



University of Pittsburgh

# Addressing Communication Challenges Within a Multi-suite BSL-3 Facility

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# University of Pittsburgh Regional Biocontainment Laboratory (RBL)



- A component of the Center for Vaccine Research
- Contains facilities for aerosol infections, microPET and CT imaging, and live-cell microscopy used with RG3 pathogens
- 27,000 square feet of BSL-3 and ABSL-3 space



# Communication Solution: Wireless, Wearable Devices

- From September 2007 to February 2014, wireless communication served as the primary method of communication between individuals inside containment and outside containment.

## Advantages

- Can broadcast to individuals or groups.
- Information dissemination is immediate
- Can be worn under Personal Protective Equipment (not hand-carried)
- Can call cellular phones/ outside lines
- Tells the time

## Disadvantages

- Voice recognition was unreliable, particularly when English was a second language
- **Expense**



## De-Centralizing Communication

February 2014 wireless, wearable devices were discontinued for use in the RBL.



- How would emergencies within the RBL be communicated outside of containment?
- What would be the means by which the RBL would be evacuated in the event of an emergency?



## How would emergencies within the RBL be communicated outside of containment?

**Good News:** We have a wireless communication back-up plan!



**Bad News:** We hadn't needed to use it so:

1. Only specific phone jacks had been activated
2. Not all of the phone lines had been assigned telephone numbers.



## Communicating Emergencies from inside the RBL: Solutions

- **Cooperate:** Facilities Management worked with telecommunications to activate phone ports without interfering with research or making wall penetrations.
- **Collaborate:** Extensive telephone contact lists, including representatives from the Center for Vaccine Research, Environmental Health and Safety, Animal Care staff, and Facilities Management, distributed throughout the facility (inside and outside of containment)
- **Coach:** Refresher training on emergency response SOP communication



## De-Centralizing Communication

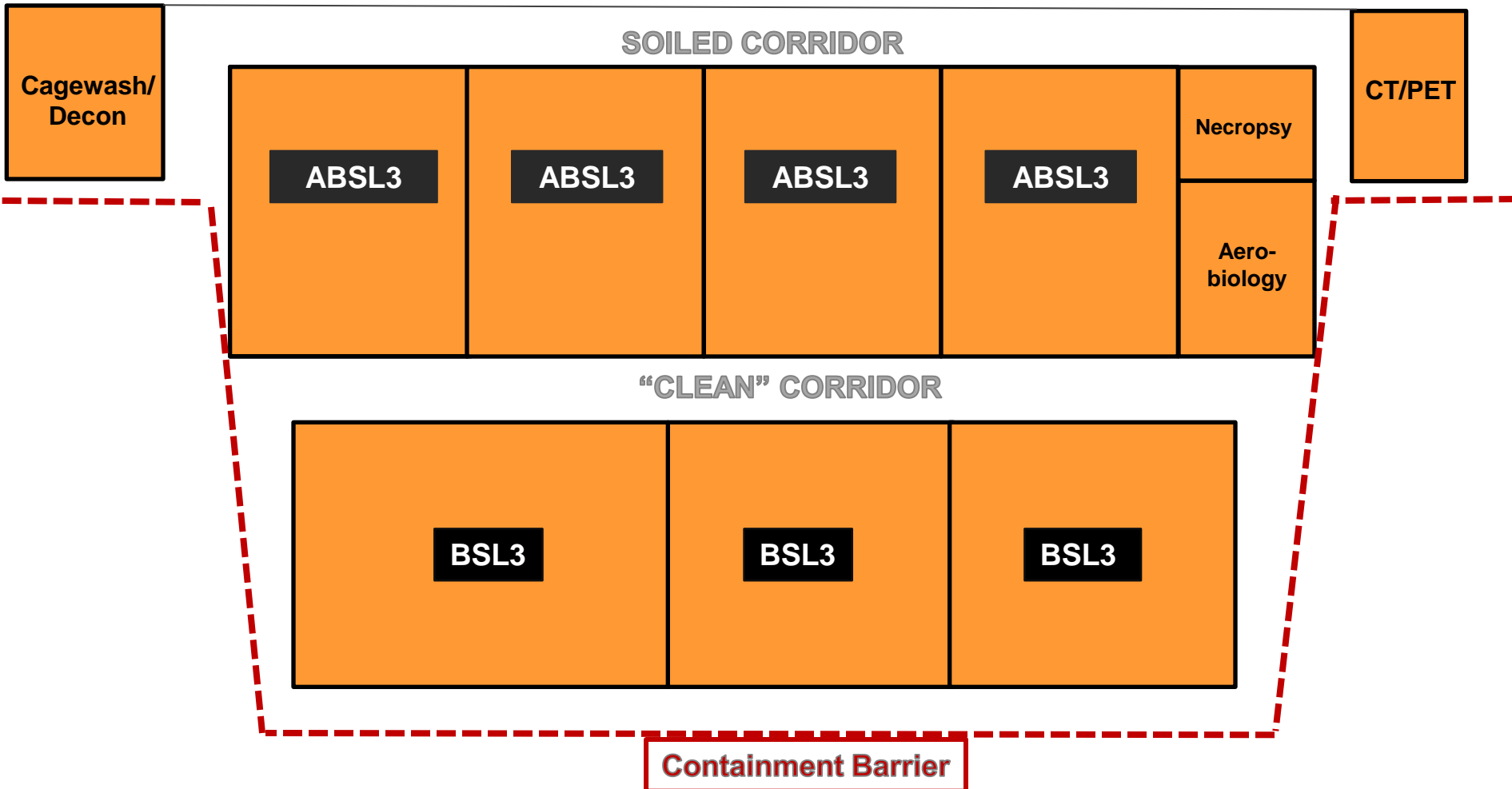


- How would emergencies within the RBL be communicated outside of containment?
- What would be the means by which the RBL would be evacuated in the event of an emergency?





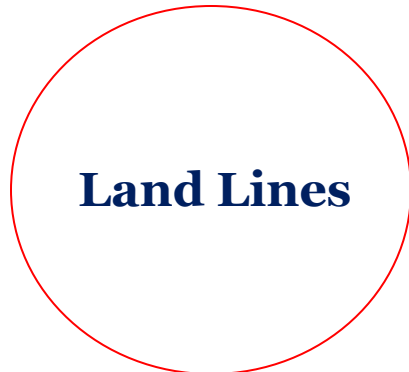
# University of Pittsburgh Regional Biocontainment Laboratory







# Communication Alternatives: The options





# Varying Communication Methods



Animal Care Staff  
Facilities Management

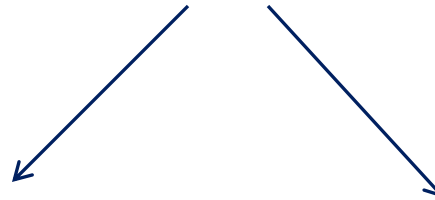


Center for Vaccine  
Research



# RBL evacuation Procedure

## Two person job



### Remote Communication

- Contact departmental managers
- Contact with Facilities Management
- Sends out Facility-wide e-mails

### Direct Communication

- Ascertain who is still within containment using the RBL entrance logs
- Call into the occupied BSL-3 and ABSL-3 spaces.
- Visual communication from the street clothes corridor



# Visual Communication from the Street Clothes Corridor



**Please Secure  
Infectious Agents and  
Exit Immediately**

**EXIT**



## Evacuating the RBL: Does it work?

Yes, but.....

### With Wireless:

1. 30 seconds
2. Single person
3. One command

### Without Wireless

1. 6.5 minutes
2. Two People
3. Multiple calls through multiple communication methods



# **Addressing Communication Challenges within a multi-suite BSL-3 Facility: Conclusions and Lessons Learned**

- Plan for the lowest level of technology (land-line telephones) even when anticipating the use of a more convenient method (wireless communication).
- The best results in communication are achieved with multi-departmental buy-in (Researchers, Facilities, Animal Care Workers, and Health and Safety).
- Low-tech solutions will require additional personnel and time
- Drill, drill, drill!!!!!!



# Thank you!

## RBL Managers

Dr. Kelly Cole

Dr. Amy Hartman

Dr. Doug Reed

Dan Divito

Dan Fisher

Dennis Heflin

Dr. Anita Trichel

Dr. Molly Stitt-Fischer

Jay Frerotte

## Environmental Health and Safety

Jay Frerotte

Dr. Molly Stitt-Fischer

...and YOU! Thank you for  
your time and attention





# Questions?

