
HDR

RIGHTSIZING

CONTAIMENT LABORATORIES

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- Programming
- Benchmarks
- Formula

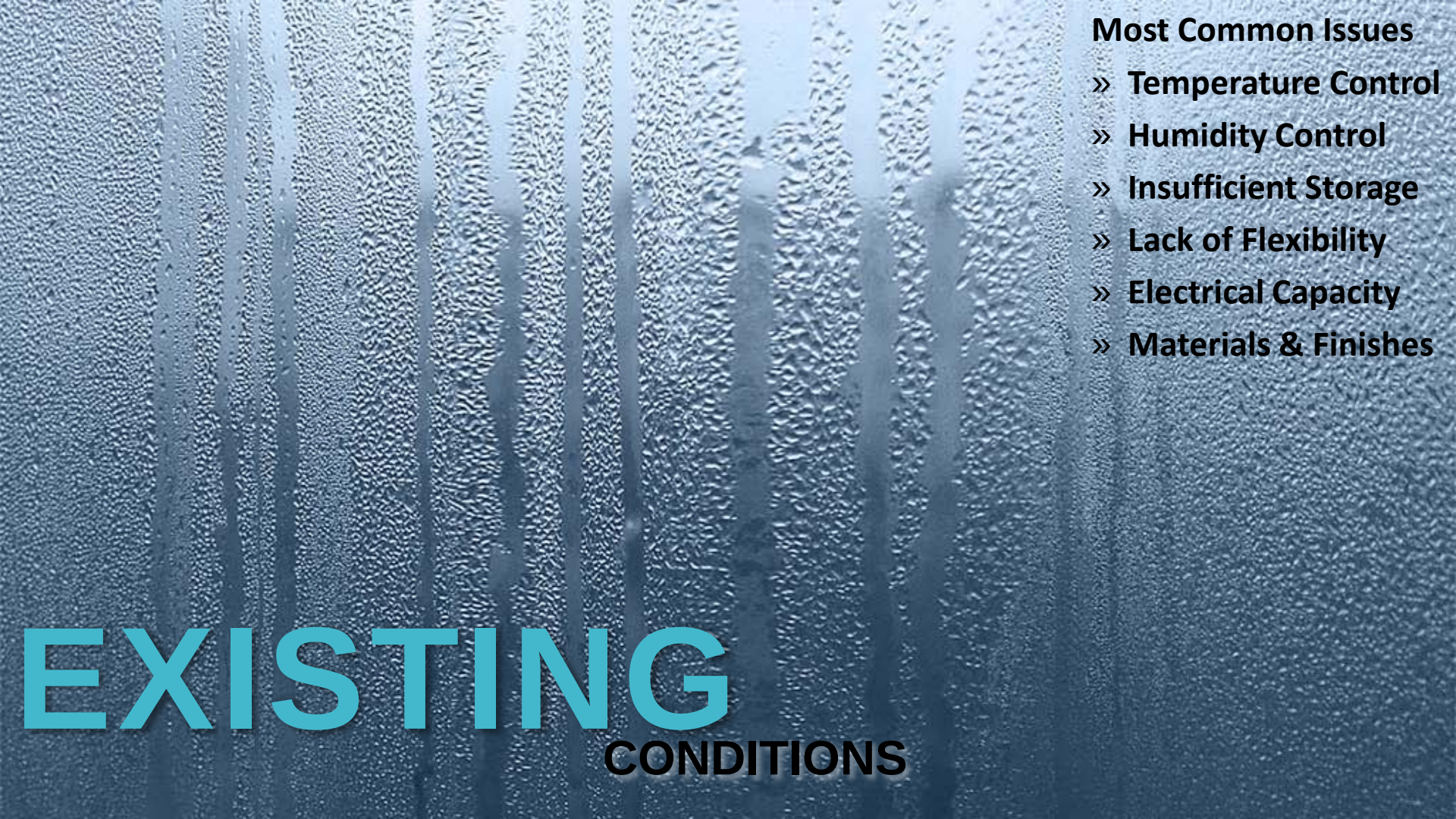
PROGRAMMING

- Mission
- Drivers
- Existing Conditions Analysis
- Future Considerations
- User Interviews


» Diagnostic Testing
» Research
» Epidemiological Surveillance
» Vaccine Production / Drug Development
» Training
MISSION

DRIVERS

- Sustainability
- Cost
- e
- Aesthetics
- Functionality
- Safety
- Schedule



EXISTING CONDITIONS

Most Common Issues

- » Temperature Control
- » Humidity Control
- » Insufficient Storage
- » Lack of Flexibility
- » Electrical Capacity
- » Materials & Finishes

- Flexibility
- Growth Strategy
- Innovation
- Emerging Disease Threats
- Change?

BENCHMARKING

- Industry Standards
- Peer Institutions
- New Technologies

INDUSTRY STANDARDS

- 420 NSF Per Full Time Laboratory Worker
- Includes:
  - Office Space
  - Amenity Space
  - Laboratory Space
  - Laboratory Support Space

INDUSTRY STANDARDS

- Increased Space Need for:
  - High Containment (BSL-3 & BSL-4)
  - Manufacturing
  - Animal Facilities

ANIMAL FACILITIES

- Three Primary Methods of Approximation:
  1. 30-40% of Total Research Space
  2. 420 NSF per Principal Investigator
  3. Based on Actual Animal Populations


FEW FACILITIES ARE
IDENTICAL

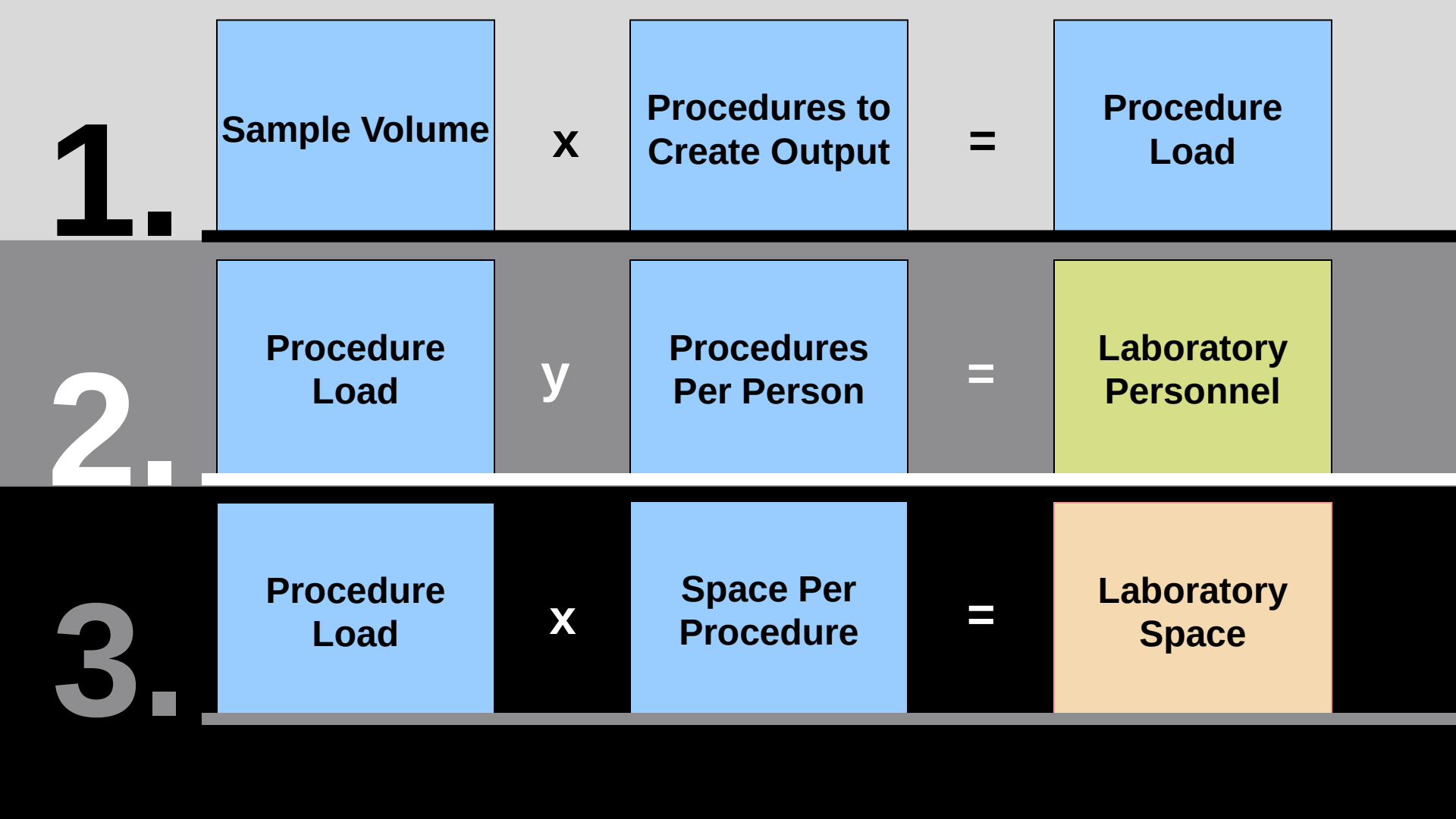

THINK
BEFORE YOU COPY

FORMULA

- Benefits
- Variables
- Influencing Factors
- Space Need
- Staff Need

BENEFITS

- Independent of User Request(s)
- Can be Adjusted for Any Science With Appropriate Inputs
- Adds Credibility to Space Requests


1.
Sample Volume
x
Procedures to Create Output
=
Procedure Load
2.
Procedure Load
y
Procedures Per Person
=
Laboratory Personnel
3.
Procedure Load
x
Space Per Procedure
=
Laboratory Space

VARIABLES

1. Required Number of Tests to Produce Output (Procedures)
2. Time Required per Procedure (Throughput)
3. Sample Volume (Volume)

PROCEDURES

- Sample Receiving
- Sample Testing
- Direct Identification
- Sample Storage


Throughput Factors
» Manual = 1.5
» Average = 1.0
» Automated = 0.5
THROUGHPUT

Volume Factor

- » High Volume= 1.5
- » Average Volume = 1.0
- » Low Volume = 0.5

PROCEDURE

LOAD

Time Required Includes:

- » **Sample Prep**
- » **Testing Time**
- » **Instrument Calibration**
- » **Data Analysis**
- » **Cleaning & Decontamination**

STAFF

NEED

Includes:

- **Principal Investigators**
- **Post Docs**
- **Laboratory Technicians**

Excludes:

- **Operations & Maintenance**
- **Animal Husbandry Staff**
- **Non-Laboratory Staff**

- Equipment Space
- Open Bench Space
- Data Analysis Areas

SPACE

PER PROCEDURE

SPACE

PER PROCEDURE

- Linear Feet of Space Required for Each Test
- Includes Open Bench Space
- Includes Equipment Space

Division

Department

Group

Output		Throughput		Volume		Procedure Load		Space / Procedure		Space required		Procedures / Person		People		Total Net Lab Space
	X		X		=	0.0					/	1	=	0		
	X		X		=	0.0					/	1	=	0		
	X		X		=	0.0					/	1	=	0		
	X		X		=	0.0					/	1	=	0		
	X		X		=	0.0					/	1	=	0		
	X		X		=	0.0	X		=	0					+	
	X		X		=	0.0	X		=	0					+	
	X		X		=	0.0	X		=	0					+	
	X		X		=	0.0	X		=	0					+	
	X		X		=	0.0	X		=	0					+	

1. Briefing
2. Benchmarking
3. Formulaic

METHOD

COMPARISON

- Compare Each Method
- Identify the Anomalies
- Find Explanation

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