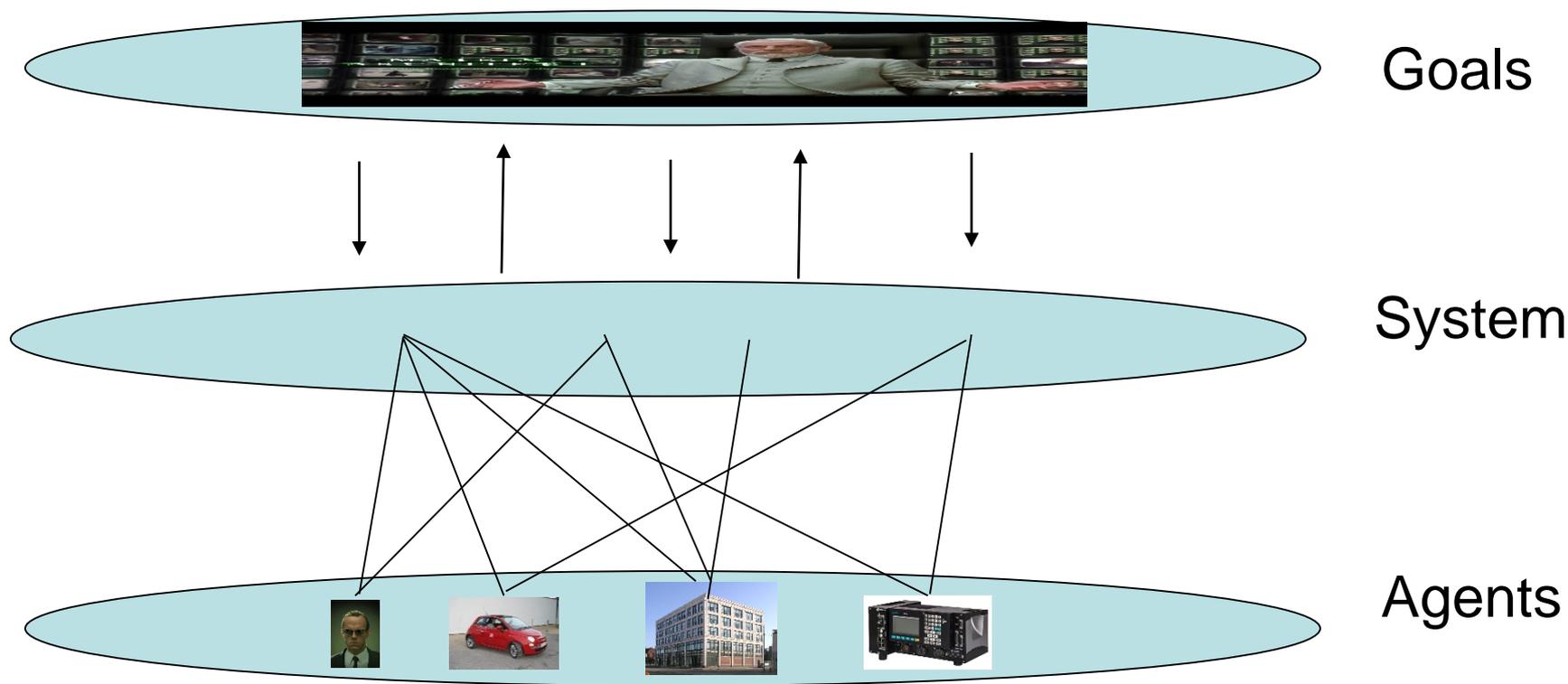
ITS PCB Academic Workshop  
March 27-28, 2019

# ITS Education!!

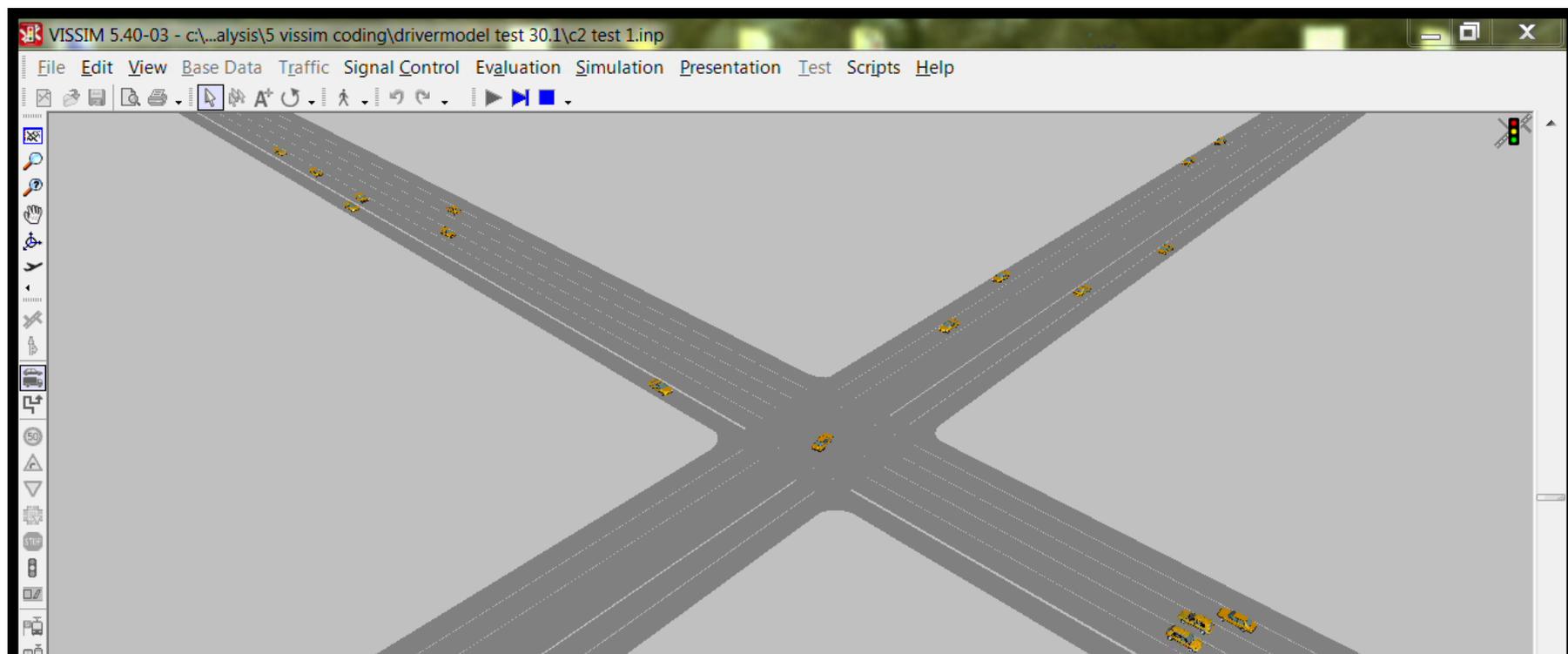
- Manifold of subjects and needs
- Fast-paced technological advancements
- Diverse student population



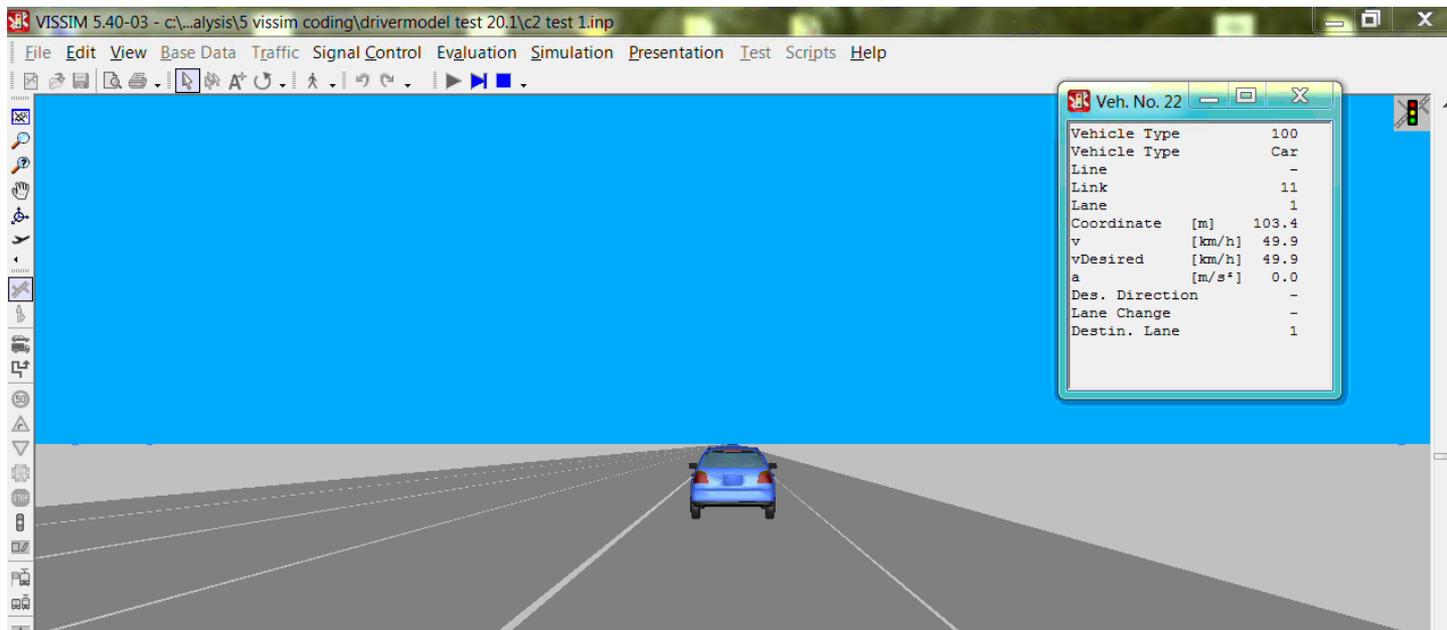
# Educate and “locate”



# Educate and engage



# Educate and appeal

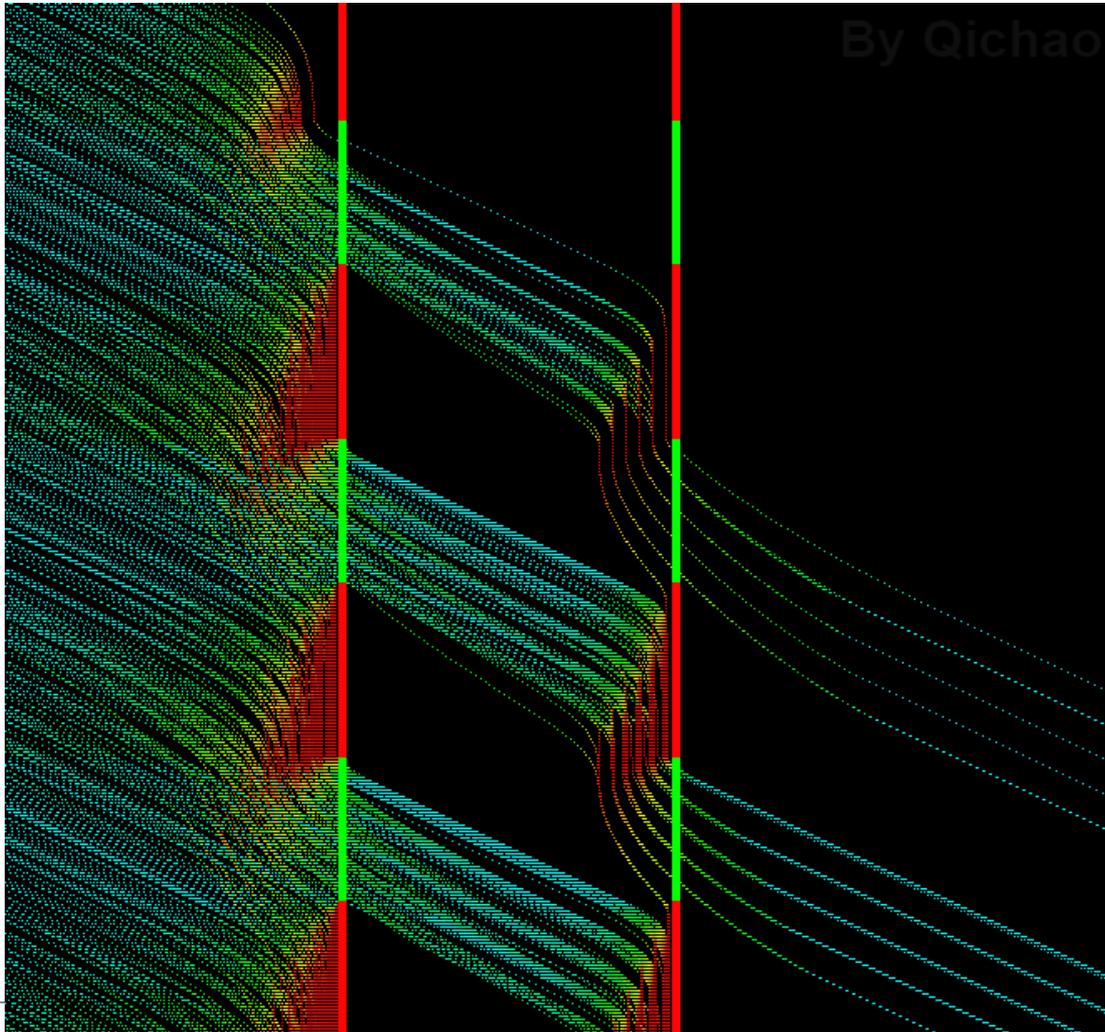


# Educate and target concepts

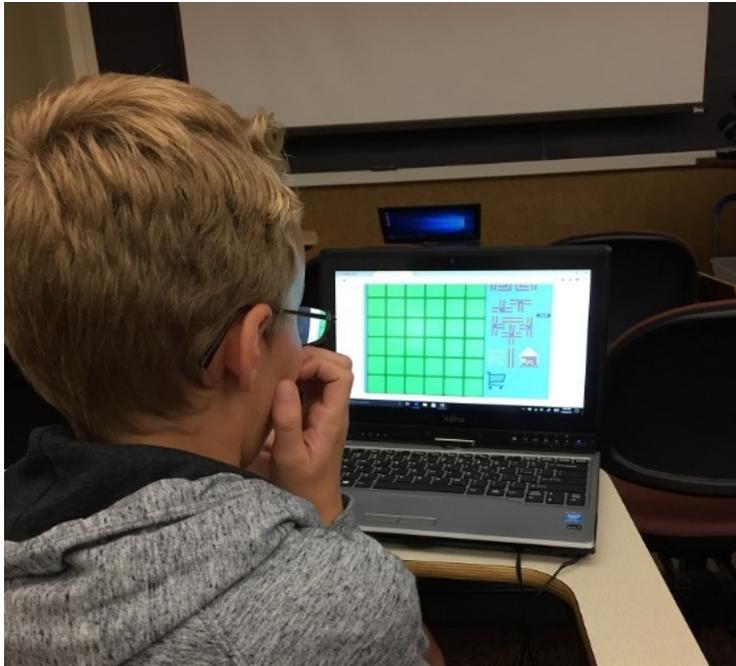
## Transportation Areas and Concepts

| Area                  | Topic                 | Concept   |
|-----------------------|-----------------------|---|
| <b>Signal Control</b> | Time-space Diagram    | Achieving efficient coordinated operation requires having same cycle length in each controller.   |
|                       | Offset, Splits, Cycle | The offset parameter can vary between 0 and the cycle length, and can have significant impact on system performance.  |
|                       | Coordination          | Sometimes, delaying vehicles in the beginning of the platoon can result in better overall coordination.   |
|                       | Shockwaves            | Traffic shockwaves that are created because of the change in traffic arrival patterns are important to account for when designing a better coordination plan. |

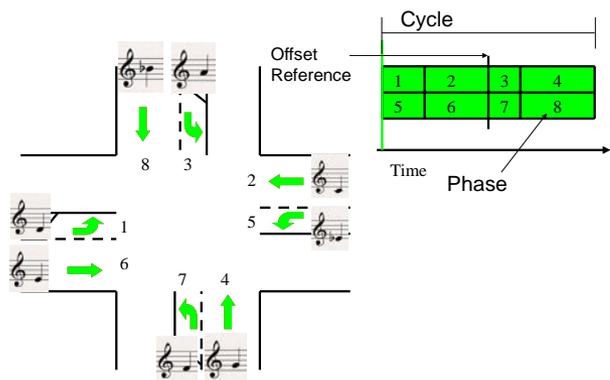
# Educate and play: time-space invaders



# Educate and outreach



# Educate and attract: SONATA



**VEHICLE DELAY (VEH-MIN)**

■ Visual Cues   
 ■ Auditory Cues   
 ■ Webster Formula



# “A” pathway for ITS education

- Provide the big picture on transportation (a multi-agent system)
- Locate and link concepts to the big picture
- Highlight ITS role in related subjects
- Educate, attract, and appeal without losing rigor