Yale

Guide to Business Continuity and Recovery Planning

LABORATORIES AND RESEARCH FACILITIES

Yale *Office of Emergency Management*

Table of Contents

Introduction

Although infrequent, emergencies of all types and severity occur on campus and can have a devastating impact on you, your work, and your colleagues. Consider the following situations:

- A fire breaks out in your lab or an adjacent lab, forcing you to evacuate the building…
- A sprinkler head malfunctions and floods your lab…
- A blizzard paralyzes New Haven and West Campus, closing all roads for three days…
- A pandemic flu has sickened 50% of your staff…

How would you respond to these events? What would you do to prevent a major disruption in research or the loss of valuable work? What would you do to preserve equipment, specimens, and samples?

Knowing what to do and having a plan will help limit disruptions and reduce unacceptable losses in your operations.

Research laboratories are vital to the mission of Yale University, its funding sponsors, and its many potential benefactors, present and future. Modern laboratories are extremely complex and depend on specialized equipment, supplies, environments, information technology systems, support services, and, of course, highly skilled people. Breakdowns or disruptions in any one of these elements can cause serious harm to ongoing research. Prolonged failures in some of these areas (i.e., loss of electrical power) may eventually lead to irreparable damage to equipment and the potential loss of unique collections of samples and specimens.

This guide has been developed to help laboratory managers, principal investigators, and others, develop a business continuity plan to help ensure that vital research operations can continue following a disaster or major disruption.

A Business Continuity Plan (BCP) is a collection of resources, actions, procedures, and information that is developed, tested, and held in readiness for use in the event of a major disruption of operations. This planning helps prepare Yale departments and organizations to maintain essential functions after a disaster or other major disruption. In the event of a major disaster or other disruption, having a business continuity plan will minimize the impact and help you return to normal operations as quickly as possible.

A business continuity plan is different from an emergency plan. An emergency plan tells you what to do immediately before or during an emergency, like what to do if you see a fire, or what to do during a blizzard. A business continuity plan helps you minimize the impact on our business regardless of the incident and helps you return to normal operations as soon as possible.

How to use this Guide

This guide consists of two sections. The first section will help guide you in the creation of a business continuity plan. It includes helpful information as well as useful worksheets to help collect vital information.

As you develop your continuity plan, you will inevitably identify things that are needed to help you be better prepared. It is important to capture these suggestions during the planning process. There is a Mitigation/Follow-Up Actions Worksheet at the back of the guide to help capture and manage the suggestions.

Once you have completed the first section of the guide, you will enter the information into the business continuity program software application called Archer. Archer is a cloud-based program that ensures you have uninterrupted access to your information. The system is maintained by the Office of Emergency Management and is part of Yale's overall emergency management and business continuity program. Contact the Business Continuity Program Manager at bcmanagement@yale.edu for instructions on entering your plan into the Archer application.

The second section is a response guide to use in the event of a disaster or major disruption to your department. The response guide will walk you through steps to take as you assess the damage and determine a plan of action.

If you have any questions about this guide, or if you need additional assistance in your business continuity planning, please contact the Business Continuity Program Manager in the Office of Emergency Management at bcmanagement@yale.edu.

A PDF version of this guide and additional resources are available on the Business Continuity section of the Emergency Management Web site at http://emergency.yale.edu.

Getting Started

Developing a business continuity plan may seem like an overwhelming task, but in reality you probably already have much of the required information and process. This guide will help walk you through the planning steps in a logical order.

❑ Don't do this alone. Business continuity planning is everyone's responsibility. Develop a planning team to help bring all the pieces together. Consider including your director or manager, lead administrator, ITS specialist, and other essential staff.

❑ Schedule regular meetings with the planning team. Start with one hour meetings once a week for 4 weeks. Add additional meetings as needed.

❑ Follow this guide and complete the worksheets.

❑ Review existing plans such as your department or building's Emergency Plan. They may provide helpful information for developing your business continuity plan.

Identify Key Emergency Contacts

Knowing who to contact in an emergency is critical. Start your business continuity planning by identifying the key emergency contacts for your site. Keep a written copy with you at all times and share it with others in your lab. If you are like most people, you probably keep all of your contacts in your cell phone. But what if you lost your phone? Do you have a backup copy of your contacts? How long would it take to reconstruct your contacts list? A little pre-planning now can save valuable time later. Tip: Consider creating and sharing a Google doc with critical contact information.

Other Important Contacts

In addition to your emergency contacts, you will also want to maintain updated lists of all employees, students, postdocs, essential vendors, and funding organizations/program officers. Include after-hours contact information if available. Keep copies readily accessible (i.e., Google docs) in multiple locations. Consider e-mailing the lists to yourself and saving them in a special folder so you can access them from any location. Regularly review and update lists as well as laboratory information and facility contacts cards.

☑ *Task: Complete the Key Emergency Contacts Worksheet. Give a copy to everyone on your emergency planning team. Additional copies of the worksheet can be downloaded from the Business Continuity section at http://emergency.yale.edu.*

☑ *Task: Create contact lists for important contacts (employees, students, postdocs, funding sponsors, etc.)*

Key Emergency Contacts Worksheet	
Primary Location (Building & Rooms #s):	
Street Address:	
Principal Investigator: Name: E-mail:	Business phone: Cell phone: After-hours phone:
Laboratory Manager or Senior Researcher: Name: E-mail:	Business phone: Cell Phone: After-hours phone:
Lead Administrator: Name: E-mail:	Business phone: Cell phone: After-hours phone:
Business Manager: Name: E-mail:	Business phone: Cell phone: After-hours phone:
Facilities Superintendent: Name: E-mail:	Business phone: Cell phone: After-hours phone:
EHS Safety Advisor: Name: E-mail:	Business phone: Cell phone: After-hours phone:
ITS Specialist: Name: E-mail:	Business phone: Cell phone: After-hours phone:
Other: Name: Email:	Business phone: Cell phone: After-hours phone:
Other: Name: E-mail:	Business phone: Cell phone: After-hours phone:

Determining Your Essential Functions

Essential functions are those services, programs, or activities that are necessary to the ongoing business of the university and would directly affect the success of your department if they were to stop for an extended period of time. The success of your department and the support you provide to the university rely on these functions. Stopping them for an extended period of time would cause harm to your department and the university.

Your essential functions will serve as your guide for how to restart your operations following a disaster or major disruption. They help answer the question "What is the minimum level of service or activity my department must offer to still consider us to be in business?" By identifying and prioritizing your essential functions, you can determine which personnel, facilities, equipment, and materials are absolutely necessary to keep your department functioning following a disaster or major disruption. Prioritizing your functions will also help you determine the recovery time objective (RTO) – the length of time the function can be suspended without causing significant disruption to your operations.

Typical essential functions for research laboratories include, but are not limited to:
  ➢ Conduct research
  ➢ Order supplies
  ➢ Manage staff

In general you should be able to organize your mission into three to five essential functions; more if you are a highly complex department.

Conducting a Business Impact Analysis

A Business Impact Analysis (BIA) is completed for each essential function to help assess and document potential impacts and negative consequences of a disaster or major disruption on the function. Conducting a BIA also helps establish recovery priorities by looking at dependencies, peak periods, harmful consequences, and financial risks.

Prioritizing Your Essential Functions

While everything you do each day may seem essential, in reality some functions and activities are more essential than others. Some activities can be suspended for several weeks, while others cannot be stopped for more than one day. Knowing the priorities of your functions will help you establish a recovery plan that focuses on the functions that are the most important. Below is general guidance to help you prioritize your functions.

Priority Rating	Importance	Recovery Time
Critical	Function directly impacts the life, health, safety, or security of the Yale community and stopping would have significant consequences.	< 4 hours
High	Function must continue at normal or increased level. Pausing for more than 24 hours may cause significant consequences or serious harm to business operations, upstream and downstream dependent organizations or units, revenue and finances, reputation, or other core mission services.	< 24 hours
Medium	Function must be continued if at all possible, perhaps in reduced mode. Stopping for more than one week may cause major disruption to business operations, upstream and downstream dependent organizations or units, revenue and finances, or other core mission services.	< 1 week
Low	Function could be suspended for up to one month without causing significant disruption to business operations, upstream and downstream dependent organizations or units, revenue and finances, or other core mission services.	< 1 month
Deferrable	Function may pause and resume when conditions permit. Deferring this function for more than one month may cause slight disruption to business operations, upstream and downstream dependent organizations or units, revenue and finances, or other core mission services.	> 1 month

☑ **Task: Complete an Essential Function and Business Impact Analysis Worksheet for each function you have identified. Additional copies of the worksheet can be downloaded from the Business Continuity section at http://emergency.yale.edu.**

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Essential Function and Business Impact Analysis Worksheet

Instructions: Complete one worksheet for each essential function for your department or unit

Organization or Department	
Essential Function	

Brief Description *What is this function responsible for? What does it accomplish?*	

Priority Rating + RTO *RTO =Recovery Time Objective (Maximum time this function can be down before significant problems would occur)*	Rating	Description	RTO
	❑ Critical	Directly impacts life, health, safety, or security. Cannot stop.	< 4 hours
	❑ High	Must continue at normal or increased level. Pausing for more than 24 hours may cause significant consequences or serious harm.	< 24 hours
	❑ Medium	Must continue if at all possible, perhaps in reduced mode. Stopping for more than one week may cause major disruption.	< 1 week
	❑ Low	May be suspended for up to one month without causing significant disruption.	< 1 month
	❑ Deferrable	May pause and resume when conditions permit.	> 1 month

Key Personnel for This Function	Primary: Alternate: Alternate:
Key Roles Required to Perform the Function *(admin asst., RN, manager, financial analysis, etc.)*	
Vendors Vital to This Function	

RESOURCE REQUIREMENTS

Required ITS Products and Services	❑ Network services ❑ Yale Connect (e-mail) ❑ Telecom ❑ CAS ❑ VPN ❑ Epic Others:
Required ITS Applications	
Essential External Web Sites	
Required Facilities	
Vital Records and Private Information	

DEPENDENCIES and PEAK PERIODS

Upstream Dependencies *Other departments vital to this function that you rely on*	
Downstream Dependencies *Other departments that rely on this function*	
Peak Periods *Significant or demanding months for this function*	

HARMFUL CONSEQUENCES

Suppose the essential function is not resumed quickly following a major disruption or disaster. Which of the listed harmful consequences might occur, and how long after the disaster might the harm begin to occur? Check (X) the box to indicate when harm might occur. Select N/A if the consequence does not apply to the essential function you are evaluating.

	Possible Harmful Consequence	How long after a disaster might the harm occur?							
		N/A	0-2 days	1 week	2 weeks	3 weeks	4 weeks	> 4 weeks	Comments
1	Disruption of teaching?								
2	Disruption of research?								
3	Departure of faculty?								
4	Departure of staff?								
5	Departure of students?								
6	Well-being of staff/faculty?								
7	Well-being of students?								
8	Payment deadlines unmet by campus?								
9	Loss of revenue to campus?								
10	Legal obligations unmet by campus?								
11	Legal harm to the university?								
12	Impact on other campus unit(s)?								
13	Impact on important business partner(s)?								
14	Impact on Yale's brand image?								
15	Function without power?								
16	Other harmful consequence?								

FINANCIAL IMPACTS

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Loss of Revenue *How much revenue would the department or the university loose in each time period*	None	< $10k	$10k - $50k	$50k - $250k	$250k - $500k	>$500k
Up to 1 week						
1 - 4 weeks						
1 - 3 months						
3 - 6 months						
Delayed Receipts *If unknown, skip this section*	None	< $10k	$10k - $50k	$50k - $250k	$250k - $500k	>$500k
Up to 1 week						
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Operational Costs *Costs the department or university might incur if the function is not restored quickly? Skip if unknown*	None	< $10k	$10k - $50k	$50k - $250k	$250k - $500k	>$500k
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Downstream Dependencies *Other departments that rely on this function*	
Peak Periods *Significant or demanding months for this function*	

HARMFUL CONSEQUENCES

Suppose the essential function is not resumed quickly following a major disruption or disaster. Which of the listed harmful consequences might occur, and how long after the disaster might the harm begin to occur? Check (X) the box to indicate when harm might occur. Select N/A if the consequence does not apply to the essential function you are evaluating.

	Possible Harmful Consequence	How long after a disaster might the harm occur?							
		N/A	0-2 days	1 week	2 weeks	3 weeks	4 weeks	> 4 weeks	Comments
1	Disruption of teaching?								
2	Disruption of research?								
3	Departure of faculty?								
4	Departure of staff?								
5	Departure of students?								
6	Well-being of staff/faculty?								
7	Well-being of students?								
8	Payment deadlines unmet by campus?								
9	Loss of revenue to campus?								
10	Legal obligations unmet by campus?								
11	Legal harm to the university?								
12	Impact on other campus unit(s)?								
13	Impact on important business partner(s)?								
14	Impact on Yale's brand image?								
15	Function without power?								
16	Other harmful consequence?								

FINANCIAL IMPACTS

Suppose the essential function is not resumed quickly following a disaster. What might be the financial consequences for each time period, if any, if this function is not restored? Mark (X) the box to indicate the possible financial impact.

Loss of Revenue How much revenue would the department or the university loose in each time period	None	< $10k	$10k - $50k	$50k - $250k	$250k - $500k	>$500k
Up to 1 week						
1 - 4 weeks						
1 - 3 months						
3 - 6 months						
Delayed Receipts If unknown, skip this section	None	< $10k	$10k - $50k	$50k - $250k	$250k - $500k	>$500k
Up to 1 week						
1 - 4 weeks						
1 - 3 months						
3 - 6 months						
Operational Costs Costs the department or university might incur if the function is not restored quickly? Skip if unknown	None	< $10k	$10k - $50k	$50k - $250k	$250k - $500k	>$500k
Up to 1 week						
1 - 4 weeks						
1 - 3 months						
3 - 6 months						

Developing Recovery Strategies and Tasks

When a disaster or major disruption happens, every moment counts. You have identified and prioritized your essential functions, have identified the required resources, and possibly alternate locations. The next step is to outline the actions to take after a disaster or major disruption to maintain or restore each function. This will involve developing recovery strategies and recovery tasks.

Recovery strategies are the backup plans that help you stay in business after a disaster or major disruption. They indicate what the practice or department needs to do to recover and return to normal operations. Example: If your essential function is Provide Clinical Services, then the recovery strategy is "To continue providing clinical services".

Each recovery strategy is followed by recovery tasks. Tasks are specific actions or activities taken to accomplish the strategy. Recovery tasks serve as checklists that guide your recovery actions and are organized by required resources – People, Places, and Things. Recovery tasks can help answer the basic question "What if?"

• What if 50% of your staff was out sick with the flu for several weeks?
• What if your building was destroyed by fire? Where would you go?
• What if your specialized equipment was damaged or destroyed?
• What if you lost access to the Internet?

When creating your recovery tasks be sure to include enough details to make them useful. If they are too vague they won't be helpful. Include important steps to take, required resources, and key contacts needed to complete the task. An effective recovery strategy and recovery tasks should be easily understood by all of your recovery team.

☑ *Task: Complete a Recovery Planning Worksheet for each function you have identified. Additional copies of the worksheet can be downloaded from the Business Continuity section at http://emergency.yale.edu*

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Recovery Planning Worksheet

Instructions: *Complete one worksheet for each essential function for your department or unit.*

Essential Function Recovery Strategy:
Ensure the continuation of *(enter name of function)*:

Requirements: *(List of required "must have" items or systems)*

Key Roles *(List of roles or qualifications needed for this function. Facilities supervisors, financial analysis, RN, etc.)*

Individualized Recovery Tasks
Instructions: Describe your backup plan for each of the items below. If none exists write None. Skip any Task that does not apply to this function (Example: the function does not require any specialized equipment or supplies)

Recovery Task #1: Operate with reduced staff
How would you continue this function if your usual workforce was reduced by 50% for an extended period of time?

Recovery Task #2: Loss of essential facilities
What would you do if you did not have access to the primary facilities needed for this function? List each facility and describe your back-up plan.

Recovery Task #3: Loss of essential IT services and applications
What would you do if you lost access to your essential IT services *(e.g., email, internet)* or applications *(e.g., Epic, SciQuest)*? List each service and application and describe your back-up plan.

Recovery Task #4: Loss of essential or specialized equipment
What would you do if your essential equipment failed? List the equipment and describe your back-up plan.

Recovery Planning Worksheet
Side B

Recovery Task #5: Loss of essential or specialized supplies
What would you do if you ran out of specialized supplies? How long could you function before you would need to restock? What is your back-up plan?

Recovery Task #6: Loss of essential upstream dependent departments or services
What would you do if you lost access to an upstream dependent department or service needed for this function? List each dependency and describe your back-up plan.

Recovery Task #7: Loss of utilities
What would happen if you lost basic utilities like electricity, water, HVAV? List each utility and describe your back-up plan.

Recovery Task #8: Other:
List any other essential item, service, vendor, or person, that this function replies on that is not captured above. Indicate how long could you operate without the item or person. Describe your plan for continuing operations without it / them.

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Specialized Equipment

Many labs rely on highly specialized equipment. Some of these are one-of-a-kind while others are fairly common but very expensive. Consider the most important equipment in your lab. How would you continue your research if it were damaged or destroyed? How long would it take to replace? What would you do while waiting for the new equipment to be installed? Having a detailed inventory of your essential equipment and a backup plan can help minimize the effects of a disaster or other emergency.

Business Continuity Considerations

❑ Maintain a list of specialized equipment that your laboratory relies on. Include information such as make, model, serial number, and where it was purchased. *Complete the Specialized Equipment Worksheet below.*

❑ For equipment purchased through Yale Procurement, determine if the information is still maintained in their system. Contact your business office to request a report of your recent SciQuest purchases.

❑ Determine if your building has alternate backup emergency power such as a generator. *See Loss of Power below for additional information.*

❑ Determine if critical equipment is connected to backup or emergency power.

❑ For highly customized equipment or experimental apparatus, keep duplicate copies of drawings, diagrams, plans, or specifications in a secure off-site location. Scan information if possible and store off site or on an encrypted USB storage device.

❑ Identify equipment with special utility requirements, such as process chilled water, high voltage, three phase power, etc.

❑ Ensure that equipment warranties and extended service and maintenance contracts are in force and kept up to date.

❑ Establish or adopt industry recommendations for routine calibration, testing, and preventive maintenance, and ensure they get done.

❑ Keep copies of the inventory readily accessible in multiple locations.

☑ *Task: Complete the Specialized Equipment Worksheet for your facility. Additional copies of the work-sheet can be downloaded from the Business Continuity section at http://emergency.yale.edu.*

Specialized Equipment Worksheet

Instructions: _List the specialized, hard-to-replace equipment used by your department or unit_

Equipment	Model #	Serial #	Supplier	Purchased through Yale Procurement	Yale Inventory ID #	EHS ID #	Special Requirements

Temperature-Sensitive Equipment

Most laboratories today rely on an array of temperature-sensitive equipment. Consider what would happen if this equipment failed. How would it impact your research? Having a detailed inventory of temperature- sensitive equipment and a backup plan can help minimize the effects of a disaster or other emergency.

Business Continuity Considerations

❑ Maintain a list of all of the equipment containing temperature-sensitive specimens (i.e., refrigerators, freezers, incubators, etc.). *Complete the Temperature-Sensitive Equipment Worksheet below.*

❑ Be aware of the emergency power systems for your locations and what equipment is connected to it. *See Loss of Power below for additional information.*

❑ Ensure that temperature-monitoring alarms, if equipped, are working. Consider contracting for remote monitoring through an outside vendor if necessary.

❑ Know the maximum length of time the equipment can be without power but still maintain acceptable temperature.

❑ Maintain a list of all of your temperature-sensitive specimens in each location and the approximate time limit before the specimens will be adversely affected by a temperature change. This will help you to prioritize the relocation of specimens if necessary.

❑ Identify a backup location, either within your lab or in a neighboring lab that you could use in the event of an equipment malfunction.

☑   ***Task: Complete the Temperature-Sensitive Equipment Worksheet for your facility. Additional copies of the worksheet can be downloaded from the Business Continuity section at http://emergency.yale.edu.***

Temperature-Sensitive Equipment Worksheet

Instructions: List the temperature-sensitive equipment used by your department or unit

Temperature-Sensitive Equipment *Equipment Name, ID #, Location, etc.*	Connected to Back-Up Power?	Connected to Temperature Alarm?	Max. Time Without Power	Other Information

Specialized Supplies and Essential Vendors

Laboratories require highly specialized equipment, chemicals, samples, and other materials, as well as specialized vendors. Consider how you would operate if your routine supply chains were disrupted. How long can you manage before placing your next order? What would you do if your normal supplier was no longer available?

Business Continuity Considerations

- ❑ Identify specialized supplies that you rely on. This include supplies that are difficult to obtain, require special authorization or handling, or are only available from limited vendors. *Complete the Specialized Supplies Worksheet below.*

- ❑ Identify key vendors of essential equipment, supplies, and service contracts. Contact your business office to request a report of your recent SciQuest purchases. *Complete the Essential Vendors Worksheet below.*

- ❑ Develop contact lists including routine and emergency after-hours contact information.

- ❑ Identify an alternate backup vendor for essential must-have items.

- ❑ Where feasible, increase standing inventories of crucial supplies and reagents, especially those that typically rely on just-in-time ordering.

- ❑ Review and update all contact lists on a regular basis.

- ❑ Keep copies of contact lists readily accessible in multiple locations. Share with others in your lab.

- ❑ Have a conversation with your suppliers about their business continuity plan. Propose the same scenario and ask how they plan to maintain deliveries of supplies following a disaster or other interruption to their business.

☑ *Task: Complete the Specialized Supplies Worksheet for your facility. Additional copies of the worksheet can be downloaded from the Business Continuity section at http://emergency.yale.edu.*

☑ *Task: Complete the Essential Vendors Worksheet for your facility. Additional copies of the worksheet can be downloaded from the Business Continuity section at http://emergency.yale.edu.*

Specialized Supplies Worksheet

Instructions: *List all of the* specialized supplies used by your department or unit. Create an Excel spreadsheet if your list is extensive.

Item	Vendor / Supplier	Ordered Through	Special Instructions

Essential Vendors Worksheet

Instructions: *List all of the essential vendors used by your department or unit. Create an Excel spreadsheet if your list is extensive.*

Essential Vendors			
Company Name	**Description**	**Contact Name**	**Contact Info**
			Business phone: Cell phone: E-mail: After-hours #:
			Business phone: Cell phone: E-mail: After-hours #:
			Business phone: Cell phone: E-mail: After-hours #:
			Business phone: Cell phone: E-mail: After-hours #:
			Business phone: Cell phone: E-mail: After-hours #:
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Protect Unique Specimens and Materials

Live, fixed, and frozen samples/specimens are extremely important and invaluable assets of many laboratories. Researchers collecting, developing, generating, or otherwise in possession of such materials have a high level of responsibility for their protection and future availability.

Business Continuity Considerations

❑ Maintain accurate inventory records for unique specimens and materials.

❑ Properly maintain and service all equipment and devices that secure these materials.

❑ Develop redundant storage for irreplaceable specimens (animals, plants, cell lines, DNA, etc.), if possible, preferably both on and off-site to maximize protection. Considering splitting the storage of vital specimens —separating the specimens, and storing separate collections in different locations.

❑ Develop emergency procedures that outline what to do with your specimens and how to shut down your workstation and laboratory in the event of a disaster or major disruption.

Considerations for Animal Research Labs

Research animals require special care that includes specialized environments, equipment, supplies, food and water, and, of course, qualified staff. Any of these could be disrupted by a disaster or other emergency. What if you or your regular staff were unable to reach your lab for several days? What if a blizzard closed the roads and deliveries were delayed? Do you have plans in place that will ensure the proper care of your animals?

Business Continuity Considerations

❑ Maintain detailed information about the care and feeding of all laboratory animals in the event that usual caregivers are unavailable.

❑ Keep cage cards, special instructions, and other vital information updated and easily assessible.

❑ Keep a duplicate set of instructions in a separate location from your lab.

❑ Ensure that adequate supply of special food is available and easily identifiable.

Loss of Power

One of the biggest fears of any laboratory manager or research scientist is the thought of a power outage. A power outage creates the potential for loss of valuable specimens and years of research. At some point during your research you could lose power in your laboratory due to extreme weather, rolling blackouts, or equipment malfunctions. You can lessen the effects of a power outage, and your chances of losing your hard work, by being prepared and following some easy procedures.

Business Continuity Considerations

❑ Be familiar with the emergency backup power system(s) for your area, including what is covered and how long the backup power can be relied upon. Contact your facilities manager or superintendent if unsure about backup power for your location.

❑ Verify that freezers, refrigerators, incubators, and other temperature-sensitive equipment holding critical materials are connected to an emergency power supply, if available for your lab. Consult with your facilities manager or superintendent before connecting equipment to emergency power outlets to avoid overloading circuits.

❑ Install uninterruptible power supply (UPS) for equipment highly sensitive to slight power delays or fluctuations.

❑ Know how long freezers, refrigerators, incubators, etc. NOT connected to emergency power supply will maintain proper temperatures in the event of a power failure.

❑ Maintain a list of essential equipment that may be damaged by a power surge when the power is restored.

❑ Maintain a list of essential equipment that may have an automatic "ON" switch and may come on by itself when power is restored, even if no one is around. Consider unplugging or turning off this equipment during the outage to avoid harmful effects when the power returns.

❑ Identify equipment that may need to be reset or restarted when the power is restored. (i.e., centrifuges, computers, fume hoods, etc.).

❑ Maintain a list of all of your temperature-sensitive specimens in each location and the approximate time limit before the specimens will be adversely affected by a temperature change. This will help you to prioritize the relocation of specimens if necessary.

❑ Ensure that seals to freezers are intact. Most freezers will keep their temperature steady or below freezing for up to 10 hours if kept closed and properly sealed.

❑ Identify other freezers in your lab or neighboring labs that may have their own backup power or run on CO_2 or liquid nitrogen which may be unaffected by a power outage, and discuss the possibility of sharing freezer space with them if necessary.

❑ Store or know where you can easily obtain dry ice and coolers in the event of a prolonged outage.

Loss of Basic Utilities

Power is not the only utility that may be affected by a disaster or equipment malfunction. Consider the impact of a prolonged failure of water systems, heating and cooling, or specialized ventilation systems. Some of these failures will have limited impact on a laboratory, while others may be catastrophic. The time of year will also be a factor. If the outage is expected to be short, it may be best to suspend operations until the problem is resolved. Longer outages have the potential to cause significant problems for many research laboratories.

☑ *Task: Describe how the loss of each of the following basic utilities would impact your opeations. Include any contingency plans you have in place. Example: Municipal water: Lab stores 10 gallons of distilled water in case of emergencies.*

Utility	How would an outage affect your lab?	How would you continue operating during an outage?
Electricity		
Water *(municipal)*		
Heating		
Air Conditioning		
Humidity Controls		
Ventilation Systems		

Business Continuity Planning for Information Technology

It is difficult to imagine how we could possibly work without our computers and the Internet. Whether it's a stand-alone desktop computer, laptop, tablet, high-capacity computing, or even a smart phone, we depend on computers every day. Unfortunately computers and systems can fail or get stolen. What would you do if the internet were to go down? How long could you manage? What if your hardware or software crashed or was destroyed? Do you have secure automatic backup?

Business Continuity Considerations

❑ Yale Information Technology Services (ITS) offers assistance with data backup. They can provide guidance about available solutions to back up your entire department's computers or just a single unit. Information about backup and storage options can be found at http://its.yale.edu or consult with your department's IT support provider.

❑ Laptops should be routinely backed up, either to a network server or an encrypted USB storage device.

❑ Maintain a list of vital documents, files, and folders and include how they are backed up.

❑ In the event of a network problem in which you cannot access your software or files, contact your department IT specialist or the ITS Help Desk for assistance. They should be able to help determine the nature of the problem and help you decide whether or not to retrieve your vital records from their backup.

❑ Keep duplicate copies of important documents stored in a secure off-site location or on an encrypted USB storage device.

Department ITS Support:	Name:_____
	E-mail: _____
	Cell phone: _____

☑ ***Task: Use the worksheet below to document your vital documents and where they are backed up. If your list is extensive, create an Excel spreadsheet with the information.***

Vital Documents Worksheet

Document	Primary Location	Backup Location
Example: List of equipment vendors with after-hours emergency contact information	*SharePoint - emergency procedures folder*	*Copy on USB flash drive kept by business manager*

Drives, Files, Folders Worksheet

Drives, Files, and Folders	How backed up and how often	Who to contact to access backup copies
Shared files on department server *(public files that all staff can access)*		
Restricted department files and documents *(only accessible to selected staff)*		
Files and documents on individual staff computers		
Department file server		
Other files or documents		
Other files or documents		

☑ *Task: Write a brief explanation of how your department's electronic information is backed up. Identify where the bulk of your documents and files are stored and how they are backed up. Include department-specific servers and files as well as how individual workstations get backed up. Include key contact names and numbers to ensure that the information remains available to your department even if there is staff turnover.*

_____
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Other Vital Documents

While most documents and files are sent and kept electronically, there are still occasional paper copies of research notes, letters, and other documents. Consider how difficult it would be to replace these items. What if you couldn't get back into your lab to retrieve your lab notes?

Business Continuity Considerations

❑ Ensure that research notes, notebooks, letters, documents, spreadsheets, etc. are backed up to a network drive every day.

❑ Keep duplicate copies of irreplaceable notes, notebooks, manuscripts, and other documents in a safe location away from your lab or usual worksite.

❑ Regularly scan and save these items onto a network drive or onto an encrypted USB storage device.

❑ Regularly back up all information stored on laptops and tablets.

Peer Support

During a disaster or other major disruption, consider the support that might be available from others in your field who are conducting similar research. Do you have a colleague or collaborator using the same samples, specimens, or equipment? Is there another university nearby with similar research facilities that you can turn to for support?

Business Continuity Considerations

❑ Create a list of peers, colleagues, or collaborators who might be able to assist you following a disaster or other disruption.

☑ **Task: Use the worksheet below to document your support network.**

Peer Support Network			
Peer/Colleague	**Department/Institute**	**Contact Information**	**Assistance they might be able to provide**

Emergency Relocation

A disaster, whether large or small, could force you to relocate your operations for an extended period of time. A laboratory fire, chemical spill, sprinkler malfunction, or even smoke from a fire in another lab, are just some of the incidents that might require you to relocate. Total recovery and restoration may take several days to several months. Where would you go if you couldn't use your current site? Do you have an available "hot site" you can move to immediately? Do you have a location in another building where you can transfer some or all of your work? Can you co-locate with a colleague in another lab? Planning now for the unthinkable will save you valuable time in the event it happens.

Business Continuity Considerations

❑ Consider developing a partnership with other departments on campus that conduct similar research or use similar equipment as you. Arrange to store duplicates of vital records, backup supplies, and other materials in their lab. Review the partnership annually.

❑ Create a list of other laboratories or universities with similar equipment or running similar research.

❑ Identify the minimum alternate site requirements needed to resume operations if you were forced to relocate.

Non-Yale Backup Sites

If a Yale property is not available, it might be possible to relocate your work or research to a non-Yale facility. The greater New Haven area is host to several other schools and universities which might have specialized space that could be utilized during a disaster. Consider reaching out to a peer to identify possible off-campus space that might meet your needs.

☑ ***Task: Write a brief description of the minimum space requirements of your work location. Include the total square footage, room configurations (number of benches, cubical, offices, etc.), storage, utilities, environmental controls, and other requirements. Documenting this now will help if you need to find an alternate site quickly after a disaster.***

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Alternate Site Worksheet	
Alternate site location	
Street address	
Contact	
Essential functions that could relocate to this site	
Staff that could relocate here	
Essential supplies and equipment already at site	
Specialized supplies and equipment needed	
Summary of any limitations or special considerations if this site were to be used	
Other helpful information	

Emergency Communications and Notification

Effective communication, both internally and externally, is crucial during any emergency, but also a frequent point of failure. Poor communication is often a top criticism after an incident. Effective emergency communications is more than just sending timely messages. Consider the following when developing your emergency communications plan:

❏ Who do you need to communicate with? Employees, students, visitors, vendors, department leadership?
❏ Who is responsible for communicating to each group?
❏ How will you communicate? E-mail? Phone? Text?
❏ What do you need to say? What do they need to know?
❏ How often will you communicate?

Business Continuity Considerations

❏ Make a list of your department's most important customers and all students/staff/faculty. Plan to communicate regularly with them before, during, and after an incident. Share your communications plan with them.
❏ Share your contacts list with key members of your staff in case you need their help with notifications.
❏ Create an emergency notification "call tree" to use during a disaster. *See below for instructions.*
❏ Prioritize who needs to be called and when they are called. Should you call your department chair before you notify students?
❏ Review and update all contact lists on a regular basis.
❏ Test your communications plan at least once per year.

Emergency Notification "Call Tree"

An emergency notification call tree is a quick and convenient way to notify your key contacts. To set up a call tree, identify who needs to be called and who will call them. Determine who has the authority to activate the call tree.

Example call tree format:

Department Director *Activates the call tree*		
Who Will Notify Students*	**Who Will Notify Staff & Faculty***	**Who Will Notify Vendors***
Student, phone # Student, phone # Student, phone # ⬇ ⬇ *Call everyone on list* *Report back to Director*	Staff, phone # Staff, phone # Faculty, phone # ⬇ ⬇ *Call everyone on list* *Report back to Director*	Vendor, phone # Vendor, phone # Vendor, phone # ⬇ ⬇ *Call everyone on list* *Report back to Director*
Department Director		

*Have a designated alternate for each call group in case the primary person is not available.

Emergency Notification by E-Mail
A call tree can also be done by e-mail. Create a group list of everyone to be contacted. Send out a test message at least once a year to ensure everyone is on the list. When sending out an emergency message, ask for a reply (either Reply All or just Reply to you) so you know who has received the message. *Note: Power or IT outage may impact sending and receiving e-mail.*

Emergency Notifications by Text Messages
Text messaging utilizes cellular phone service but can be more reliable during a disaster or other emergency. Even when cellular service is too weak or overloaded for voice calls, text messaging will often go through.

☑   *Task: Create an Emergency Notification Call Tree*

Employee Preparedness

The most valuable resources at Yale are human resources. Following a disaster or other emergency, all of your preparedness and planning will go to waste if you don't have qualified people available to help execute the plan. Employee preparedness is an important part of your overall emergency preparedness planning and will help increase the likelihood that your employees will be safe and available after a disaster.

Employee Preparedness Considerations

❑ Ensure that your personnel are familiar with all aspects of your emergency and business continuity plans.

❑ Encourage them to have a personal preparedness plan at home. This should include an emergency communications plan as well.

❑ Encourage them to have a home and work disaster plan and disaster supplies kits.

❑ Encourage them to keep their emergency contact information updated in the HR system or SIS.

Additional Emergency Preparedness Considerations

Home and family: Prepare your home and those who depend on you by creating an emergency plan that includes your emergency communications plan, information about what to do if you must evacuate, and how to shelter-in-place. Assemble a disaster supplies kit that includes essential items that you and your family would need if you had to evacuate or if you had to shelter-in-place for several days. Remember to consider the special needs of elderly family members, infants and children, and pets. Assemble a kit for your car as well. Additional information about emergency preparedness can be found at http://emergency.yale.edu/be-prepared and www.ready.gov.

At work: Talk to your supervisor about what your responsibilities will be during a campus emergency. This includes clarifying expectations and reviewing emergency plans and notification procedures. Employees who perform critical functions (support life, health, safety, security) may be required to stay at or report to work during a disaster. Assemble a workplace preparedness kit. Include change of clothes and shoes, medications, personal hygiene items, mobile device charger, snacks, and water. Additional information about emergency preparedness can be found at http://emergency.yale.edu/be-prepared and www.ready.gov.

Testing/Exercising Your Plan

Once your business continuity plan is finished, you will want to test it to be sure you and the rest of your department or unit are familiar with it. One way to test your plan is to conduct a Tabletop Exercise or Walkthrough. Include all of your planning team as well as others in your unit who would be involved during and after a disaster or major disruption. Develop a plausible scenario that might impact your department (e.g., fire, sprinkler malfunction) and discuss the actions you would take to maintain your operations. Compare your discussions with your plan and make any adjustments as needed. Additional information about conducting a tabletop exercise can be found at https://emergency.yale.edu.

Summary/Next Steps

Business continuity planning does not begin after disaster strikes. Planning begins right now, with you and your co-workers completing this guide. The information you have collected and the conversations you have with your staff will help prepare you to respond quickly and efficiently to any emergency and to establish a recovery plan that will minimize interruption to your vital work.

Having a business continuity plan will not prevent a hurricane or a burst sprinkler pipe, but it could potentially save you thousands, possibly millions, of dollars in losses, and years of research.

Now that you have completed the guide, here are a few final steps.

➢ Review the Mitigation/Follow-Up Actions Worksheet and establish a plan to complete the outstanding actions.
➢ Upload your plan into the Yale Office of Emergency Management business continuity application. Contact the Business Continuity Program Manager at bcmanagement@yale.edu   for information and training.
➢ Make an electronic copy of the complete guide and share it with the members of your planning team.
➢ Keep copies, either hard copy or electronic, at a separate location from your primary worksite.
➢ For a large department, create an executive summary and distribute it to everyone during a staff meeting.
➢ Test your plan with your entire department by conducting a tabletop exercise.
➢ Plan to review your plan in one year. Schedule the meeting now so you don't forget.

Mitigation/Follow-Up Actions

> ☑ *Task: Use the worksheet below to capture suggestions and ideas that have been identified during the planning process that need to be addressed. Additional copies of the worksheet can be downloaded from the Business Continuity section at http://emergency.yale.edu.*

Mitigation/Follow-Up Actions Worksheet

Instructions: List significant issues that have been identified during the planning process that need to be addressed. Include any possible solutions, due date, responsible parties, and date issue was resolved

Business Continuity Issues / Problem	Possible Corrective Action(s)	Assigned To	Due Date	Completion Date

Emergency Response Guide

Contents

Attachments:

Introduction

This guide has been written to help you respond to a disaster or emergency that interrupts your business operations and delays or prevents you from continuing your normal day-to-day operations. The guide will walk you through steps to take as you assess the damage and determine a plan of action. Some of the information in this guide may not be applicable depending on the situation. Additional help is available from the Yale Office of Emergency Management and the Business Continuity Program Manager.

Immediate Actions

Safety Precautions
- Always consider your personal safety and the safety of others first
- Do not enter a building or work space if there has been significant damage
- Do not walk in flooded areas especially if there are electrical cords or power strips on the floor
- If you see or smell smoke, or smell gas, evacuate the area and call 911

Stop further damage and protect your equipment
- Contact the Facilities Operations Customer Service Center immediately at **432-6888**
- Secure confidential information

For water damage (flooding, burst pipe, fire sprinkler activation)
- Cover computers, printers, etc. with plastic sheeting or garbage bags
- Move sensitive equipment if possible
- Collect vital documents such as research notebooks, etc.

Notify department staff and other building / space occupants (e.g., principal investigators)

Secure confidential information / research

Work with Facilities to evaluate the need for a clean-up / restoration crew

Assessing Damage

Determine extent of damage
- How many offices / work spaces are damaged and how bad?
- How many staff are impacted and to what extent

Determine if any sensitive documents and/or research are at risk.

Contact department ITS support specialist or ITS Help Desk if computers and other network equipment are damaged.

> **Helpful Hint:**
> Ask each staff person to do a quick assessment of their space. Use the Damage Assessment Checklist (Attachment 1). Use your staff roster or department directory to conduct a call-down. Ask each staff to report to the office to help with the damage assessment.

Determine Business Disruption

Work with the Facilities Supervisor / Superintendent to get an estimate of how long your operations will be disrupted. Ask the following questions:
- How long will clean-up and full restoration take? *This will be a rough estimate*.
- Can you remain in the space (or some of the space) during the clean-up?
- What furniture will need to be moved?

If offices / space need to be evacuated and operations relocated, establish restoration priorities:
- Determine Essential and Non-Essential Functions. What must continue and what might be postponed?
- Can anyone work from home? For how long?
- What offices / work space should be repaired first?

Determine Plan of Action

If clean-up and restoration will only last for a few days and you can remain in the space:
- Prioritize usable work space for essential functions
- Adjust work space to accommodate cleaning and restoration
- Assign staff to temporarily work from home or other space, if possible

If clean-up and restoration is extensive and you cannot remain in the space:
- Activate your Business Continuity Plan, if created.
- See Relocation Checklist below

Relocation Checklist

Determine who is moving and how much total space you need:

> **Helpful Hint:**
> Use your staff roster or department directory to determine who needs to move and what support they will need (furniture, computer, desk phone, etc.). Complete the Staff Relocation Worksheet (Attachment 3).

- Who can work from home?
- Who needs to be relocated?
- How many work stations will you need?
- How many individual private offices will you need?

Determine where you can move to:
- Do you have other office / space immediately available?
- Is there space in the same building?
- Contact your Lead Administrator or Business Operations for help locating temporary space.

Determine support needs:
- Furniture / equipment. Can any be moved from current location?
- IT / Telecom equipment needs: Computers, printers, desk phones, etc.
- Specialized equipment needs? Lab equipment?
- Access to essential documents / files?
- Security Access to new location?

Key Contacts to help you relocate:

Department	Name	Phone #	How they can help
Department Director			Help set priorities
Lead Administrator			Help with finance
Facilities			Help find space
ITS / Telecom			Set up computers, printers, network, phones, etc.,
TR&S			Help with moving, boxes, storage options, etc.
HR			Update staff work locations
Security			Building access, security patrols
Yale Mail Service			Forward or hold mail delivery
Custodial staff			Help with cleaning of new space, garbage pick-up
Safety Advisor (EHS)			Safety and environmental monitoring
University Properties			For Leased Space

Others People to Contact

- Customers, Clients, Students - anyone who regularly comes to your site
- Vendors that deliver

Ongoing Communications with Staff / Students / Clients, etc.

- Forward desk phones to new phones or cell phones
- Post signs on all entrance doors with temporary address
- Inform others in the building that were not impacted of your new location
- Assign someone to stop by old location every day to make sure nothing was dropped off or left there.

Financial Recovery

Work with the Manager of Claims and Loss Control to determine if insurance will cover any costs.
- Contact the Manager of Claims and Loss Control to begin the claims process
- Itemize damaged computers, printers, phones, furniture, etc.
- Determine what is destroyed and what can be saved
- Track all expenses. Keep all receipts.
- Take photographs of the damage.

Notes:

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Individual Damage Assessment Worksheet
Instructions: Complete one form for each office or work space that was affected.

Employee Name:	Title:
Address of Damage:	Room Number:
Date of Incident:	Date Completing Form:

Incident Summary

❑ **Burst Water Pipe** ▶ ☐ Fire System ☐ Heat/AC System ☐ Waste ☐ Other:_____

❑ **Fire**

❑ **Flooding**

❑ **Other:** _____

Space Affected

❑ Individual Office   ❑ Shared office   >   Shared with:_____

❑ Cubical   ❑ Lab / Research

❑ Storage   ❑ Library / Museum   ☐ Other: _____

Overall Damage Assessment

Brief description of damage: _____

_____

_____

Itemized Damage Assessment

Item	Destroyed	Major	Minor	Comments / Damage Caused By
Computer				
Monitor				
Printer				
Phone				
Files, Documents				
Desk				
Chair				
File Cabinet (not files)				
Bookshelf				
Rugs				
Other Furniture				
Specialized Equipment				

Attachment 2
Recovery Contacts Worksheet

Instructions: Use this worksheet to help keep track of the different people you are working with

Department	Services	Dept. Phone #	Contact Name	Contact Phone #
Environmental Health & Safety – Safety Advisor	Containment and clean-up of hazardous materials. Air quality testing.			
Facilities – Custodial Lead	Clean-up, water removal, etc. Supplies (trash bags, etc.)			
Facilities – Project Management	Coordinate restoration and repairs.			
Facilities – Superintendent	Assist with damage assessment and estimating restoration.			
ITS Support Specialist	Move computers and printers. Help replace damaged equipment. Access to network files and backup	Help Desk (203) 432-9000 helpdesk@yale.edu		
Lead Administrator or Business Operations				
Office of Emergency Management – Business Continuity Program Manager	General guidance and support. Assist as needed with relocation and other needs			
Restoration Contractor				
Risk Management – Claims and Loss Control	Assess insurance coverage and claims payments.			
Security Operations	Notify of change. Patrol new and vacant locations			
Security Systems	Access control at new site.			
Telecom	Phone services (desk and cell phones)			
TR&S	Help with moving furniture and equipment. Boxes and packing supplies.			
Other:				

					Attachment 3									
					Staff Relocation Worksheet									
Instructions: List staff and indicate their space and equipment needs. Only include the items they need but don't have as a result of the event.														
Staff Member	**No Needs / Same Space**	**Work from Home**	**New Location**	**Workstation / Office Needs**										
				Private Office	**Cubical**	**Computer**	**Monitor**	**Printer**	**Phone Desk/Cell**	**Office Files**	**Access to Server**	**Special Equipment**	**Special Space**	

Contact Us
Business Continuity Program
BCManagement@yale.edu

Yale Office of Emergency Management
OEM@yale.edu

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