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Development and Implementation of an Customized BSL-3 Safety Training Program

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Centers for Disease Control and Prevention (CDC)

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OUTLINE

ORGANIZATIONAL OVERVIEWS

BSL-3 TRAINING NEED IN NCIRD

TRAINING DEVELOPMENT

TRAINING IMPLEMENTATION

IMPACT & SUMMARY

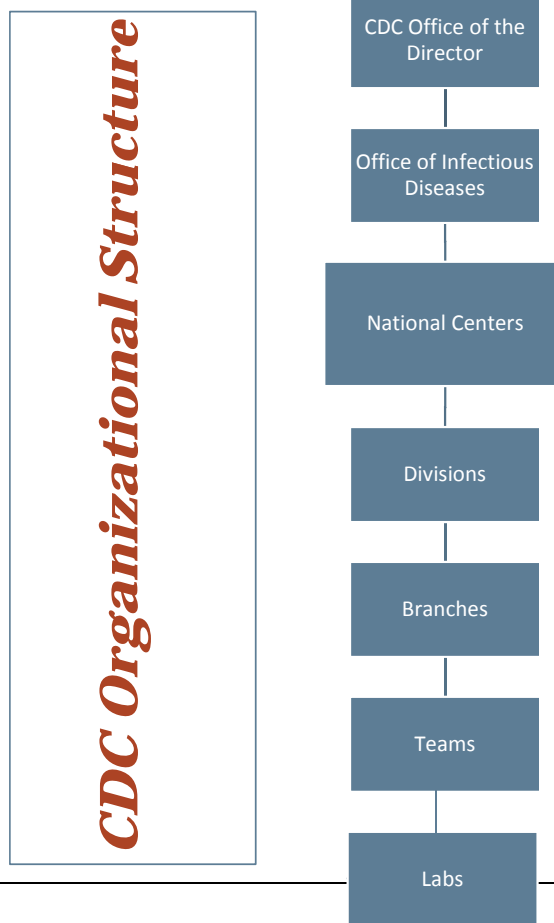
ORGANIZATIONAL OVERVIEWS

BOOZ ALLEN HAMILTON OVERVIEW

- Consulting firm for the Federal government
 - Cybersecurity
 - Biodefense
 - IT
 - Health
- Atlanta, Georgia office contracts include:
 - Centers for Disease Control and Prevention (CDC)
 - Internal Revenue Service (IRS)
 - Veterans Affairs (VA)
 - Federal Aviation Administration (FAA)
 - National Park Service



BOOZ ALLEN'S ROLE AT CDC

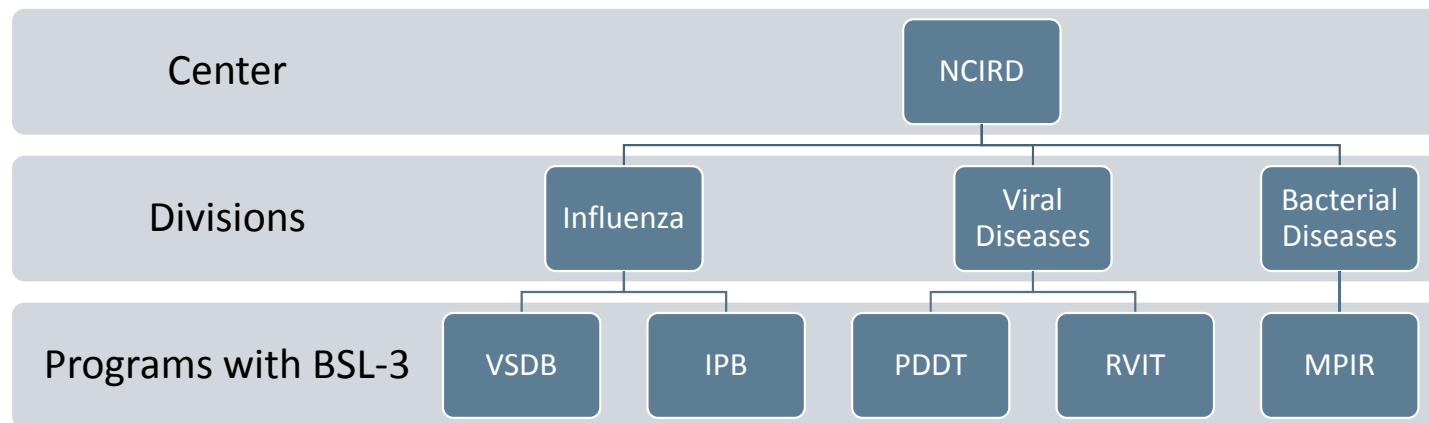


- **The ask:** Assist with the development, implementations, and maintenance of an effective laboratory quality management system (QMS) within the National Center for Immunization and Respiratory Diseases (NCIRD)
- 2015: NCIRD extended the contract to include Biosafety
- Both QMS and Safety are integral parts of the Culture of Safety at the CDC and BAH has been instrumental in assisting the growth of both fields in several laboratory programs across the CDC.

BSL-3 SAFETY TRAINING

NATIONAL CENTER FOR IMMUNIZATION AND RESPIRATORY DISEASES (NCIRD)

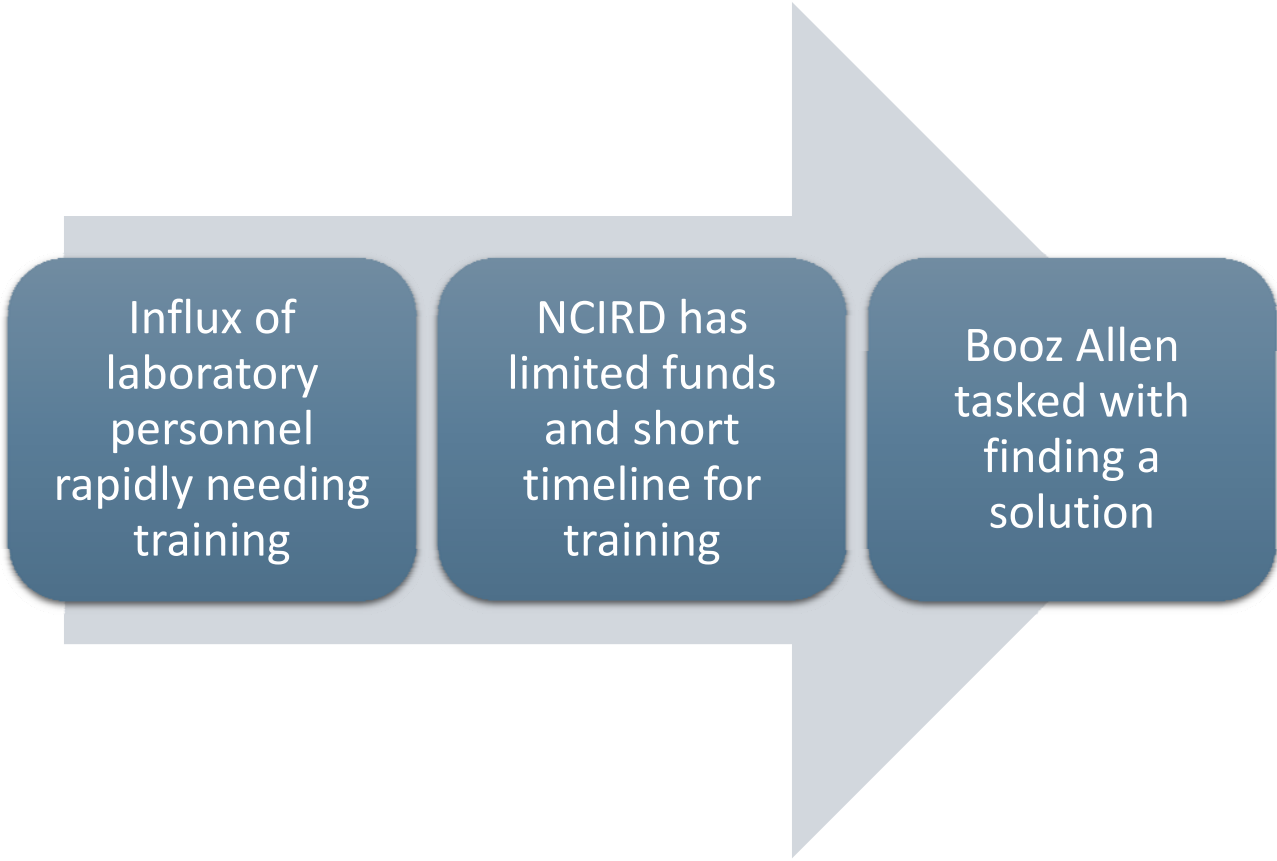
NCIRD PROGRAMS WITH BSL-3 LABS



The Task: 30+ personnel needing BSL-3 safety training

The Deadline: July 2016 (7 months away)

IDENTIFYING THE NEED



Influx of
laboratory
personnel
rapidly needing
training

NCIRD has
limited funds
and short
timeline for
training

Booz Allen
tasked with
finding a
solution

ADDRESSING CHALLENGES

Current Options



Factors to consider:

- 30+ personnel
- Short timeline
- Limited funds

Agency BSL-3 Safety Training

Generic

Limited offerings

Limited availability

External BSL-3 Safety Trainings

Costly

Limited availability

Out of state

Application of learned material

PROVIDING A SOLUTION



TRAINING DEVELOPMENT

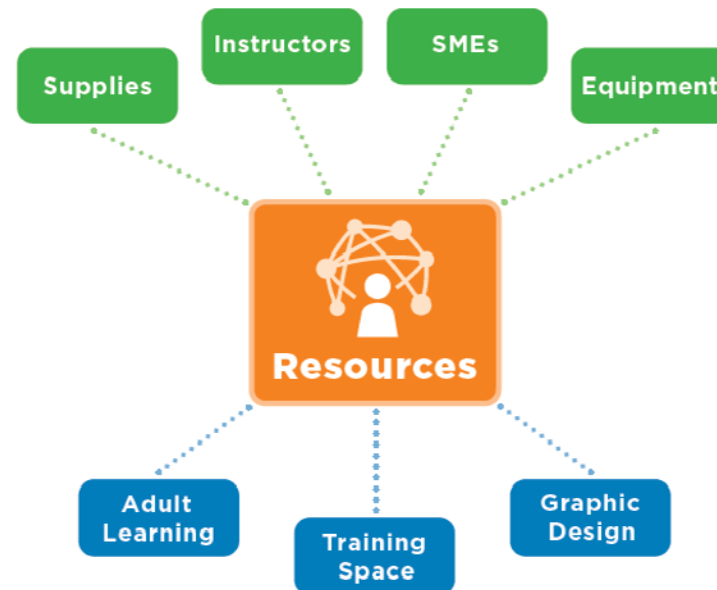
RESOURCES FOR TRAINING DEVELOPMENT

INTERNAL RESOURCES

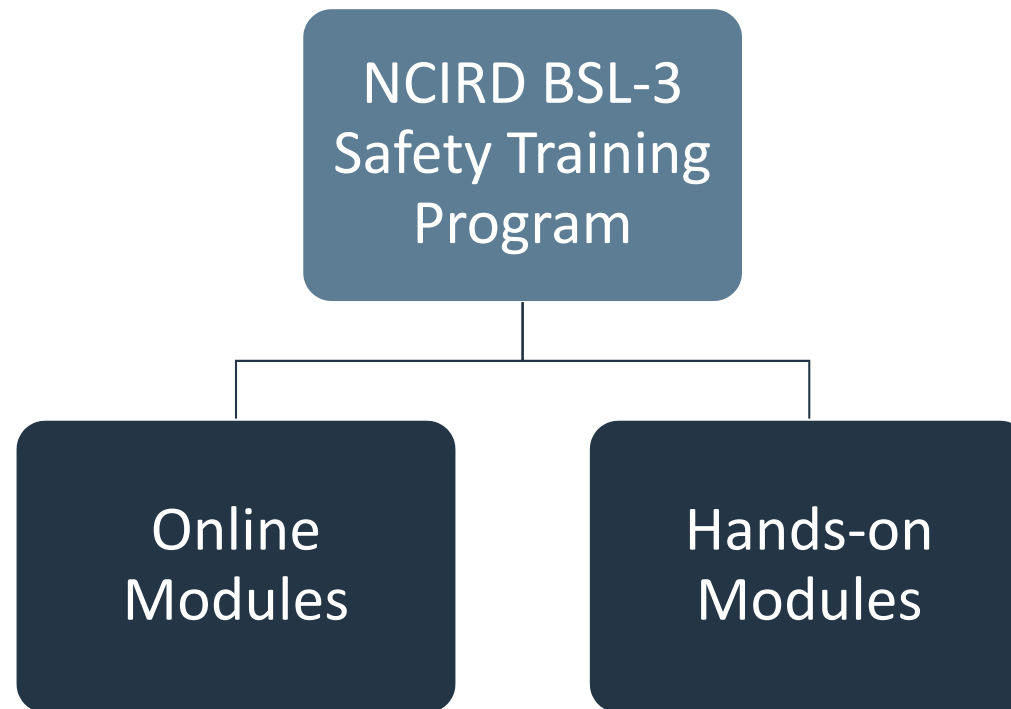
- Subject Matter Experts (SMEs)
- Instructors
- Reviewers
- Pilot testers
- Funding
- Equipment
- Photos

EXTERNAL RESOURCES

- Adult learning
- Technical editing
- Online capability
- Graphic design
- Training lab for the hands-on training
- Laboratory Safety Training Board for review
- Reviewers from other Centers



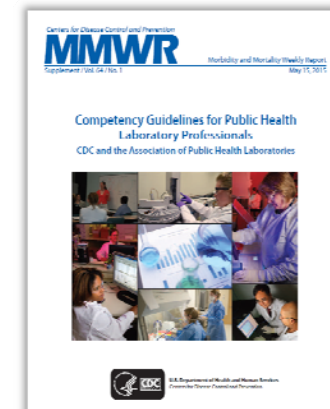
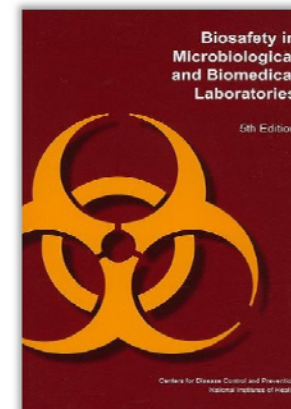
PROPOSED TRAINING LAYOUT



TRAINING DEVELOPMENT: PHASE 1 ONLINE MODULES

Phase 1 – Online Development

- The content was developed by Booz Allen and NCIRD SMEs based on applicable regulations, competencies guidance documents, and current NCIRD practices.
- All course materials went through an extensive review period including internal and external reviewers.
- After review, all content was sent to a CDC Laboratory Training Team to convert it to an online format.



TRAINING DEVELOPMENT: PHASE 2 HANDS-ON MODULES

Phase 2 – Hands-On Development

- Each NCIRD BSL-3 laboratory provided their unique Standard Operating Procedures (SOPs) to be used for the hands-on portion of the training.
- NCIRD laboratory specific SOPs, CDC policies, procedures, guidance were used to **establish baseline standards** across all NCIRD BSL-3 laboratories without changing existing procedures and practices.
- NCIRD Safety and BSL-3 laboratory personnel were also trained as instructors to teach the hands-on training.



TRAINING IMPLEMENTATION

REQUIREMENTS FOR TRAINING COMPLETION



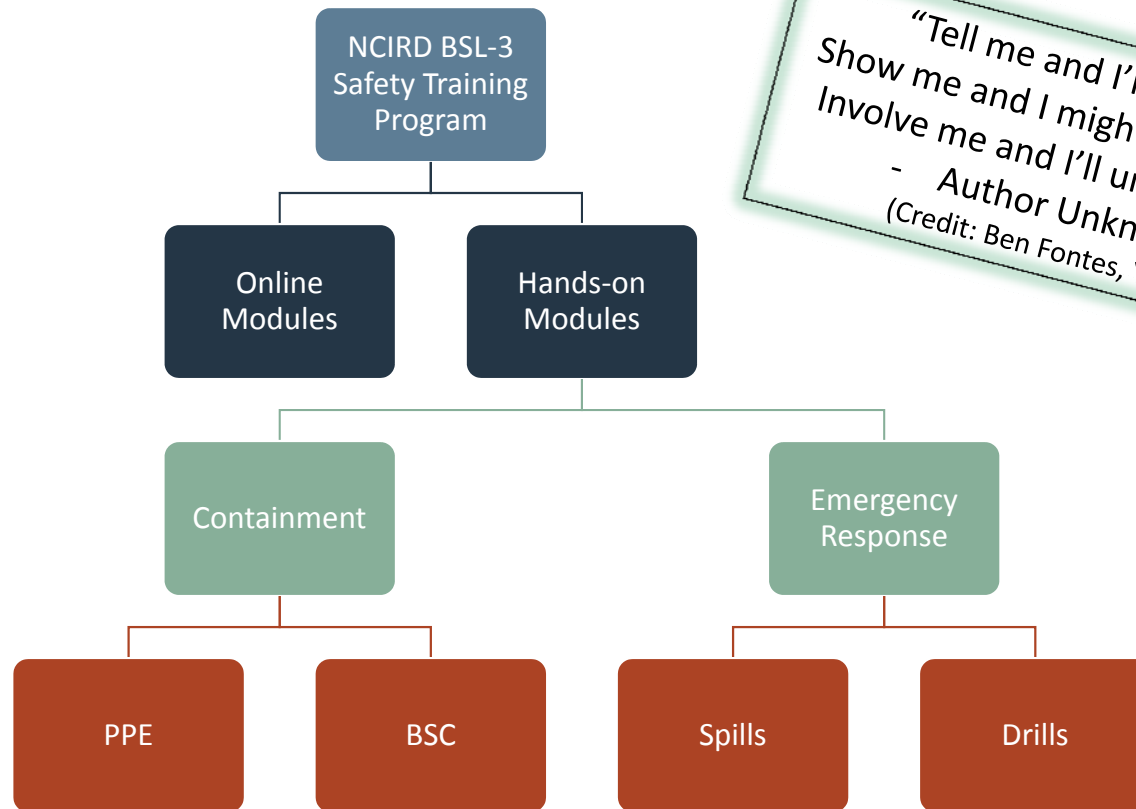
THE ONLINE MODULE SERVES AS AN INTRODUCTORY TRAINING TO WORKING SAFELY IN A BSL-3 LABORATORY

Online Curriculum

- Biosafety and Biocontainment
- Controlling Aerosols
- Facilities and Ventilation
- Personal Protective Equipment
- Decontamination
- Waste Management
- Occupational Health
- Emergency Response



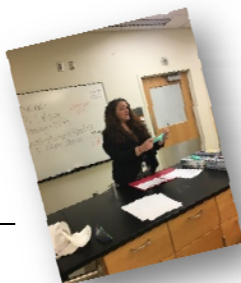
THE HANDS-ON MODULES ARE SITE-SPECIFIC AND TAILORED TO SPECIFIC NCIRD BSL-3 LABORATORY PRACTICES



*"Tell me and I'll forget.
Show me and I might remember.
Involve me and I'll understand"*
- Author Unknown
(Credit: Ben Fontes, Yale)

HANDS-ON TRAINING: CONTAINMENT SESSION

Hands-On Training: Containment Session		
	PPE Module	BSC Module
Learned Material	<ul style="list-style-type: none"> • Types and uses of PPE in BSL-3 • Integrity checks prior to donning • Proper donning and doffing • Proper disposal and/or decontamination 	<ul style="list-style-type: none"> • BSC basics • Proper surface decontamination before and after use • Pressure gauge reading • BSC operating technique
Instructor Demonstration	<ul style="list-style-type: none"> • Proper donning and doffing procedures specific to trainee's lab • Integrity checks (including flow rate checks for PAPR units) 	<ul style="list-style-type: none"> • Use smoke generator to show directional airflow under different conditions • Proper decontamination of the BSC
Competency	<ul style="list-style-type: none"> • Don/doff of exact PPE to be used in their BSL-3 laboratory • Integrity checks 	<ul style="list-style-type: none"> • Proper decontamination • Pipetting • Proper use (incl. centrifuge bucket loading and waste disposal)



HANDS-ON TRAINING: EMERGENCY RESPONSE SESSION

Hands-On Training: Emergency Response Session		
	Spills Module	Drills Module
Learned Material	<ul style="list-style-type: none"> • Biological spill kit contents and purpose • Proper clean up procedure • Proper disposal 	<ul style="list-style-type: none"> • Types of emergencies in BSL-3 • Proper response to specific emergencies
Instructor Demonstration	<ul style="list-style-type: none"> • Biological spill clean-up 	<ul style="list-style-type: none"> • OADLSS Exposure Response Flow Chart • Walk-through needle-stick and man down scenario
Competency	<ul style="list-style-type: none"> • Biological spill clean-up and proper waste disposal 	<ul style="list-style-type: none"> • Needle-stick injury response procedures • Man-down drill (with volunteer man-down)



NCIRD BSL-3 SAFETY TRAINING OVERVIEW

	Online Training	Hands-On Training
Go Live Date	July 1, 2016	July 26, 2016
Module Layout	Eight online modules; prerequisite for hands-on training	Four hands-on modules
Duration	2.5 Hours	4 Hours (1 hour per module)
Location	HHS Online Learning Portal	CDC Training Lab
Implementation Resources	CSELS, NCIRD Workforce team, HHS Learning Portal	NCIRD Safety mailbox, Training room space, trainers, equipment, supplies
Trainers	N/A	NCIRD SME staff; 1-2 per module (10 total)
Evaluation Methods	Test (80% or greater to pass)	Trainees – competency assessment Trainers/course – evaluation form

IMPACT & SUMMARY

IMPACT

- **Successes:**

- Implemented Center-wide, including seasoned BSL-3 lab staff
- 65 total trainees have completed the entire program to date

- **Accolades:**

- Well-received, trainees truly enjoyed the class
- Other Centers looking to adopt for their needs

- **Next Steps:**

- Trainees requested we convert the hands-on modules for BSL-2 staff
- Converted Spills & Drills hands-on modules to BSL-2, began training BSL-2 teams

SUMMARY

- IT TAKES A VILLAGE! (an organized, coordinated one)
- The BSL-3 Training Program is highly effective for NCIRD personnel in need of basic BSL-3 training.
 - Online course
 - In-depth knowledge on BSL-3 practices and procedures
 - Hands-on training
 - Personal interaction with trainers
 - Informal and meaningful discussion



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- Adam Johnson*
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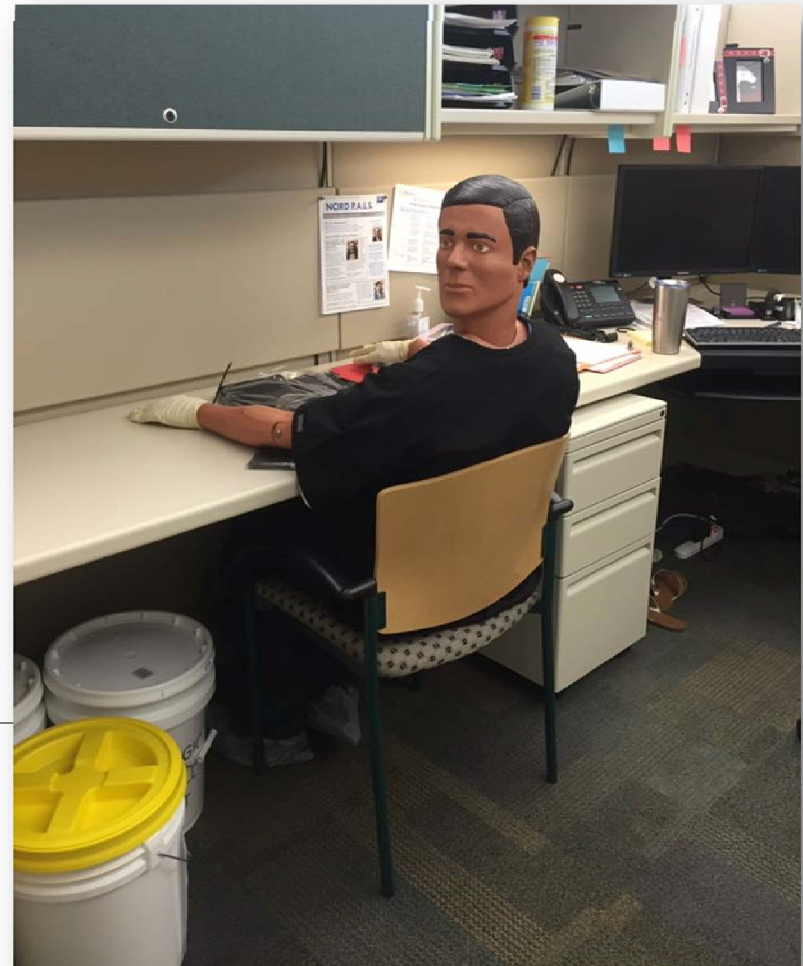


*Denotes trainer

For more information about the BSL-3
Safety Training Program please contact:

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QUESTIONS?



BOOZALLEN.COM/CAPABILITY