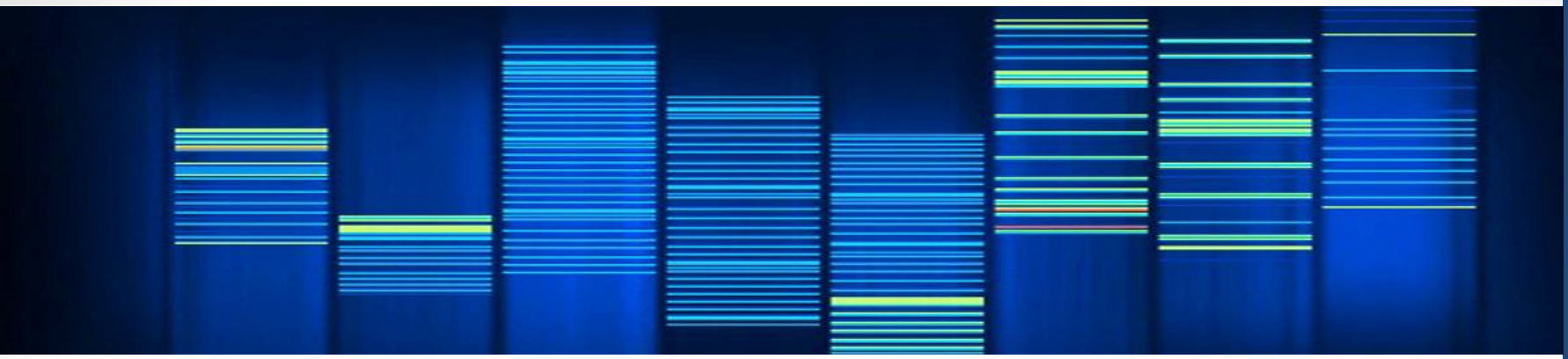


LSCF

The Life Sciences Core Facility Orientation and Site Specific Safety Training

June 2022

LSCF Services

By Appointment

Trained users have 24/7 access

- Sanger Sequencing (drop off in LS B21A, internal to LS B24)
- NGS sequencing (MiSeq) and library prep (Amplicon)
- Flow Cytometry Training
- Confocal Microscopy Training
- Instrument use assistance and training
- Assay design assistance, special projects
- Ultrapure Water (B22, past staircase near B24)
- Dark Room Facility (ERB 484B)
- Special Access Instruments: Qubit, Hydroshear
  - LSCF staff runs samples

UTA Stockroom Program

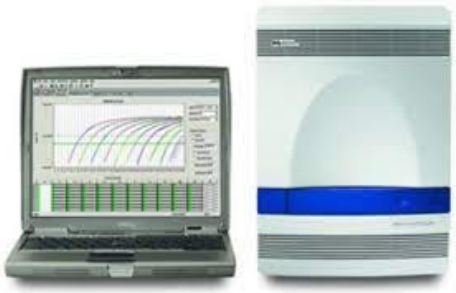
Complete list of products on our website

- **Promega-** Enzymes and molecular biology reagents
- LS -20oC stockroom, 24/7 swipe access if own Helix account
- Free Shipping on non-stocked -20oC items.

- **Qiagen-** Enzymes and molecular biology reagents
- All UTA gets 10-15% discount, with quote. Shawn.Megonigle@qiagen.com
- Core lab also gets free shipping. Inquire.

- **LightLabsUSA.com-** General lab consumables & plasticware
- LS and ERB stock
- Free Shipping on non-stocked items

Primary Facilities B24



Included in this space, and connected rooms are:

- 2 Veriti thermal cyclers
- 2 Eppendorf 5810R centrifuges with rotors for microcentrifuge tubes, 15 ml and 50 ml conicals
- Sorvall high speed centrifuge with rotors for 50 ml conical and 250 ml bottles
- AB 7300 and 7500fast qPCR instrumentation
- Azure fluorescent/chemiluminescent gel doc imager
- Agilent Bioanalyzer
- Nano drop and standard spectrophotometers

Sanger DNA sequencing and fragment analysis:

We offer:

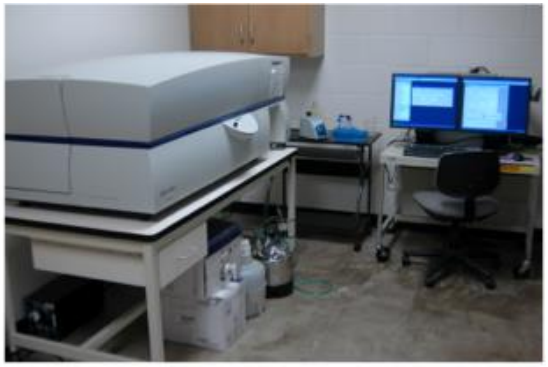
- Pre-prepared, “analysis-only” samples are $0.50/rxn
- Full service sequencing samples $4/rxn
  - Bulk pricing available

Please see our website for Sequencing Requirements and Sequencing Request form.

Imaging Facility

Training is arranged through the LSCF (Kimberly.Bowles@uta.edu).
Training is $60 and can accommodate up to 4 persons.

LSRII Flow Cytometer
Inside Room LS B24



BD Melody Cell Sorter
Room LS B10

LSM 510 Confocal Microscope Room LS B21

Requirements for Instrument Use

- **Hazard Communication and Waste Management Training (Academic):** https://uta-ehs.org/
- **Calendar signup for some equipment.**
  - Please see our website. No password needed.
  - Contact LSCF to make calendar edits.
- **LSCF Site Specific Training (SST) to get lab access**.
- **Instrument Specific Training by LSCF *only***
  - Please carefully follow guidelines.
  - Use log-in sheets, where available.

Requirements for Autoclave Use

All autoclave users need to have 2 trainings:

A) **Instrument operation** All users are required to be directly trained by the LSCF, Dr. Tholen (Micro TAs), or Cameron Taylor (SEIR people).

B) **Waste management**—If you autoclave biohazardous waste you need the **official EH&S training** on-line at https://uta-ehs.org "ON-SITE BIOHAZARDOUS WASTE MANAGEMENT: AUTOCLAVING" If you do not autoclave waste you need to **read** the EH&S Biohazardous Waste Management powerpoint. Copy available on LSCF website.

LACF Site Specific Lab Safety

- **BSL-2 only in LS B10**.
  - If you need to work with BSL-2 samples in B24 please inquire. We can help you get your sample inactivation / fixation protocols approved.
  - Disposal of gloves, tips, and all other lab supplies used with BSL2 samples should be made in the cardboard Stericycle containers with a red biohazard bag inside.
- Major classes of hazards listed on Lab doors.
- Eye wash station and shower are located directly inside the door to B24.
- No chemicals or biohazardous materials may be poured down laboratory sinks. If you need to dispose of Haz waste in LSCF contact us.
- PPE (personal protective equipment) ***PPE not provided.***

Personal Protective Equipment

- What you use depends on the agents you are working with.
  - Lab coat
  - Gloves
  - Eyewear
  - Respiration Protection (see next slide)

You are responsible for your own PPE

- Other precautions:
  - Closed toe shoes
  - Long Pants
  - Long Hair tied back

UTA Respiratory Protection Program:

- UT Arlington has implemented a Respiratory Protection Program developed in consistency with Occupational Safety and Health Administration (OSHA) standards.
- Engineering Controls such as Ventilation and Fume Hood are the most widely applied methods for reducing the concentration of airborne substances. As a backup to Engineering Controls the use of Respirators is recommended.
- Please contact EH&S at 817-272-2185 or Elisabeth Rowlett rowlett@uta.edu for hazard assessment, medical evaluation info, respirator fit testing, and pricing prior to purchasing.
- Employees (including students paid by PI or Department) participating in the respiratory protection program do so at no cost to themselves. The expense associated with training, medical evaluations and respiratory protection equipment will be covered by the respective Principal Investigator (PI) or the employee's Department.
- http://www.uta.edu/campus-ops/ehs/occupational/docs/respirator-manual-2013.pdf

LSCF Laboratory Safety- cont.

- **Please remove your gloves before touching any clean surfaces.**
  - Especially important if using the GelDoc to visualize ethidium bromide or SYBR gels.
    - Assume the user before you has contaminated the GelDoc and use clean PPE or paper towels to keep yourself safe.
- No food, drink or make up application are allowed in the LSCF.
  - No food/drink WRAPPERS in LSCF trash.
- If you are unsure of how to use or dispose of something, please ask Kim.

Hazardous chemicals in the LSCF

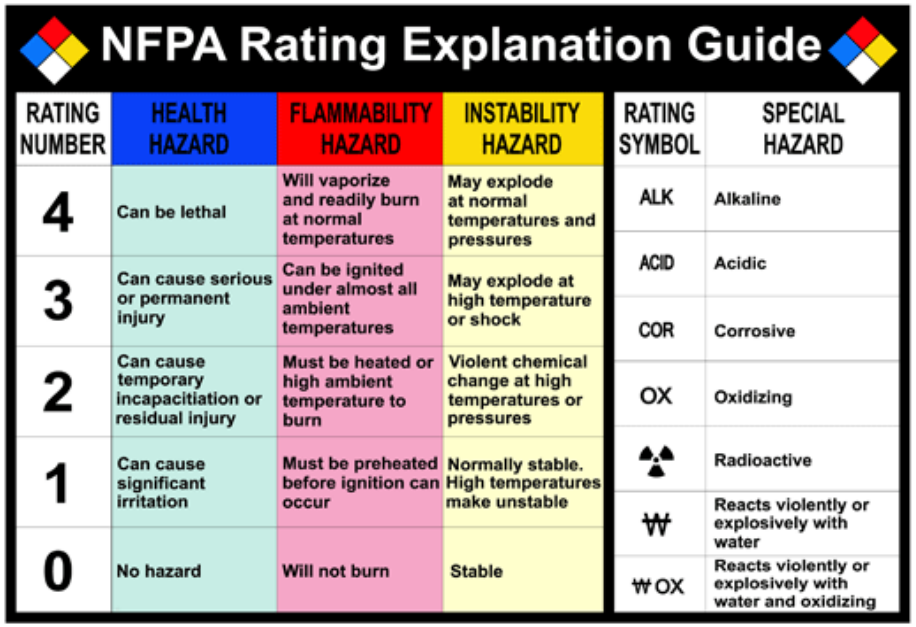
- LS B24: Small corrosive/ acid cabinet, labeled chemical cabinet. **Liquid Nitrogen – *asphyxiation risk***.
- LS B21: compressed Nitrogen gas
- LS603: 2 Large Flammable cabinets, labeled chemical shelf;
- ERB 484B: Developer and Fixer
- LS B10: Sodium azide, 0.5%. Reactive- don't pour down drains.

Safety Data Sheets (SDS)

- SDS contain chemical specific information:
  - Safe storage criteria
  - Safe handling
  - Overexposures and first aid for exposure
  - Physical effects of exposure
  - Selections and use of PPE
  - Handling, cleanup and disposal of hazardous chemicals

- SDS in the LSCF can be found:
  - SDS-pro link from EH&S Website
  - Chemical manufacturer or distributor.
  - Laboratory Safety Manuals – distributed to each PI.
  - If unable to locate an SDS, call EH&S at 817-272-2185

National Fire Protection Association (NFPA)



NFPA Rating Explanation Guide

RATING NUMBER	HEALTH HAZARD	FLAMMABILITY HAZARD	INSTABILITY HAZARD
4	Can be lethal	Will vaporize and readily burn at normal temperatures	May explode at normal temperatures and pressures
3	Can cause serious or permanent injury	Can be ignited under almost all ambient temperatures	May explode at high temperature or shock
2	Can cause temporary incapacitation or residual injury	Must be heated or high ambient temperature to burn	Violent chemical change at high temperatures or pressures
1	Can cause significant irritation	Must be preheated before ignition can occur	Normally stable. High temperatures make unstable
0	No hazard	Will not burn	Stable

RATING SYMBOL	SPECIAL HAZARD
ALK	Alkaline
ACID	Acidic
COR	Corrosive
OX	Oxidizing
	Radioactive
W	Reacts violently or explosively with water
W OX	Reacts violently or explosively with water and oxidizing

Handling & Disposal

- Waste must be stored in compatible containers, labeled and must be kept closed except while filling.
- Waste containers must be stored in secondary containment (plastic tubs, provided by EH&S upon request).
- A Request for Disposal Form form must be submitted to EH&S once the waste container is full – Kim or Melissa will do this.
- **Do not pour chemicals down the sink.**

UTA Spill Clean-up Procedures

- **If a spill is an immediate threat to life or health:**
  - Leave area (close door if necessary) and notify persons nearby.
  - Call EH&S at 817-272-2185.
  - Contact UTA PD at 817-272-3003.
  - Provide specific and detailed information to responders.
- **If a spill is minor:**
  - If trained, use a spill kit to clean up. Dispose of waste through the hazardous waste disposal program. If needed, reference the Laboratory Safety Manual.
  - If not trained, call EH&S at 817-272-2185 for assistance.
  - Prevent others from entering areas.
- **For ALL spills: Contact the LSCF at 817-272-9636**

Not in LSCF

- **Chemical Asphyxiants:** chemicals that deprive body tissues of oxygen.
  - Chemical asphyxiants prevent uptake of oxygen in the blood. Examples: hydrogen sulfide, carbon monoxide and cyanogen.

- **Irritants:** cause inflammation on contact with the body surface or lungs. Ex: acetic acid sulfur dioxide, sulfuric acid formaldehyde

- **Allergens:** some lab chemicals or organic matter including animals. Reactions may be immediate or delayed. Examples: formaldehyde isocyanates, benzylics phenol derivatives.

- **Reactives:** compounds that are capable of catching fire or exploding if subjected to certain conditions. Examples: Phosphorous Trichloride, Acetyl Chloride, Benzoyl Chloride, Thionyl Chloride, Vinyl Chloride
  - Fire Hazards: Pyrophorics ignite when exposed to air (diethyl zinc). Water reactives react violently with water to form dangerous and flammable gases (sodium metal).
  - Explosion Hazards: Shock sensitive compounds can explode if shaken or dropped (picric acid). Peroxide formers form explosive compounds when exposed to air (ethyl ether). Explosives can explode if subjected to sudden shock, pressure, or high temperature (picric acid).

Flammables

- Acute (Immediate) Effects - headache, dizziness, nausea, dry and irritated skin, watery and stinging eyes, inflammation of eyelids.
- Chronic (Delayed) Effects - general damage to lungs, liver, kidneys and other systemic functions as well as possible cancer risk.
- Store in proper cabinets, keep containers closed when not in use, do not use near flame or ignition source

Corrosives

- Acidic or caustic (acid or base) capable of destroying human tissue. Acids can also destroy metal.
  - Acids: sulfuric acid (battery acid), hydrochloric acid (acid bath)
  - Bases: sodium hydroxide (drain cleaners), ammonium hydroxide
- **Acute (Immediate) Effects** - Destruction of tissue, irritation of mucous membranes, respiratory irritation, difficulty breathing, headache, intense pain in eyes (possible loss of vision), nausea.
- **Chronic (Delayed) Effects** - Destruction of respiratory tract, destruction of digestive system.

** Special Note: Acute or chronic exposure to hydrofluoric acid can cause deterioration of bones and even lead to death. Always seek medical attention. Go to the **MSDS** website for more information.*

Oxidizers

- Oxidizers are substances that supply oxygen to the fire as they burn.
  - Organic peroxides: benzoyl peroxide, perchloric acid
  - Other oxidizers: concentrated nitric acid,sodium hypochlorite (bleach)

Compressed Gas Hazards

- A compressed gas is a gas or mixture of gases in a container that is under pressure.
  - Nitrogen, Air, CO2
- Ventilate area where gases are used.
- Identify cylinders by name, not color.
- Firmly close valve when not in operation.
- Keep valve protection cap on cylinder when not in use.

- **Firmly secure cylinders during storage and use**.

Questions?

Please contact LSCF with any additional questions.

Kimberly.bowles@uta.edu 817.272.9636

You have now completed the
Life Sciences Core Facility Site Specific Training.

You are responsible for reviewing and understanding the LSCF Site Specific Safety information in this presentation. If you ever have any questions, please contact a member of the LSCF

Thank you!