

Augmented Reality in HAZMAT Training

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**NIEHS SBIR Awards:
1R43ES028142-01, 2R44ES028142-02**



**National Institute of
Environmental Health Sciences**

RUTGERS
School of Public Health

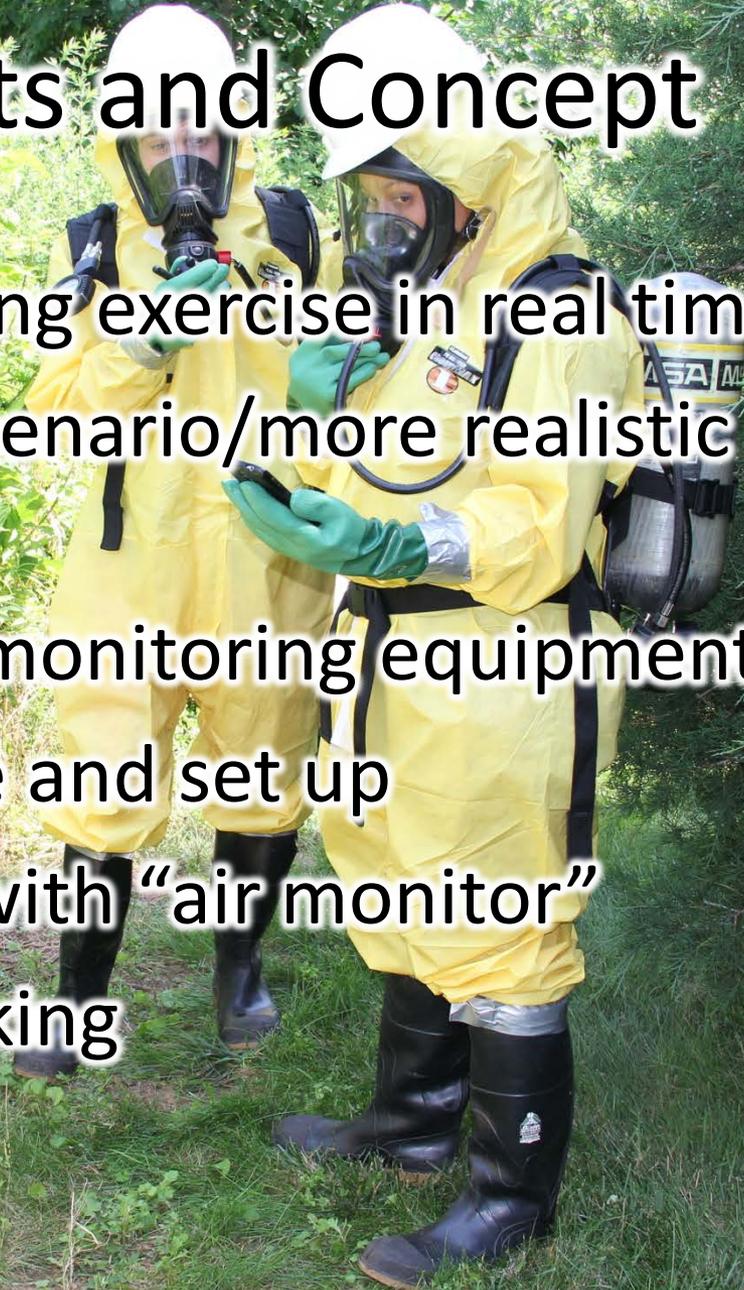
Outline of Workshop

- Requirements / Concept (Mitch)
- Definition of augmented reality (Cesar)
- Application (Mitch)
- The exercise (Peter)



Requirements and Concept

- Develop air monitoring exercise in real time
- Create a “real life” scenario/more realistic experience
- Simulates actual air monitoring equipment
- Simple user interface and set up
- Learner experience with “air monitor”
- Learner decision making





MOTOROLA



cingular®

Inbox (4/17)



LG

EmergencyAUS

Submit Observation Setup Watch Zones

Warnings

- Fire - Advice**
Bronte Park
- Fire - Advice**
Goodwood

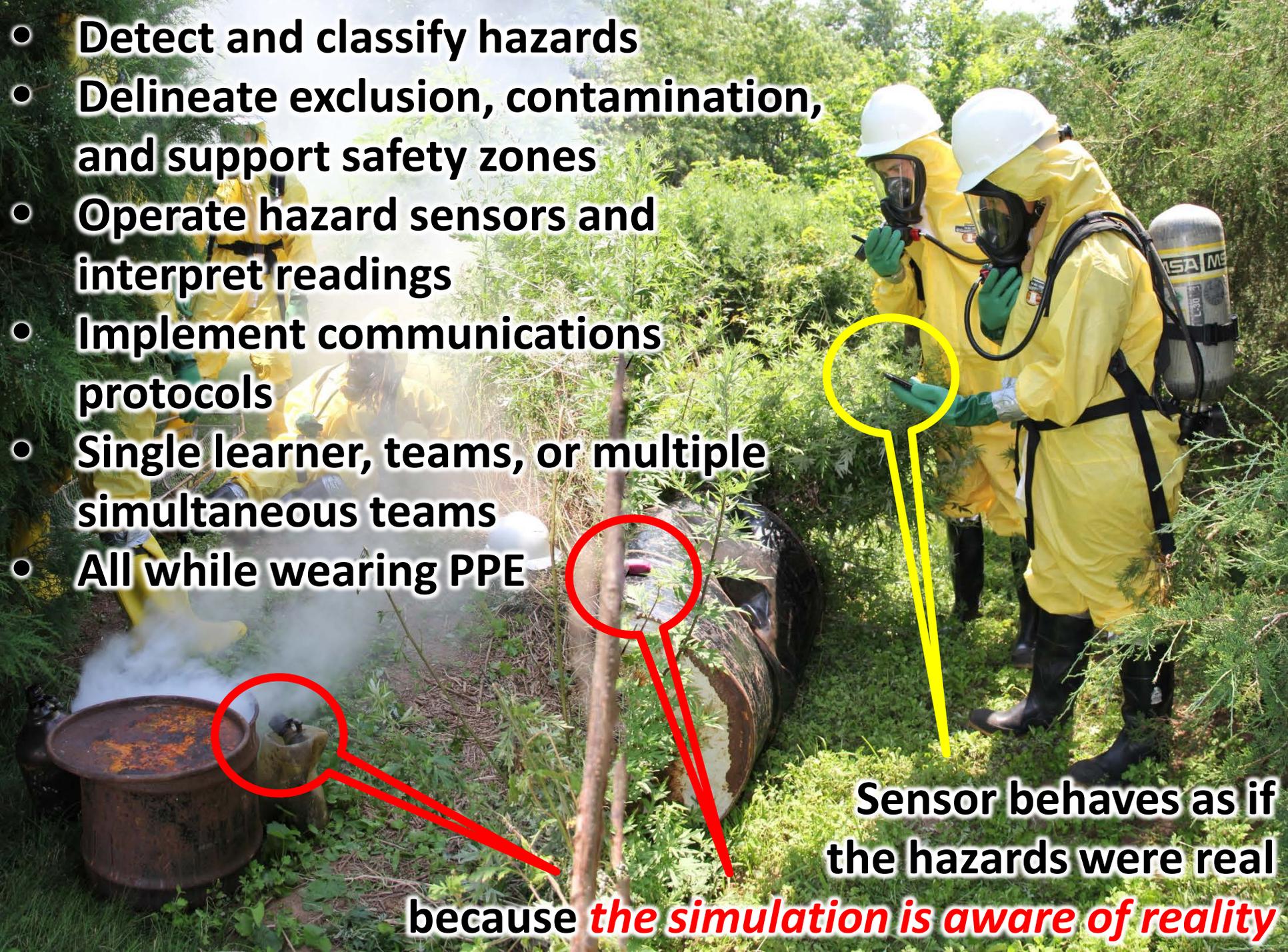
Show other warnings...

Incidents

- Medical Emergency**
Kilsyth
- Rescue**
Bayswater

Show other incidents...

- Detect and classify hazards
- Delineate exclusion, contamination, and support safety zones
- Operate hazard sensors and interpret readings
- Implement communications protocols
- Single learner, teams, or multiple simultaneous teams
- All while wearing PPE

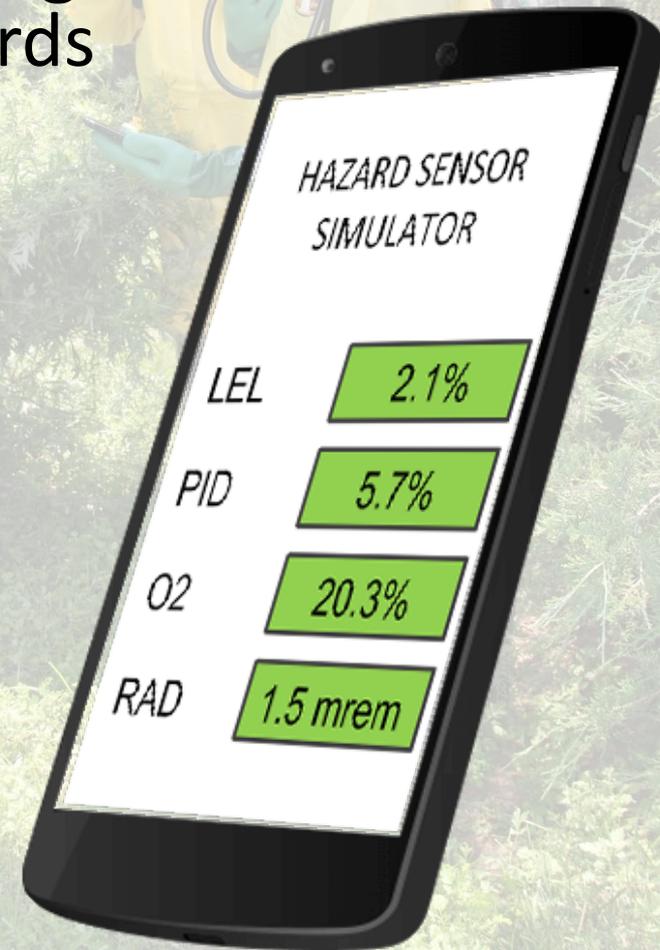


Sensor behaves as if
the hazards were real

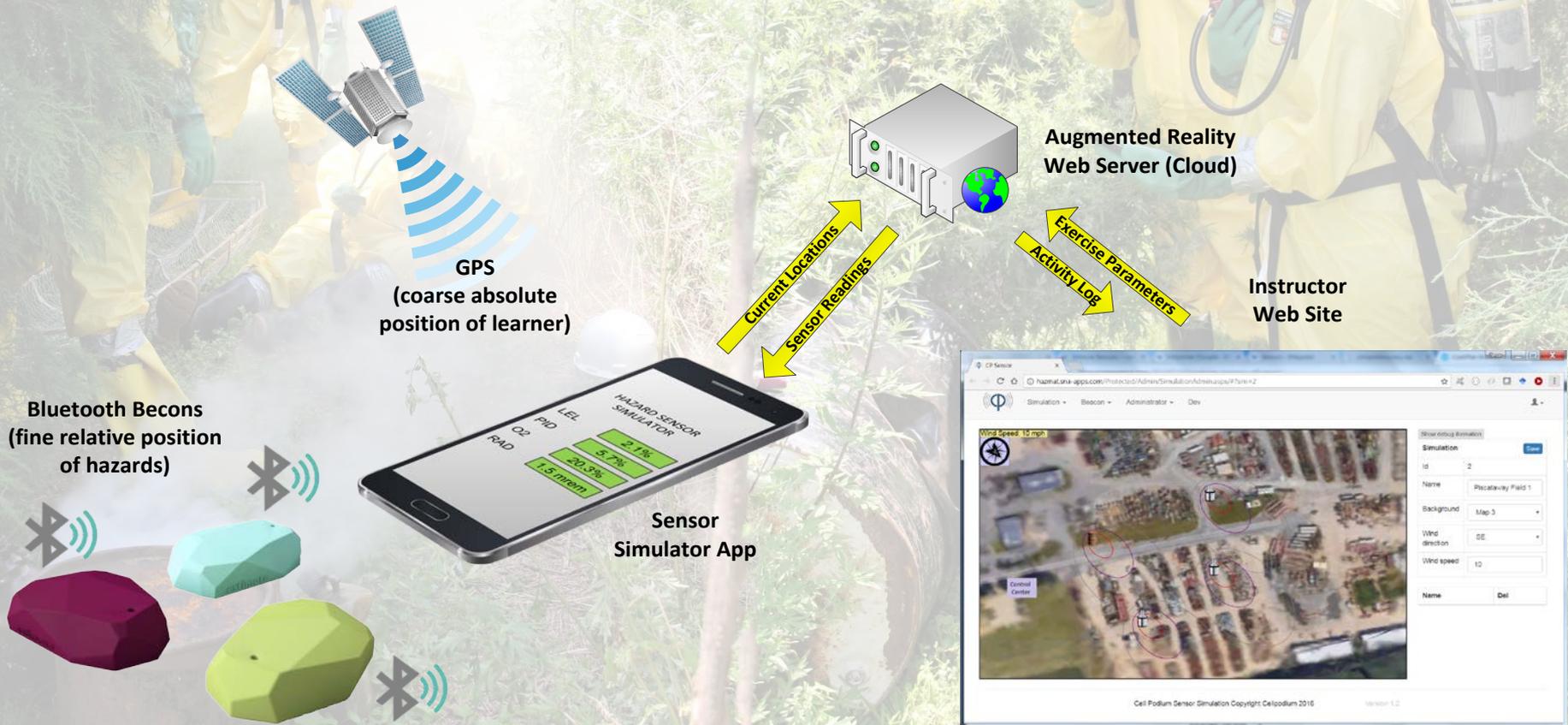
because *the simulation is aware of reality*

Each Beacon Simulates a Hazard

- Programmable strength and dispersion
- Chemical or radiological
- Mobile app displays exposure readings accounting for distance to ALL hazards
- Readings continuously updated even as learners and hazards move



Behind the Curtain





A More Sophisticated Version of Another Augmented Reality App

Time for Product to Gain 50 Million Users

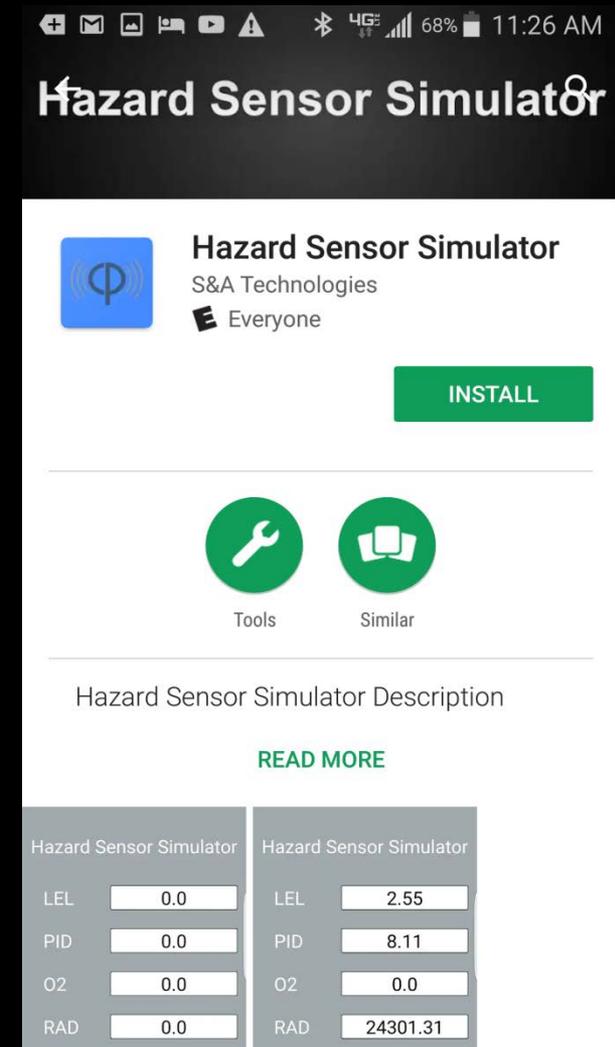
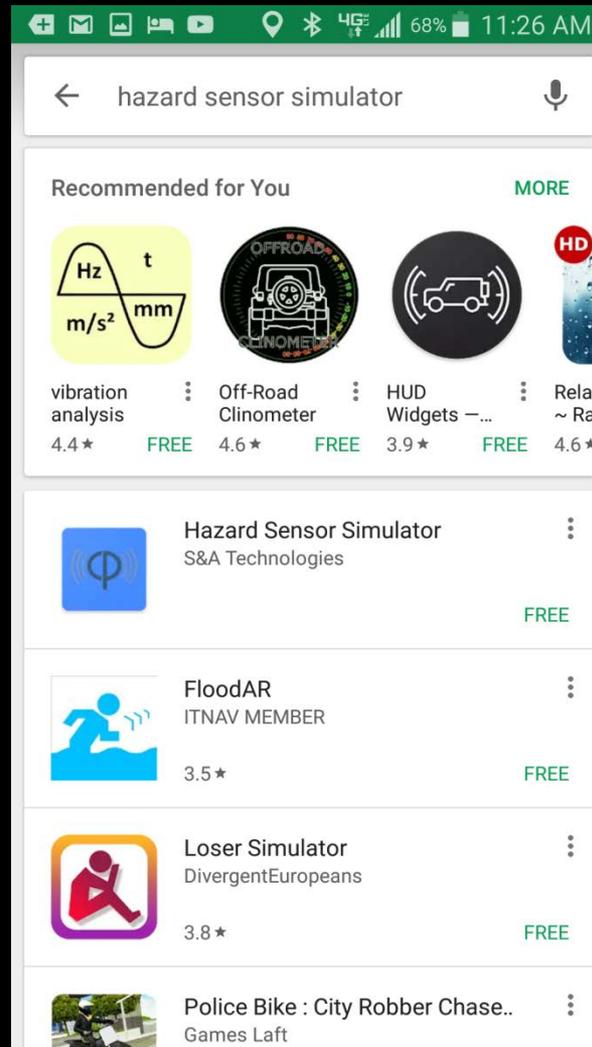
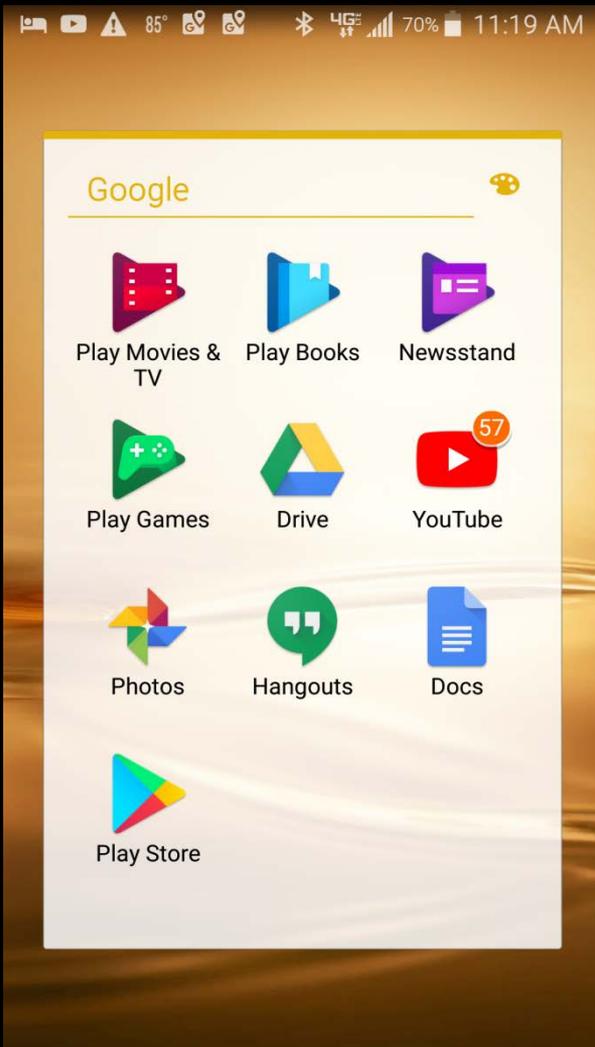




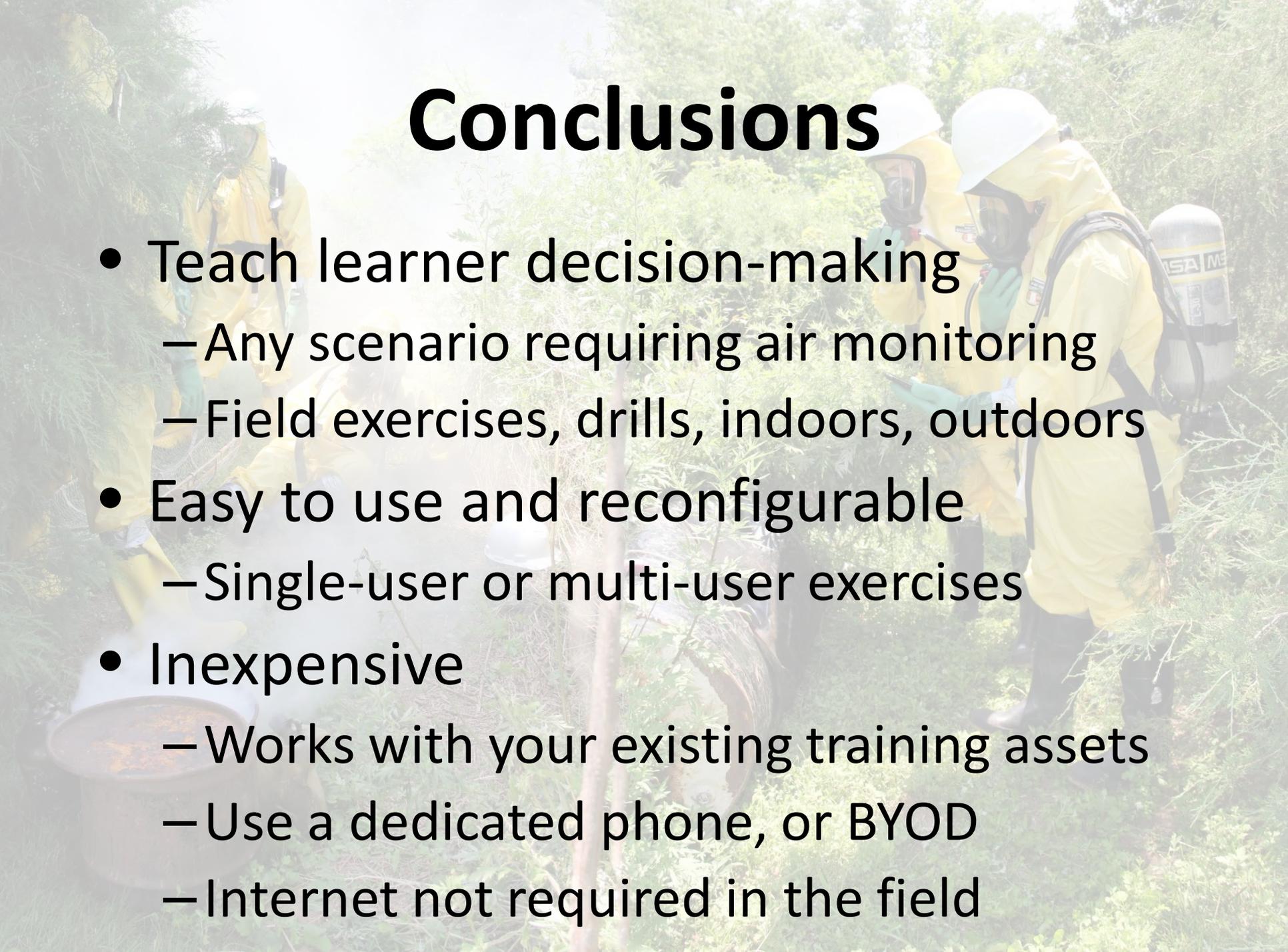
Training Exercise

1. The beacons
2. The app
3. The experience

Install the App



Conclusions

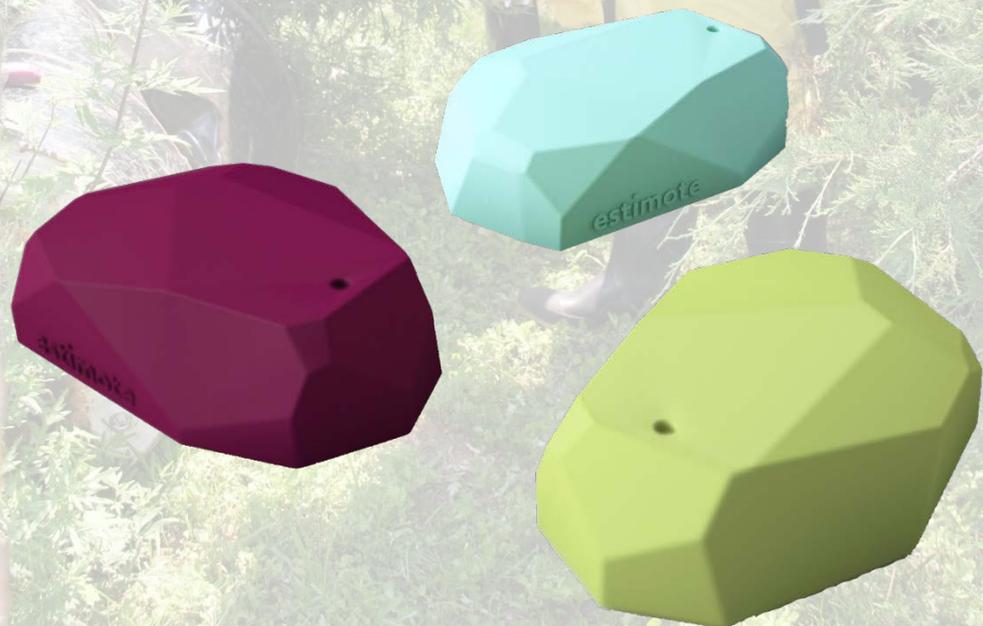
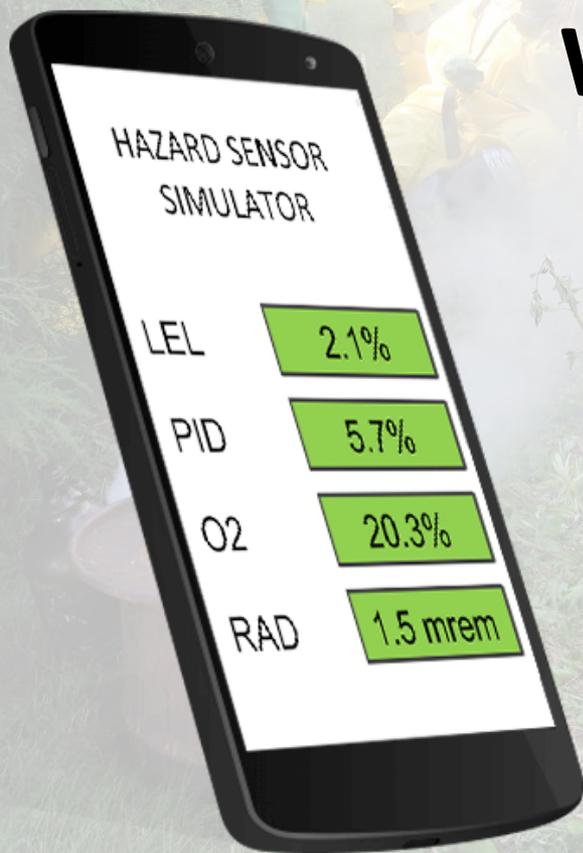
The background image shows several individuals in full yellow hazmat suits and white hard hats working in a wooded area. One person in the foreground is wearing a respirator and has a grey air cylinder on their back with 'USA M' visible. They appear to be conducting a field exercise or training.

- Teach learner decision-making
 - Any scenario requiring air monitoring
 - Field exercises, drills, indoors, outdoors
- Easy to use and reconfigurable
 - Single-user or multi-user exercises
- Inexpensive
 - Works with your existing training assets
 - Use a dedicated phone, or BYOD
 - Internet not required in the field

Try It in Your Training!

- Between now and March 2020, NIEHS grantees gets three hazards of their choice, the app, and three hours of videocall support for \$400.

What is your application?



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