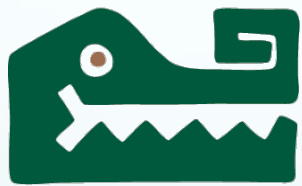
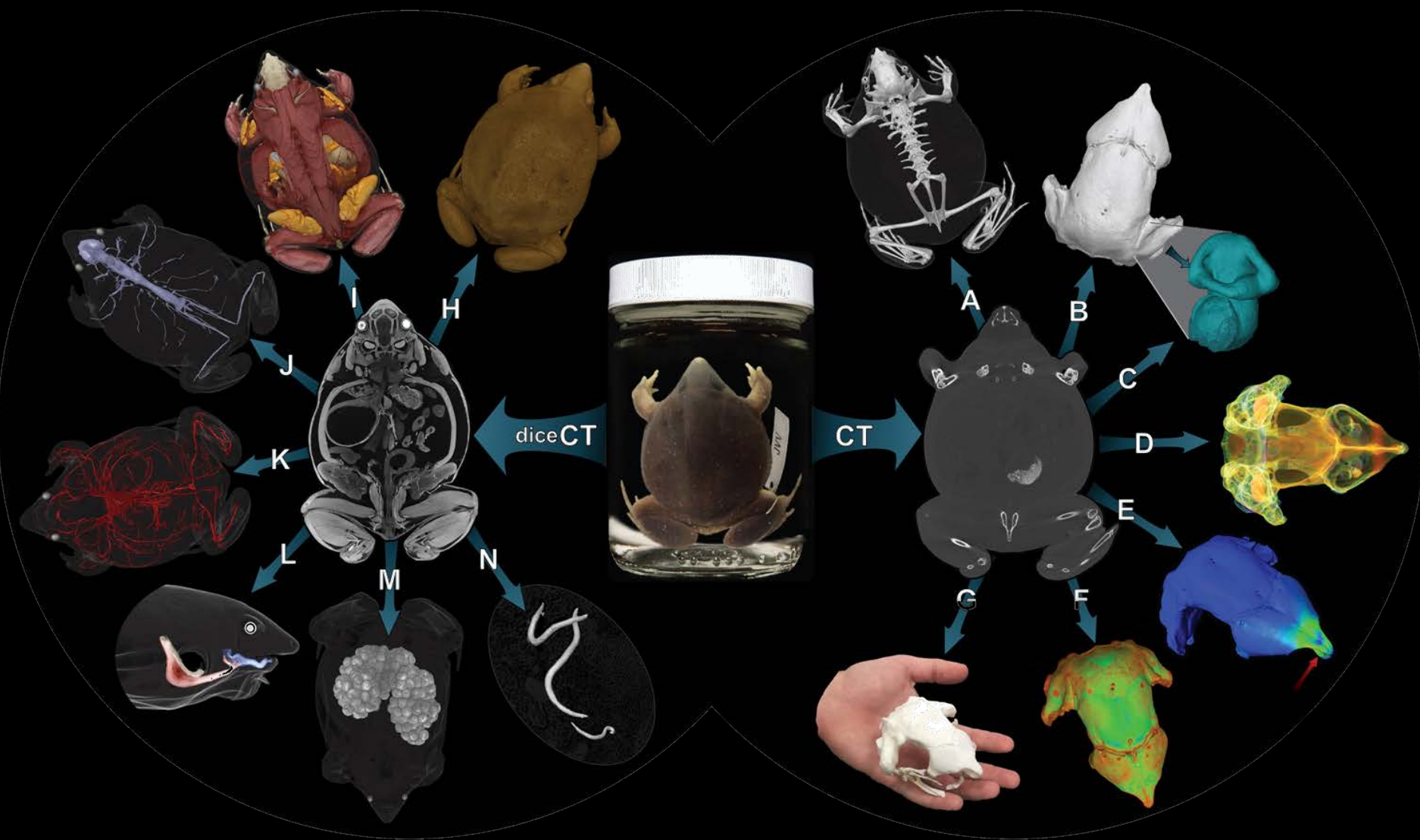


# CT Scanning at the



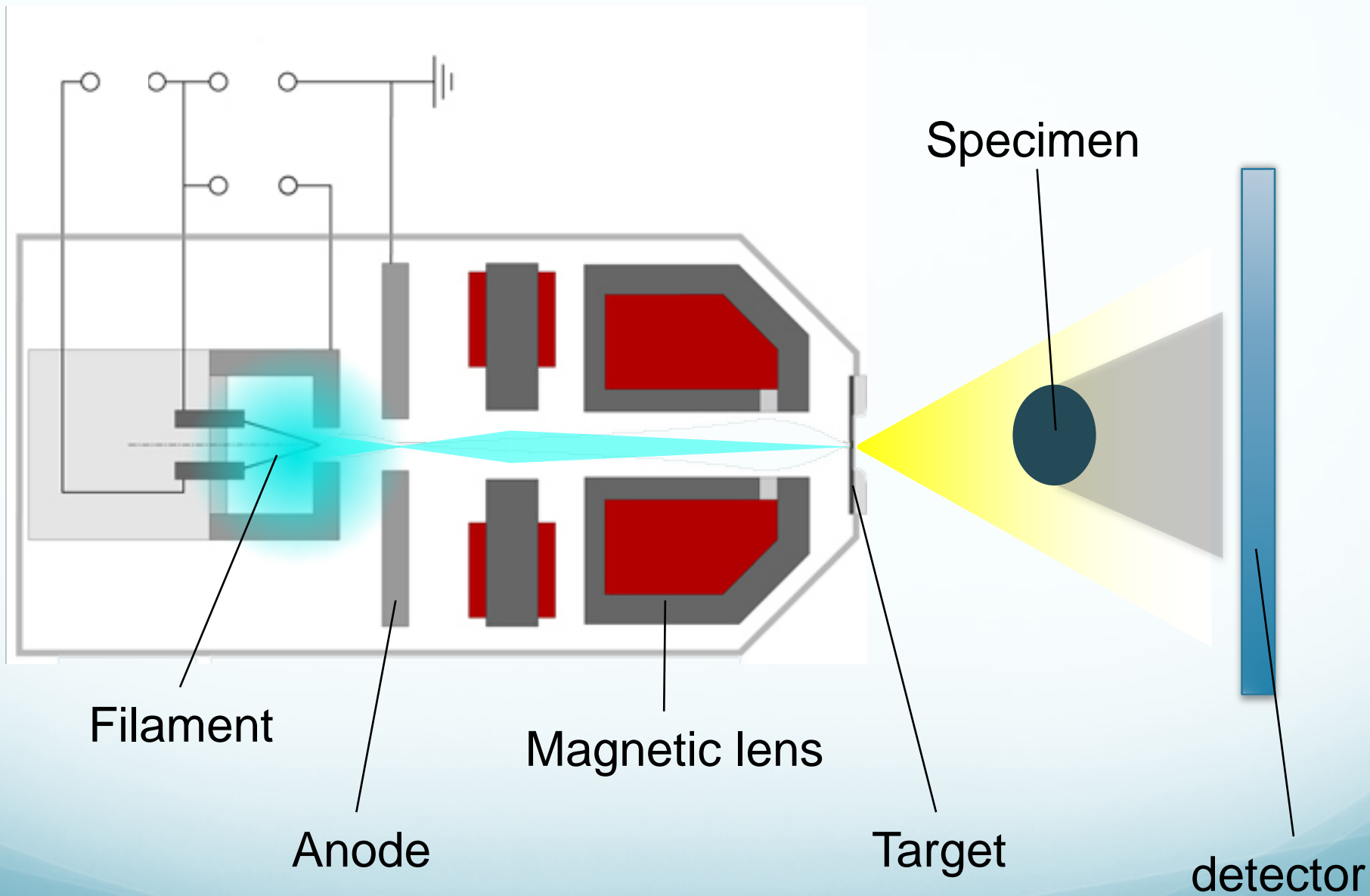
**FLORIDA MUSEUM**  
**OF NATURAL HISTORY**

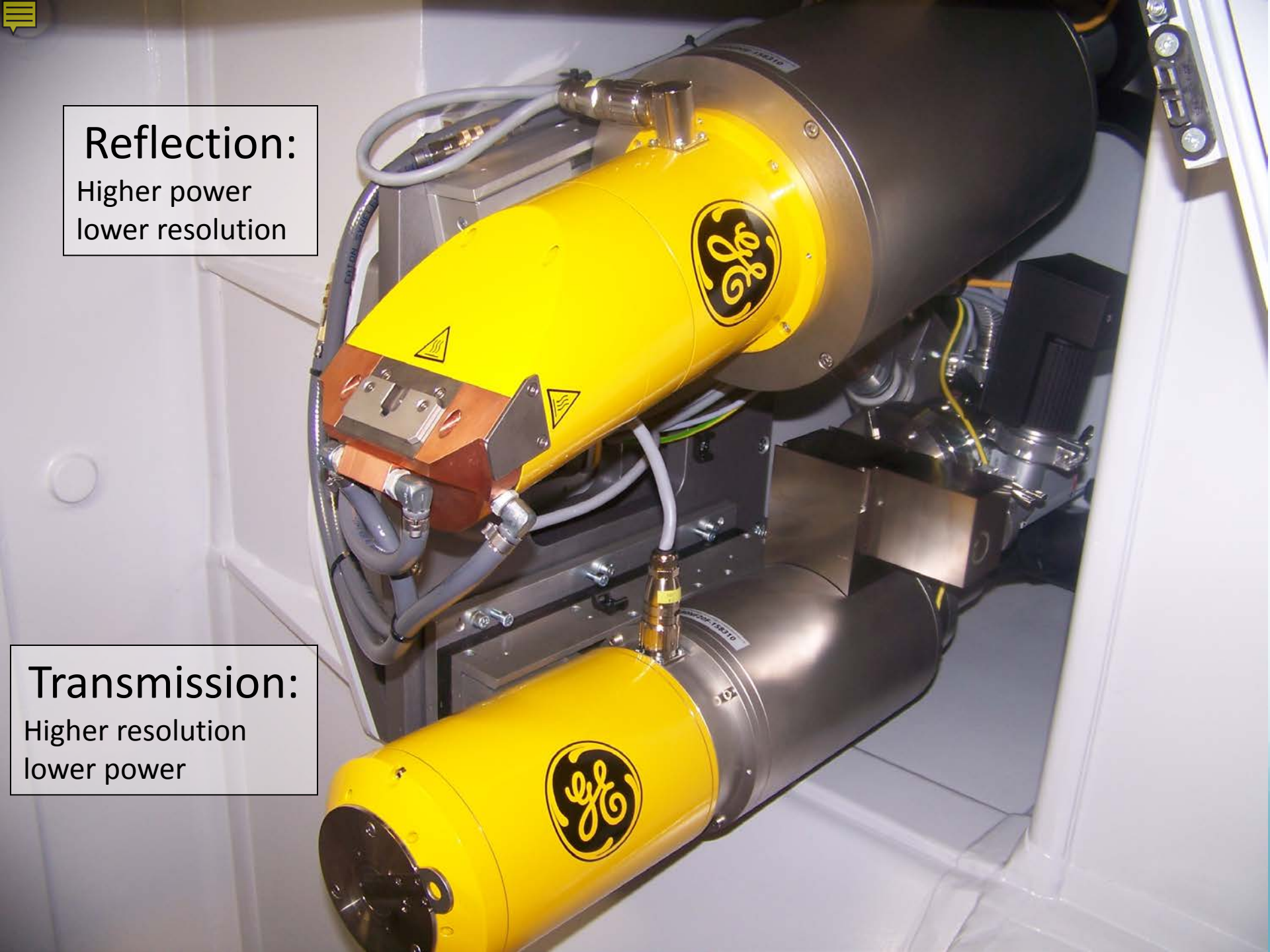


# Phoenix VTome|x M



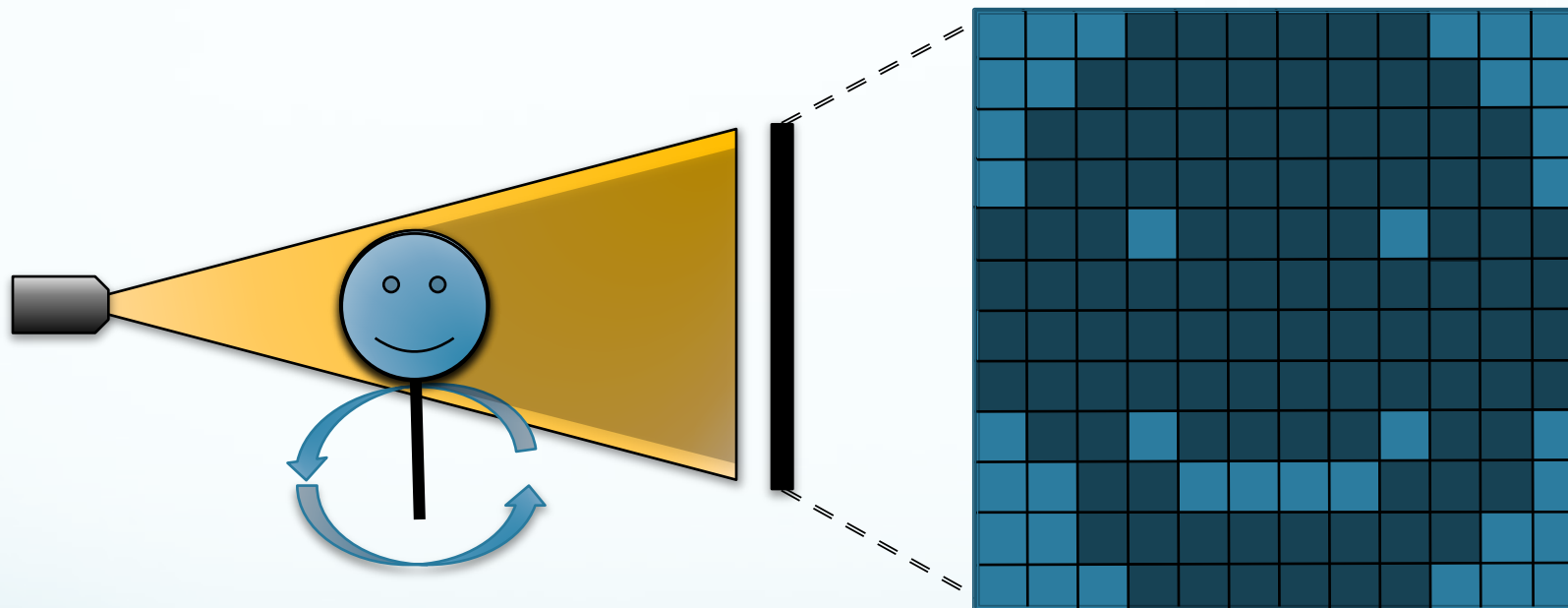
- Flexible
- Powerful
- Easy to use
- High throughput
- Training required
- Fee to use





**Reflection:**  
Higher power  
lower resolution

**Transmission:**  
Higher resolution  
lower power



# CT Benefits

- Non-destructive
- Digital dissection
- High magnification
  - $<1\mu\text{m}/\text{voxel}$
- Novel measurements
- Quantitative analyses
- Fast, Accurate Results
- Easy to disseminate



# CT Scanning: Limits

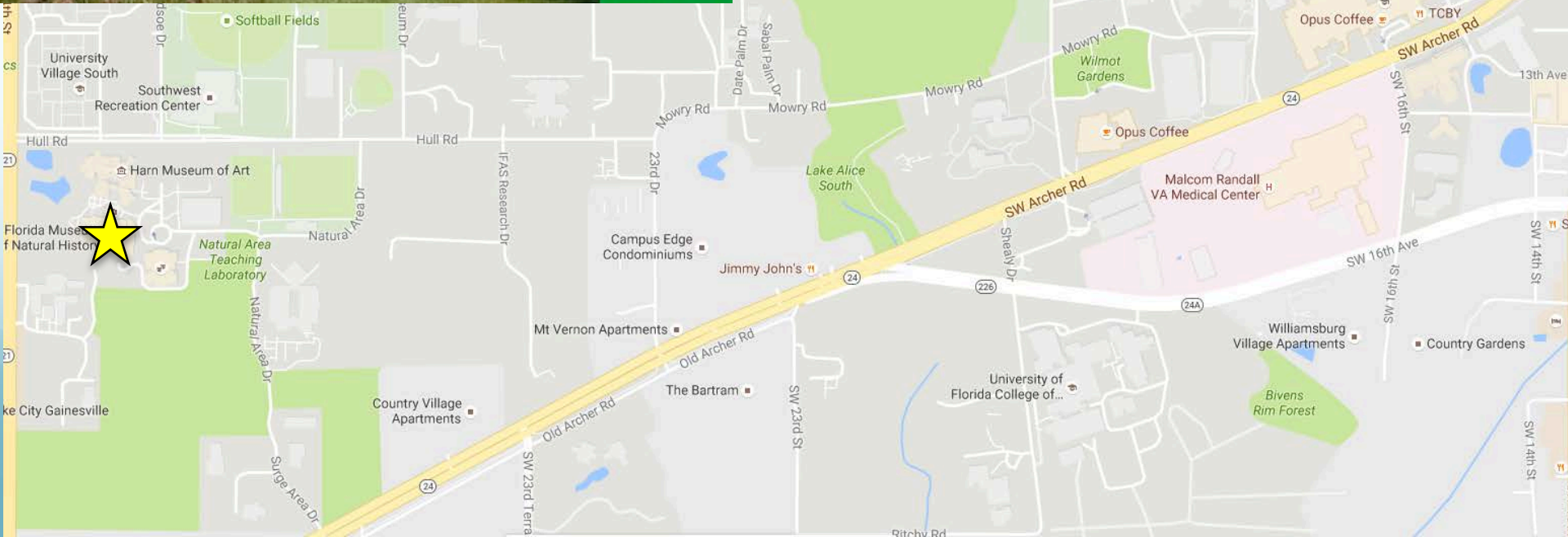
- Relies on X-ray Absorption
  - Dense on Dense Contrast Poor
  - Light on Light Contrast Even Worse
  - Big Sample, Small Internal Structures Hard
- Cost
  - \$30/hr or \$180/12hrs at the NRF
  - Post-Processing Software Licensed \$\$\$\$
  - Need Very Expensive, Powerful Computer \$\$\$\$
  - Huge Data Sets = storage
- Sample Specific
  - Lethal to Living Specimens
  - Specimen must remain perfectly Still



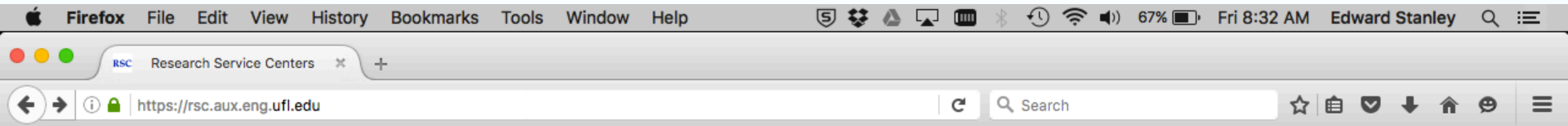
# Booking time on the UF CT scanner



LEED® Certified



# https://rsc.aux.eng.ufl.edu/



HERBERT WERTHEIM  
COLLEGE of ENGINEERING



**UF** | Research Service Centers  
HERBERT WERTHEIM COLLEGE of ENGINEERING

Login



**USER PANEL**

HOW TO

**EQUIPMENT**

EXAMPLES

POLICIES & FORMS

SAFETY

CONTACT

**NANO-CT & 3D PRINTER**

Specimens were scanned with a GE V|tome|xm 240 CT Scanner to obtain high resolution 3D images of the entire specimen.

[READ MORE](#)

CT Scan

3D Print

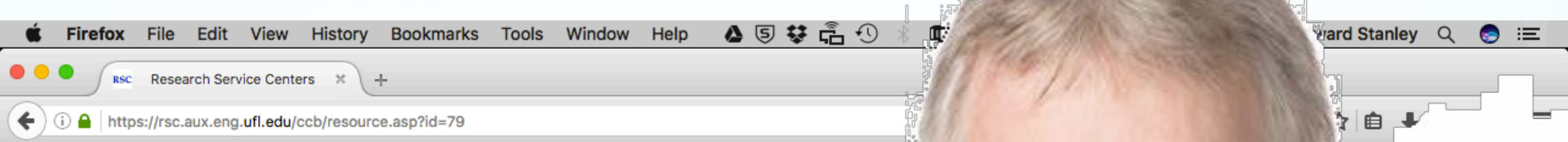
The slide features a horizontal sequence of three images of a lizard. On the left is a photograph of the real lizard. In the middle is a grayscale CT scan of the lizard, showing its internal skeletal structure. On the right is a 3D printed model of the lizard, colored in a light blue/green hue. Arrows labeled "CT Scan" and "3D Print" indicate the process from the physical specimen to the digital scan and then to the physical print.

## NEWS & ANNOUNCEMENTS

About RSC

Posted on Tue, Aug 25, 2015 at 10:28 AM

# https://rsc.aux.eng.ufl.edu/



**UF** Research Service Centers  
HERBERT WERTHEIM COLLEGE of ENGINEERING

USER PANEL HOW TO EQUIPMENT EXAMPLES

User Panel Equipment

## NANO-CT - GE V|TOME|X M 240 - STATUS: /



- **Current Status:** Available
- **Use Rates:**
  - **External Academic & Government:** \$52.50/Hour
  - **External Affiliated Commercial/Industrial:** \$120.00/Hour
  - **External Commercial/Industrial:** \$160.00/H
  - **External International Academic:** \$70.00/Hour
  - **Internal Standard:** \$35.00/Hour
- **Service:** [Request Service Quote](#). The Staff [Request Service Quote](#) \$50/hour
- **Building:** [NANO \(0070\)](#)
- **Room:** Nano-CT Room (128)
- **In Cleanroom:** No
- **Main Contact:** [Gary Scheiffele](#)

**Gary Scheiffele**  
**(352) 281-8262**

Capabilities Training

# Planning the scan

- What questions are you asking?
  - What measurements will you need to take?
  - How many specimens will you need to scan?
  - Optimization
    - Resolution
      - Spatial resolvability
    - Contrast
      - Density resolvability
    - Noise
    - Speed
- } Factor of Resolution and contrast



# Data Handling

- Archiving
  - Lots of files
  - Large amount of memory (several GB per scan)
  - Files are sensitive to renaming and moving
  - Good idea to have a system in place BEFORE you scan
- Transferring
  - Short term Storage at the NRF (2 TB)
  - >200Gb data for a day's work
  - HiPerGator 2.0 will be installed soon
  - Portable Hard drives
  - EX-FAT

# 21 Project Specimens

VIEW AS LIST

NEW SPECIMEN

Order by: [Specimen number](#) | [Taxonomic name](#)

## Digitizing the Florida Museum of Natural History's Herpetology collections

P211

Part of an ongoing project to maximize the impact and accessibility of the collections at the Florida Museum of Natural History.

More Information: <https://www.fimnh.ufl.edu/herpetology/home/>

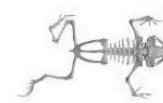
NEW PROJECT

MEDIA BIBLIOGRAPHY TAXONOMY FACILITIES

Project Members	David Blackburn, Edward Stanley
Number of Project Media Groups	18 Published with restricted download 4 Unpublished (22 total)
	<a href="#">PUBLISH UNPUBLISHED MEDIA (4)</a>
Number of Project Media Files	43 Published with restricted download 12 Unpublished (55 total)
Project Media Views/Downloads	413/25
Storage used	4 GB
Number of Specimens	22
Number of Citations	0
Created On	April 4 2016 (20 days, 7 hours)



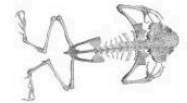
UF-11978, *Sphenodon punctatus*



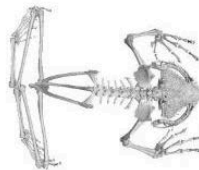
UF-H-124268, *Anaxyrus quercicus*



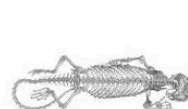
UF-H-100788, *Spea multiplicata*



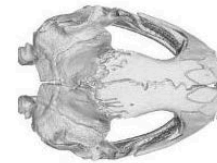
UF-H-104862, *Peltophryne guentheri*



UF-H-137289, *Smilisca baudinii*



UF-H-14110, *Sphenodon punctatus*



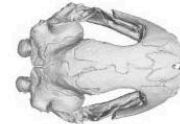
UF-H-156938, *Desmognathus auriculatus*



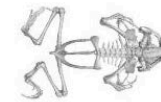
UF-H-156939, *Desmognathus auriculatus*



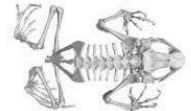
UF-H-157813, *Desmognathus apalachicola*



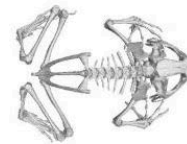
UF-H-157832, *Desmognathus apalachicola*



UF-H-3170-1, *Anaxyrus terrestris*



UF-H-39140, *Atelopus ignescens*



UF-H-3997-2, *Anaxyrus fowleri*



UF-H-43508, *Kinosternon hirtipes tarascense*



UF-H-45035, *Kinosternon hirtipes magdalense*



UF-H-61535, *Draco blanfordii*



www.morphosource.org  
Bit.ly/UFHerpMorph