

KSOM NORRIS CANCER CENTER BUSINESS CONTINUITY PLAN

Introduction

The mission of the USC Norris Comprehensive Cancer Center is to make cancer a disease of the past by advancing and integrating research, education, and personalized patient care.

The USC Norris Comprehensive Cancer Center is an innovative leader in the cancer field, setting a global standard for cutting edge research that is accelerating programs to prevent, control, and cure cancer. We have created a highly inclusive and engaging culture of collaboration, an environment that fosters and supports revolutionary, interdisciplinary approaches to the treatment and prevention of cancer. We are a magnet for the best minds in integrated cancer research and education, and deliver promising clinical trials to a diverse patient population and support for their families. We are a preferred destination for patients, clinicians and scientists who seek advanced research, clinical trials and exceptional compassionate care.

The USC Norris Comprehensive Cancer Center is a major regional and national resource for cancer research, treatment, prevention and education. Over 200 basic and population scientists, physicians from the faculty of the Keck School of Medicine of USC and several USC professional schools/departments and the College of Letters, Arts and Sciences who are members of the USC Norris Comprehensive Cancer Center investigate the complex origins and progression of cancer, develop prevention strategies and search for cures. The National Cancer Institute (NCI) has designated the USC Norris Comprehensive Cancer Center as one of the nation's 45 comprehensive cancer centers, a select group of institutions providing leadership in cancer treatment, research, prevention and education. USC Norris Comprehensive Cancer Center has held this designation since 1973, when it was named as one of the first eight comprehensive cancer centers.

Research

USC Norris Comprehensive Cancer Center scientists work toward a complete understanding of the most fundamental aspects of cancer. They study the abnormal cell growth characteristic of cancer to determine what goes wrong and how the process can be altered. They then work to quickly translate those findings into treatment and prevention strategies. Research at USC Norris Comprehensive Cancer Center is organized into seven research programs. The formal program alignment of the USC Norris Comprehensive Cancer Center members has been carefully determined to promote the Center's overall goal of fostering collaborative research in the areas of basic, clinical, epidemiological, cancer control, and translational research.

The facilities occupied include the Ezralow Tower (NOR), Harlyne Norris Research Tower (HNRT), and Topping Tower (NTT).

Patient Care

USC Norris Comprehensive Cancer Center provides comprehensive care for patients in its affiliated hospitals and outpatient clinics and conducts hundreds of clinical trials, offering the latest in innovative cancer treatments. USC Norris Comprehensive Cancer Center affiliated hospitals include the USC Norris Cancer Hospital, Children's Hospital Los Angeles, Keck Hospital of USC and Los Angeles County + USC Medical Center, one of the largest teaching hospitals in the nation.

In order to prepare for an emergency, our office has:

- 1) Established an emergency call plan
- 2) Put the necessary measures in place
 - Since the USC Norris shares space with the hospital, we follow the hospital's emergency response protocol for the building. Both Alfred Ascencio and Janet Villarmia are members of the emergency response team and have attended training provided by the hospital.
 - Our computers and information systems are backed up by Keck IT.
 - *In the event of a major power outage, earthquake, or other disaster, what plans would you implement to protect and replace critical supplies or equipment in your department? This would include redundant supplies/ equipment stored, alternate suppliers, disaster agreements with suppliers, contingency plans for making emergency purchases, and protective measures for critical equipment.*

Our research samples are our most important asset. The USC Norris Comprehensive Cancer Center identifies three major critical items that need to be operational to ensure the safety of our samples. The critical items include -80° C freezers, Cryogenic Storage System and CO₂ incubators. In case of a power outage and/or natural disaster, emergency shutdown protocols are implemented

The -80°C freezers have a system that will switch the electric supply of power from conventional to emergency power. The emergency power is composed of a diesel generator which is inspected weekly with fuel supply that is good for a week.

The Cryogenic Storage System is fed from a 3,000 gallon tank which can feed the system for up to one week. In the event of an emergency, the system has a manual emergency shutdown switch. All the valves will close, containing the nitrogen inside the individual feed tanks which can hold their temperature for a couple of days.

Finally, the CO₂ incubators are all plugged in to the emergency power system as well. Again when a fault is detected, the diesel generator will come on line. The emergency power supply to the incubators will last one week as well.

In case of further down time liquid nitrogen and CO₂ will be delivered by our contracted supplier Gilmore Liquid Air.

Gilmore Liquid Air (Approximately 10 miles away (15 Min No Traffic))
9503 East Rush St
South El Monte, CA 91733-1536
Tel. 626-443-1361
Fax. 626-443-1917

All other emergency related needs to the USC Norris Comprehensive Cancer Center will be handled by USC's Facilities Management Services (FMS).

- The USC Norris Comprehensive Cancer Center has identified two suppliers with the capability to transport and store our most critical biological samples in the event of a catastrophic occurrence at our facility. The biological samples would be stored in facilities specifically designed for housing samples. Below is the contact information, and storage locations for each of the identified suppliers.

Company: Fisher BioServices

Contact: Matthew Frazzetta

Associate Director

(916)-335-0010

Email: matthew.frazzetta@thermofisher.com

Website: www.fisherbioservices.com

Facilities: 1001 Aldridge Road Vacaville, CA 95688 and other locations worldwide

Company: Pacific BioStorage · Scientific Transport

Contact: Tom Quirk

Area Sales Representative

(310)-386-3651

Email: tquirk@pacificscience.com

Website: www.pbmml.com

Facilities: 121 Sheldon St El Segundo, CA 90245 and 1849 N Helm Ave, Ste 102 Fresno. CA 93727

Neither supplier would require disaster agreements, but they both recommend that we store our most precious biological samples with them. If we decide to store our samples with them we would be charged on a monthly basis, and the charges will be according to samples stored. The method of payment would either be credit card or PO.

Recovery & Continuity Team Roster

The purpose of this section is to identify the key team members who may be called upon at time of disaster to assist with the recovery. Listed below are the members of the team, including their contact information. *This information should be maintained on a regular basis to ensure accuracy and the ability to contact team members at time of disaster.*

Name	Role / Responsibility	Work Phone	Home Phone	Cell Phone	Primary Email	Alternate Email
Stephen B. Gruber	Director/Head of Department	323-865-0816	818-864-6159	734-904-6015	sgruber@med.usc.edu	
Janet Villarmia	Associate Director for Administration	323-865-0801	661-360-8040	818-389-3266	Janet.villarmia@med.usc.edu	jvillarmia@gmail.com
Alfred Ascencio	Facilities Manager	323-442-7725	323-222-6313	213-434-1767	alfred.ascencio@med.usc.edu	alfredascencio@gmail.com
Reed Comire	Informatics Director	323-442-7718		714-726-4084	Reed.Comire@med.usc.edu	reedcom@hotmail.com
Margaret Lee	Finance Manager	323-442-7740		323-821-2257	Margaret.Lee@med.usc.edu	
Joyce Tull	CISO Associate Director	323-865-0457	248-765-7552	248-765-7552	Joyce.Tull@med.usc.edu	jnancar@umich.edu
Krist Azizian	Executive Administrator, Norris Cancer Hospital	323-865-3588		818-427-2247	Krist.Azizian@med.usc.edu	
Awa Jones	Nurse Executive, Norris Cancer Hospital	323-865-3152		626-622-5489	Awa.Jones@med.usc.edu	

USC NORRIS COMPREHENSIVE CANCER CENTER

Emergency Contact Information

Facilities Manager: Alfred Ascencio

Office: 323-442-7725
Cell: 213-434-1767
Email: Alfred.Ascencio@med.usc.edu

Norris Engineering Shop: Nghia Le

Office: 323-442-8005 HSC/Operation Maintenance Dispatch Office
Cell: 323-236-3299 Mobile Number
Alternate: 323-865-3000 Norris Hospital Operator (ask to page engineer on duty)
Email: nghiaqua@ues.edu

USC Department of Public Safety (DPS)

Office: 323-442-1200

Administration: Janet Villarmia

Office: 323-865-0801
Cell: 818-389-3266
Email: janet.villarmia@med.usc.edu

DISASTER RECOVERY

Disaster Recovery/Continuity Plan Activation

1. Upon Declaration of a University State of Emergency, or the occurrence of an emergency obviously causing severe disruption or damage, department leadership may direct that the disaster recovery/business continuity plan be activated.
2. Assess the situation to determine the impact on people, facilities, systems, and operations. Determine the magnitude and estimated duration of the disruption.
3. Recovery team leader will notify Dean and recovery team members of the plan activation.
4. Establish an operations center or emergency headquarters.
 - a. The designated indoor location is Rainbow Café.
 - b. The designated outdoor location is HSC Quad.

Critical Functions Summary

Listed below are the critical functions provided in support of the university mission that must be resumed within 30 days, sorted by Recovery Time Objective (RTO):

Recovery Time Objective*	Critical Function	Description
Immediate	<i>Protection of samples, specimens, and lab equipment</i>	Management/protection of frozen specimens and cell lines in cryogenics (liquid nitrogen) and ultralow freezer (-80°C) storage. Protection of live cell cultures in CO2 incubators at 37°C.
	<i>Facilities/ Operations Management</i>	Manage and restore building security, building environment monitoring system (Metasys), and operations.
1 Day	<i>Communications</i>	Internal and external communications with key stakeholders including faculty, security, facilities, staff, and students.
	<i>Computer Systems</i>	Ensure that all administrative hardware, software and data files are secure, data backups maintained in a multi-redundant fashion.
14 Days	<i>Management of Faculty Finances (Grants, Contracts, Etc.)</i>	Ensure that all Cancer Center faculty endowment, gift and grant funds are managed in accordance with donor, government, non-government and agency instructions and restrictions and in accord with USC policies.
	<i>Operating Results/Forecasts</i>	Report all sources of Director controlled operating income and expenses (including the NCI CCSG), financial position and forecast same.

*Maximum allowable downtime, assumes the disaster occurs during a critical timeframe.

Recovery Strategies

Detailed below are the function-specific recovery strategies that may be utilized to continue operations in the event of a loss of facility, loss of technology, or a shortage of staff.

Critical Function	Description of workarounds		
	Loss of Facility	Loss of Technology	Reduced staff/faculty
Protection of samples, specimens, and lab equipment	For cryogenic and low temperature storage, establish backup programs with other institutions.	Use portable liquid nitrogen/CO2 tanks. Use mobile emergency power generator.	Share resources with adjacent buildings.
Communications	May be able to relocate temporary to adjacent buildings (ZNI, Broad, CRL, etc...) Use voice, text, or video streaming.	Establish CB radio, external email, online video streaming.	Communication will continue to exist among remaining faculty and staff.
Facilities/Operations Management	Be able to secure the card controlled entrances and buildings.	Building manager needs to have access to the Lenel Systems locally.	Consolidate efforts from FMS and building staff to maximize operations and security.
Management of Faculty Finances (Grants, Contracts, Etc.)	Managed from any other location including home with access to internet, email and USC WEBBA	Managed from any other location including home with access to internet, email and USC WEBBA	
Operating Results/Forecasts	Managed from any other location including home with access to internet, email and USC WEBBA	Managed from any other location including home with access to internet, email and USC WEBBA	
Computer Systems	Managed from any other location including home with access to internet, email and USC WEBBA.	Technology data is redundantly backed up offsite as described elsewhere in this document.	Informatics work would continue with slower response times.

Space Requirements

In the event that the existing facility is impacted, below are the minimum space requirements to continue operations:

Type of Space	Quantity	Description
Staff workspaces/office space	163	Workspace for faculty and staff
Private offices	5	As needed
Computer labs	163	Workspaces for continued computer use.
Administrative office space	5	Includes one needed for building monitoring control systems.
Laboratory	100	Laboratory Space
Parking stalls for mobile freezers	15	15 parking stalls are needed for mobile freezers / refrigerators.

Information Technology Recovery

Listed below are the critical systems that have been identified as critical to operations:

IT System or Database	System Administrator	Server Location	Data backup frequency and location	Backup server / hotsite?
Ultralow-Freezer alarm monitoring system (Metasys)	Johnson Controls	NRT LG506B	Daily NRT LG 506B	No
Liquid Nitrogen Storage Tank Monitoring System	Gilmore Liquid Air	TBD		No
Building Monitoring System (Metasys)	FMS/Johnson Controls	NRT LG 506B/NTT/NOR	Daily NRT LG 506B	Yes
Visual Basic/Excel financial reporting system/Financial Files	CCBO / KECK IT	NRT LG 509	Daily NRT LG 509 & off site with IT	Yes
KUALI, TARA, WORKDAY, eMarket	ITS	CAL data center	Replicated to Arizona hotsite	Yes
Informatics CAFÉ applications and websites	Informatics	Cal data center	Databases backed up every 12 minutes, offsite weekly. Website and server data backed up daily, offsite weekly.	No

Vital Records

Listed below are the vital records that must be protected to ensure they are not lost. Vital records may be paper, electronic, frozen samples, special collections or other media that may be needed following a disaster difficult to re-create.

Name of Record	Media Type	Primary Storage Location	Backed up?	Back-up location
Biological specimen	Physical	In liquid nitrogen/frozen	No	N/A
Biomedical samples	Physical	In liquid nitrogen/frozen	No	N/A
Cell lines	Physical	In liquid nitrogen/frozen	No	N/A
Cryogenic samples	Physical	In liquid nitrogen/frozen	No	N/A
Personnel Financial Records	Physical	Locked in filing cabinet	Yes	USC Payroll Office / Electronic Copies in Shared Drive

Resource Requirements

Resource	Minimum Needs	Full Operations	Comments
Staff	2	2 +	Minimum of 2 people in facilities department.
Computers	163	325	Minimum one server and one laptop for the building monitoring system (Metasys). 50% of 115 PI Clients & 210 staff and students
Fax Machines	3	22	NOR 8302, NTT Bridge, NRT LG506B
Printers	8	22	Admin 1, CCBO 1, CISO 2, Oncology 1, Hematology 1, EpiGenome 1, Facilities 1
Copiers	3	22	NOR 8302, NTT Bridge, NRT G511
Cell Phones	2	3	Three cell phones for facilities management
Desk Phones	163	325	Landlines are vital for communication
Freezers (-80°C)	72 ea.	72 ea.	All freezers are connected to emergency generator -power outlets and the majority are also connected to alarm monitoring system. 3
Freezers (-20°C walk-in and stand-alone units)	Five walk-ins	Walk-in and free standing units	Majority of freezers are connected to emergency generator power outlets.
4°C Refrigerators (walk-in)	10 mobile fridges	18 walk ins plus free standing units	The walk-in refrigerators are connected to emergency generator power.
37°C CO₂ Incubators	9 dewars	15 dewars	Connecting to emergency generator power outlets. Delivery of nine of CO ₂ dewars with 180 liters each.
Confocal microscopes	2	5	Connected to emergency generator power outlets.
Robotic DNA/RNA analyzers	1		Connected to emergency generator power outlets
Liquid Nitrogen	23 dewars	2200 gallons/week	NRT Freezer farm, NOR, NTT and CRL need 1200 gallons of liquid nitrogen or 23 dewars.
Building Monitoring System Metasys	Facilities Manager/ Engineer	Johnson Controls/Honeywell	A building manager and or building engineer will be needed to reset system.
Prox Card Readers	5	5	The readers are located at various locations throughout the Cancer Center. They are maintained by USCard Services and CAPS
CB Radios	3	10	CB radio is effective in the event of a disaster.

Critical Vendors and Suppliers

<i>Vendor Name / Address</i>	<i>Vendor Rep</i>	<i>Phone Number</i>	<i>Fax Number</i>	<i>Email Address</i>	<i>Description</i>
Gilmore 9503 E. Rush St. El Monte, CA 91733	Bruce Nagy	626-443-4497	626-443-1917	bruce.nagy@gilmoreliquidair.com	For liquid nitrogen & CO2 delivery.
Air Gas 4007 Paramount Blvd Lakewood, CA 90712	Rhonda Hines Sam Thompson	562-497-1991	536-497-1151	rhonda.hines@airgas.com	For liquid nitrogen & CO2 delivery.
SoCal Ice 11721 Whittier Blvd. #311, Whittier CA 90031	Humbert Flores	844-379-4234	844-379-4234	christy.socalice@gmail.com	For Dry ice
Johnson Controls 12393 Slauson Ave. Whittier, CA 90606	Patrick Gallegos Luis Mejia	866-362-7545 562-204-8071	562-464-3240	patrick.gallegos@jci.com luis.mejia@jci.com	Metasys Building Environment Control System
Yardley 3000 W. Macarthur Bl Santa Ana, CA 92704	Tom Kuper	714-241-7700	714-241-7770	tkuper@georgeyardley.com	Lab ventilation system in NRT
Pacific Dry Ice 7105 Paramount Blvd Pico Rivera CA 90670	Jesse Gudin	714-269-4421	562-949-4503	jgudin@pacificdryice.com	For Dry Ice

Internal and External Contacts

The following table lists critical internal (USC) and external (other than vendors) contact information.

Department/ Company Name & Address	Contact Name	Phone Number	Fax Number	Email Address	Description
O&M HSC NCRI USC	Nghia Le	323-442-8005	323-865-0398	nghiaqua@usc.edu	Norris Facilities Manager
Department of Public Safety USC	Charles Holloway	323-442-8565	323-442-3343	Charles.Holloway@med.usc.edu	Hospital Security Director
Environmental Health and Safety - HSC	Terry Williams	323-864-4660	323-442-2201	terrywil@usc.edu	Hazardous Materials Technician
Safety & Emergency Management	Robert Vance	323-442-9915	626-863-5045- Cell	Robert.Vance@med.usc.edu	Emergency Management Officer
Customer Resource Center USC	Renee M. Ybarra	213-740-7908	213-740-1154	arredond@usc.edu	Customer Service Coordinator
EVS Sodexo	John Glover	323-215-7657		John.Glover@Sodexo.com	General Manager
Dietary USC	Genesis Robinson	323-865-3040	323-865-3684	Genesis.Robinson@med.usc.edu	Food Service Director
Norris Hospital Administration	Krist Azizian	323-865-3588	323-385-3868	Krist.Azizian@med.usc.edu	Executive Administrator, Norris Cancer Hospital
Office of the Dean	Rohit Varma	323-442-1900	323-442-2724	deanksom@med.usc.edu	Dean, KSOM
Office of the Dean	Ted Budge	323-442-1805	323-442-2724	Budge@med.usc.edu	COO, KSOM

Employee Contact List

Employee	Home Phone	Cell Phone	Primary Email	Alternate Email
Diane DaSilva	626-304-0640	626-264-0636	diane.dasilva@med.usc.edu	dmdsilva@yahoo.com
John Johnson	323-646-0931	Same	jejohnson@usc.edu	jecruzn@hotmail.com
Dan Gerke	818-523-4812	Same	Gerke@usc.edu	Gerke.dan@gmail.com
Enrique Zelaya	626-688-6981	Same	zelaya@usc.edu	Zelaaya578@gmail.com
May Bulaon	626-330-9794	626-483-9292	May. Bulaon@med.usc.edu	maybulaon@yahoo.com
Joan McLane	949-235-0059	Same	Joan.mclane@med.usc.edu	jmclane@usc.edu
Steve Swenson	626-674-4568	Same	sswenson@usc.edu	steve@the-swensons.net
Diane Moody	626-203-8572	Same	dmoody@usc.edu	dmoody@usc.edu
Ricardo Medina	714-791-5371	Same	ricardom@usc.edu	rickrockpws@yahoo.com
Casey Catuna	805-624-1710	Same	catuna@usc.edu	bigcatuna@hotmail.com
Anthony El-Khoueiry	714-693-0626	213-458-0580	elkhouei@usc.edu	
Zeno Ashai	310-750-6968	310-961-7255	zeno.ashai@med.usc.edu	zenowain@yahoo.com
Joyce Tull	248-765-7552	Same	Joyce.Tull@med.usc.edu	jnancar@umich.edu

Phone Tree

The purpose of the Phone Tree is to inform personnel of the status of operations and reporting instructions in the event of a disaster/event during non-working hours. In the event of such an emergency, the Recovery Leader will initiate the Phone Tree.

- Janet Villarmia will call Stephen B. Gruber, Alfred Ascencio, Reed Comire, Margaret Lee, Joyce Tull and May Bulaon / Krist Azizian (hospital) and provide status/information obtained from the EOC (USC's Emergency Operations Center).
- Alfred Ascencio, Reed Comire, Margaret Lee, Joyce Tull and May Bulaon will then call each person under their respective list.
- Each person under their respective list will then call each person in their group and report back to Janet Villarmia the status of personnel in their groups.
- They will then call the recovery team leader to report the status.

START	Janet Villarmia → ↓	Alfred Ascencio ↓	Margaret Lee ↓	Reed Comire ↓	Joyce Tull ↓	May Bulaon ↓
	Stephen Gruber	FMS	Business Office Staff	Informatics Staff	CISO Staff	Hospital Staff
	May Bulaon / Krist Azizian	Lab Managers/ Faculty Heads	<name>	Lab Managers/ Core Supervisors		
	Reed Comire	<name>	<name>	Faculty Heads	<name>	<name>
	Margaret Lee	<name>	<name>	<name>	<name>	<name>
	Administration Office Staff, AYA & PEOC	<name>	<name>	<name>	<name>	<name>
	CISO (Anthony El-Khoueiry, Joyce Tull)	<name>	<name>	<name>	<name>	<name>
	Janet Villarmia	Alfred Ascencio ←	Margaret Lee ←	Reed Comire ←	Joyce Tull ←	May Bulaon ←

Business Continuity Action List

Please use this area to record any items requiring attention or further mitigation that would lead to a more robust recovery and further reduce risk.

Action Item	Supports Which Critical Function(s)	Estimated Cost	Status / Due Date	Responsibility
1. Partner with another institution to allow for temporary storage of samples in event of major disaster	Research	\$ not known	Cedars Sinai City of Hope UCLA Cancer Center Cal Tech	Janet Villarmia
		\$		
		\$		
		\$		
		\$		

PLAN DISTRIBUTION RECORD

Distribution of the Business Continuity Plan should be restricted to personnel involved in the activities for the continued operations of business and system owners. Update this table to certify that key personnel have received and hold a copy of this plan, as well as plan updates when they are issued.

NAME	TITLE	DATE
Stephen B. Gruber	Director, USC Norris Comprehensive Cancer Center	5/20/16
Janet Villarmia	Chief Administrative Officer, Associate Director for Administration & Education	5/20/16
Alfred Ascencio	Facilities Manager, Cancer Center Administration	5/20/16
Margaret Lee	Financial Manager, Cancer Center Administration	5/20/16
Joyce Tull	Associate Director, Clinical Investigations Support Office	5/20/16
Krist Azizian	Executive Administrator, USC Norris Cancer Hospital	5/20/16
Awa Jones	Nurse Executive, USC Norris Cancer Hospital	5/20/16
Nghia Le	Norris Facilities Manager	5/20/16
Anthony El-Khoueiry	Associate Professor of Clinical Medicine Medical Director of CISO	5/20/16
May Bulaon	Executive Assistant, Administration, USC Norris Cancer Hospital	5/20/16
John Johnson	Research Lab Tech III / Supervisor	5/20/16
Zul Surani	Executive Director of HSC Community Partnerships	5/20/16
Terry Church	Program Manager – Adolescence and Young Adult	5/20/16
Dianne Moody	Senior Clinical Administration, Cancer Center - Oncology	5/20/16
Reed Comire	Director of Informatics, USC Norris Comprehensive Cancer Center	5/20/16

Business Continuity Plan Maintenance Log

The business continuity plan will be updated annually. Updating may include plan evaluations, tests or exercises.

Year	Plan Reviewed & Updated	Approval
2016	<input checked="" type="checkbox"/>	<i>Stephan B. Gentry</i>
2017	<input checked="" type="checkbox"/>	
2018	<input checked="" type="checkbox"/>	
2019	<input checked="" type="checkbox"/>	