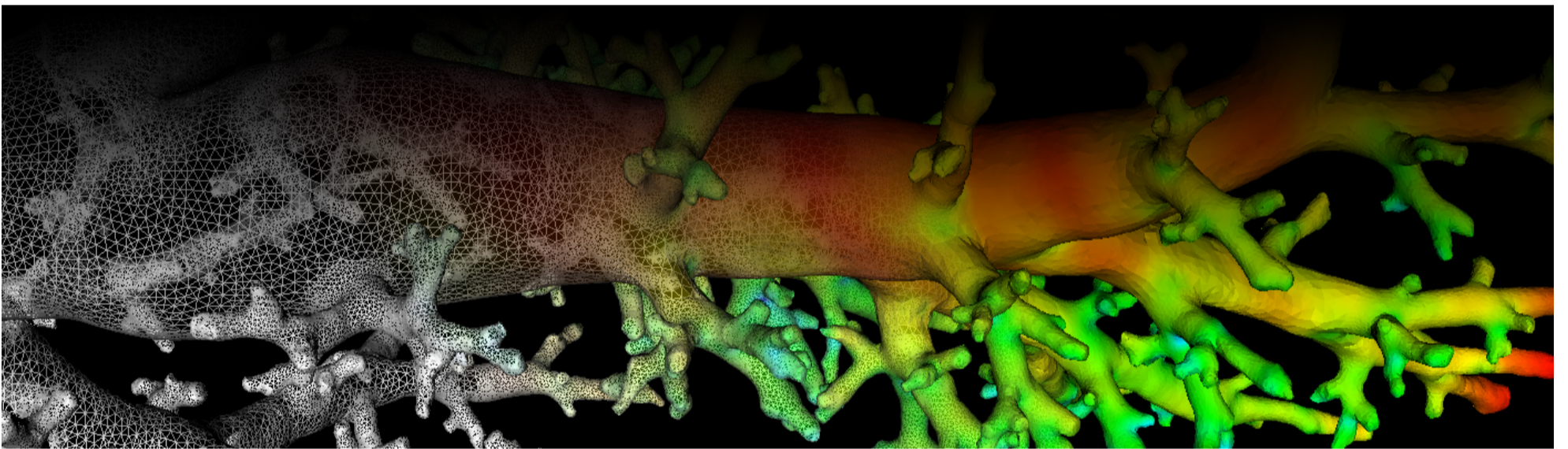
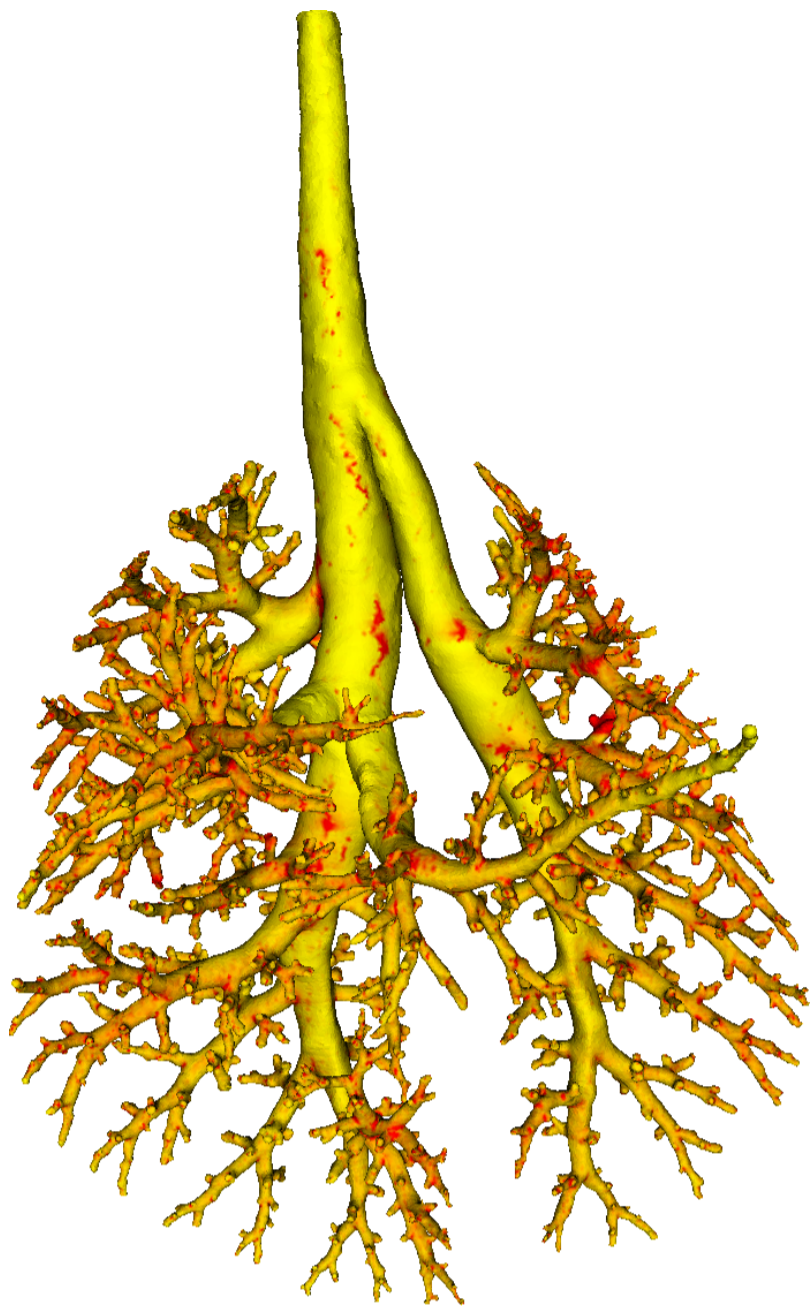


# Lung Anatomy + Particle Deposition (lapd) Mouse Archive for Modeling and Computational Toxicology



m30

[Go to data folder](#)



## Mouse Physiologic Parameters

- Sex: Male
- Strain: BALB/c
- Weight (g): 23.4
- Vendor: Jackson Labs
- Physical abnormalities: None
- Protocol (<https://cebs-ext.niehs.nih.gov/cahs/file/lapd/pages/Core/Animal%20Model.pdf>)

## Aerosol Dosing

- Particle size: 1 microns
- Exposure time: 10 minutes
- Exposure estimate: 1.53E+08 FMS

Time	RR (bpm)	Vt (ml)	VE (ml/min)	I:E
Pre Aerosol	NaN	NaN	NaN	NaN
Post 5min Aerosol	259	0.24	62.8	0.86
Post 10min Aerosol	234	0.26	61.5	0.81

## Slicing Info

- Approximate lung orientation: LAS
- Camera: D7100, 14-bit, 200mm Nikkor Macro lens, f/16
- Voxel size: 4.71 x 4.71 x 9.52 (microns)
- Image exposures (msec). ISO=160, all images.

	mt	ol	fl	rd	Notes
excitation	UVND2	UVND2	485/20	560/20	center wavelength/fwhm
emission	N/A	470/30	535/30	635/30	
Image	Exp	Exp	Exp	Exp	Notes
white	33	167	5000	200	Rhodamine B in OCT
cal	20	125	67	400	
images		77	20000	500	
darks		77	20000	500	

- Notes regarding slicing:
  - Pre-aerosol respiratory tracings are missing.
  - Trachea starts narrowed with an "indent". There is 1-2mm of good trachea.
  - Good aerosol signal. Some multiple red images.
  - The accessory lobe is not wrapped around the heart very well.
  - Small leak in the left lung. Left and right apices are pinched by the mold.

## Airway Segmentation

- Total centerline length: 652.056 mm
- Number of branches: 1729
- Number of terminal branches: 866
- Maximum generation number: 30
- Number of outlet areas: 2458

## Compartment Sizes and Aerosol Deposition

- Lung volume: 1163.07 (mm<sup>3</sup>)

Compartments	Count	Volume (mm <sup>3</sup> )
Lung	1	1163.07
Lobes	5	232.61±105.25
Sublobes	52	21.91±21.42
Near acini	398	2.78±1.71

Lobe	Volume (mm <sup>3</sup> )	Average aerosol deposition
left	382.82	1.17±1.23
cranial	197.52	1.36±1.71
middle	148.63	1.29±1.21
caudal	326.73	1.05±1.15
accessory	107.37	1.05±1.02

## Additional Notes

- Overall quality: B
- Top of trachea is misshaped in image data and segmentation doesn't model all details.