Roundtable 2 – CryoEM Facility building

NCCAT SPA short course

March 3, 2020

https://www.freepik.com/free-photos-vectors/virus

NIH P41 - National Biomedical Technology Research Resources (BTRR)

Krios1 Krios2 Krios3

Krios4 Krios5 Krios6 Krios7 2020

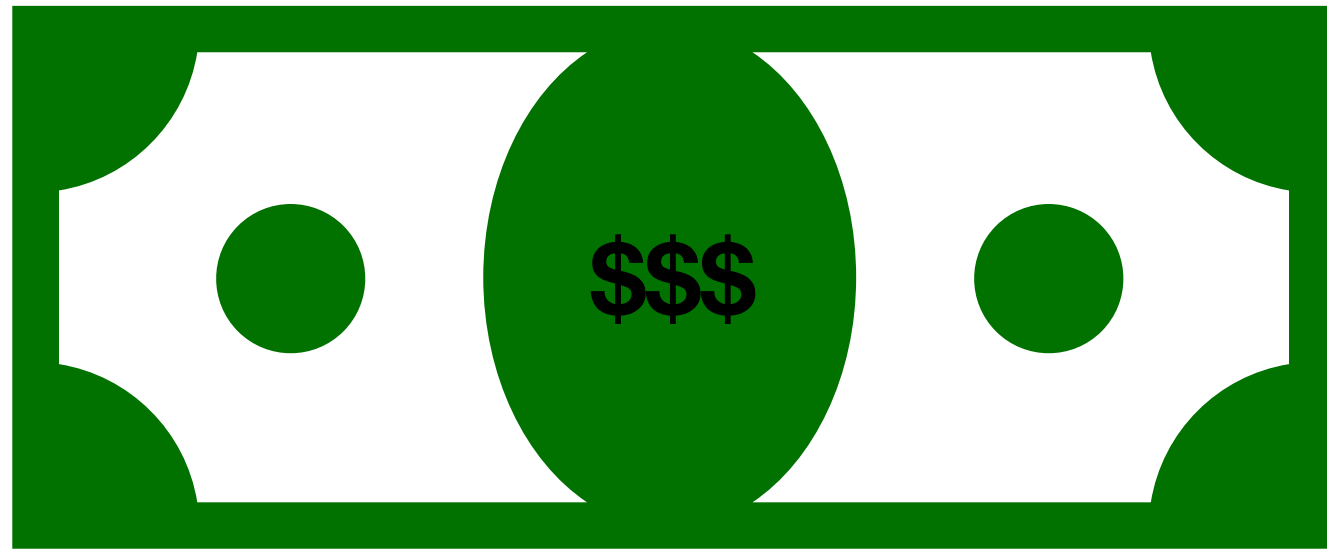Tecnai F20 Tecnai12 JEOL1230 Helios650

Hitachi 7800 Glacios

Chameleon

How to build a facility?

Consideration:

What is the ideal balance between users and efficiency?
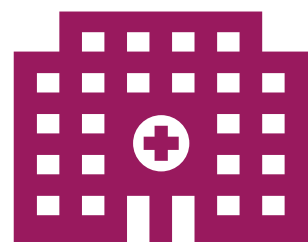
How much is a RO1 vs a Titan Krios?
Roughly you would need 10 papers a year to justify a Krios

How to build a facility?

Consideration:

How to calculate the cost?

Building   **Microscopes**   **Infrastructure**   **People**

What is entailed with microscopes?

Consideration:

I just want to buy one.

Configuration of microscope
 What features do you need? What is your user base?

Service contracts

Do I need people to run it?

Do I need a camera?

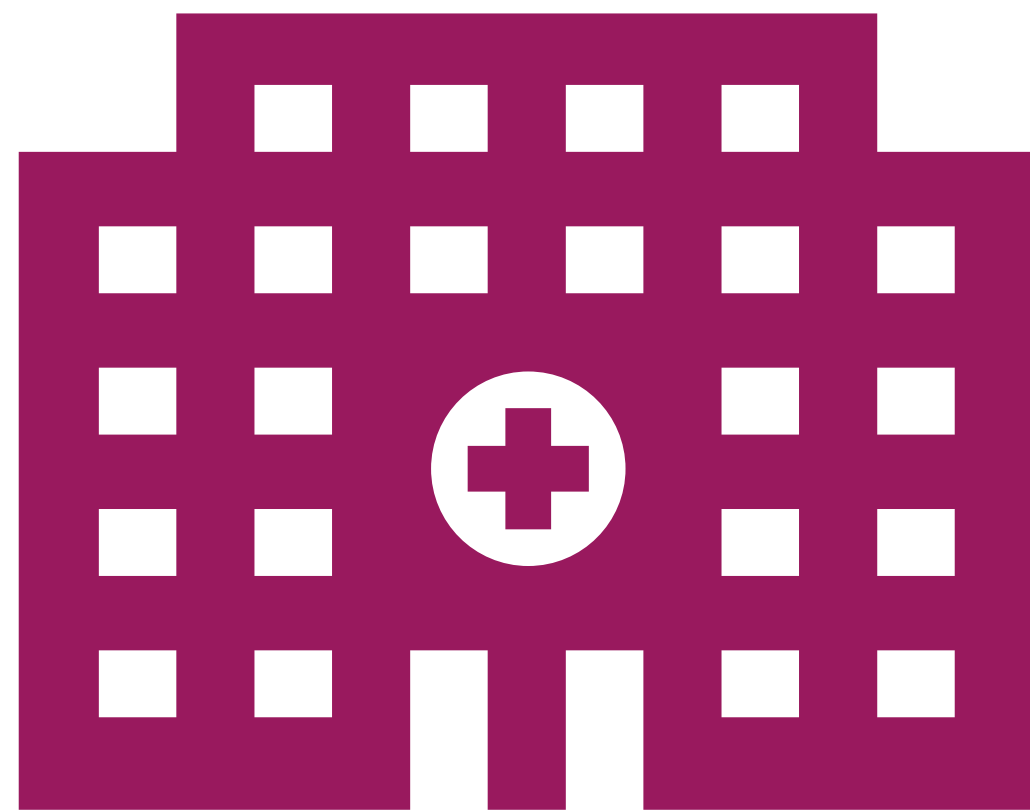**How often do I need to upgrade?**

Microscopes

Where do I put a microscope?

Consideration:

Is a room just a room?

In the basement
Flood | I like to see light why is an EM room so dark?
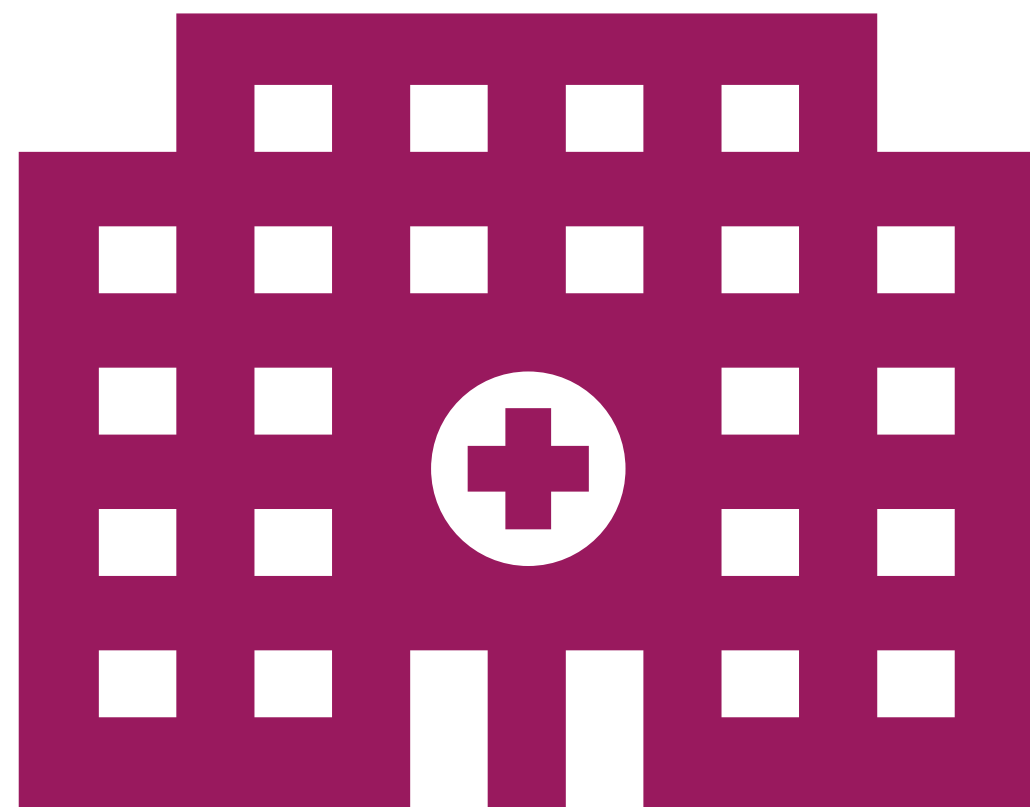
Temperature

Fields

Vibration

HVAC

EMI

Where do I put a microscope?

Consideration:

Is a room just a room?

How to cool a room?
Fan (heating/cooling coils)
Water loop - chilled beam

The rest

Consideration:

What are we missing?

Infrastructure
Electricity
Water
Air
LN2
Computers

How much data?
TBs of data per
microscope per day

CPU
GPU
Memory
HD, SSD, Tape