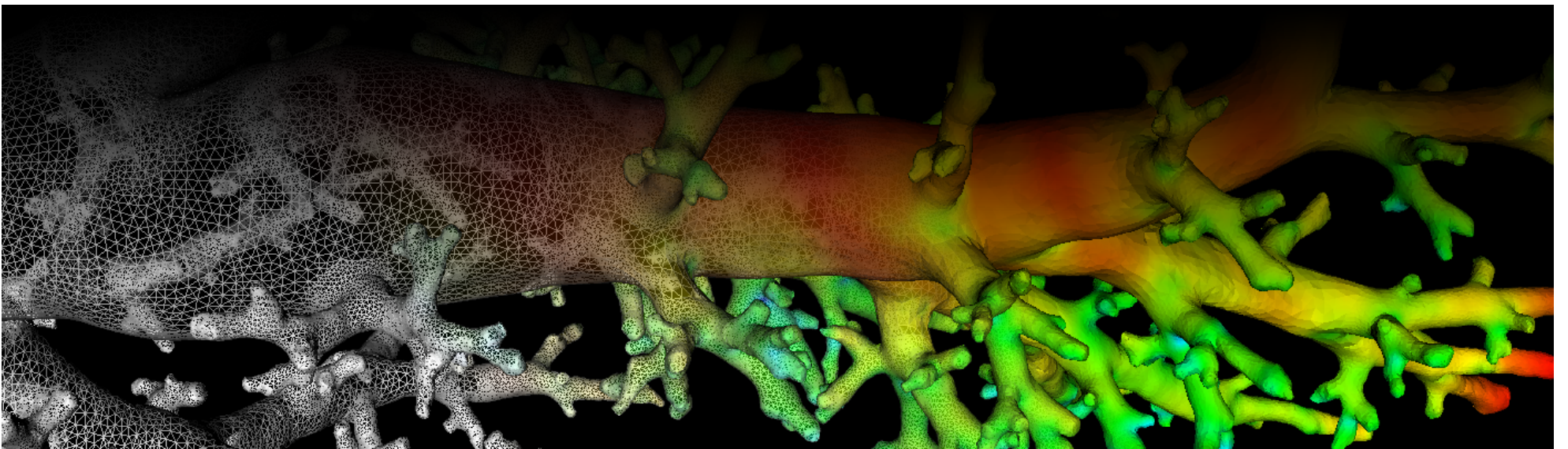
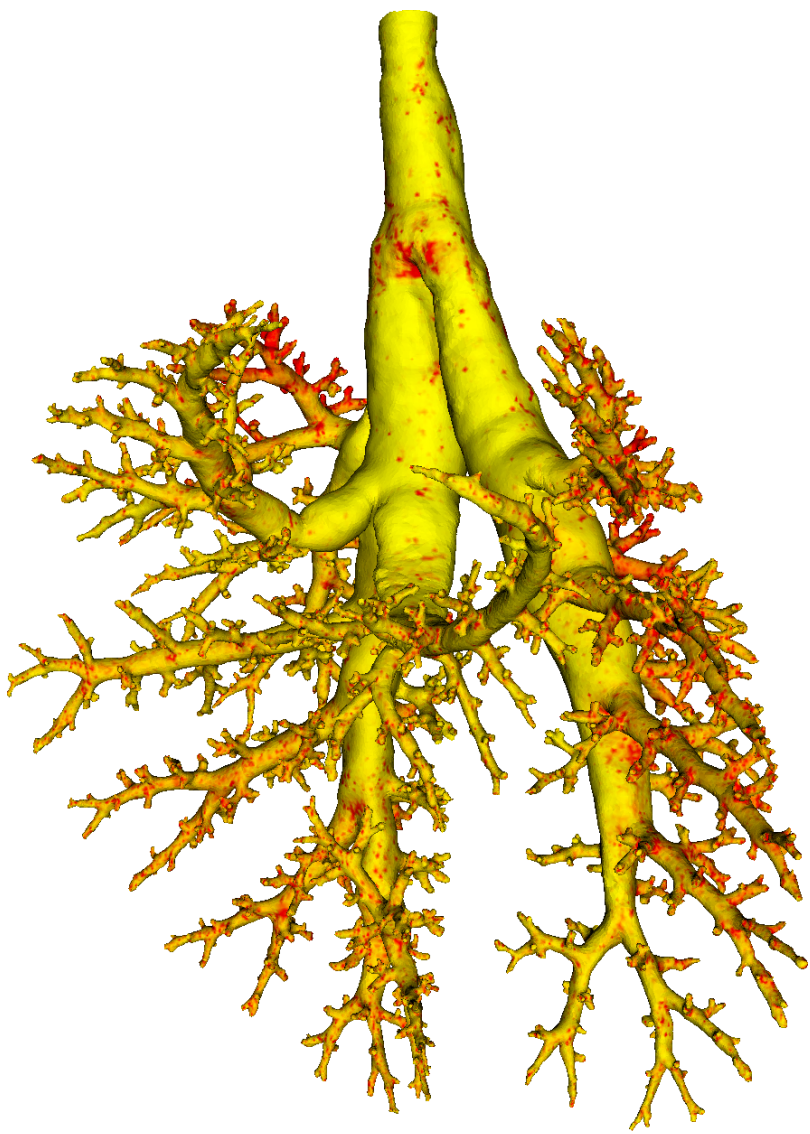


Lung Anatomy + Particle Deposition (lapd) Mouse Archive for Modeling and Computational Toxicology



m15

[Go to data folder](#)



Mouse Physiologic Parameters

- Sex: Male
- Strain: B6C3F1
- Weight (g): 23.8
- Vendor: Charles River
- Physical abnormalities: intense pink nose
- Protocol (<https://cebs-ext.niehs.nih.gov/cahs/file/lapd/pages/Core/Animal%20Model.pdf>)

Aerosol Dosing

- Particle size: 2 microns
- Exposure time: 15 minutes
- Exposure estimate: 9.03E+06 FMS

Time	RR (bpm)	Vt (ml)	VE (ml/min)	I:E
Pre Aerosol	222	0.25	55.9	0.91
Post 5min Aerosol	182	0.24	44.0	0.81
Post 10min Aerosol	191	0.26	50.6	0.86

Slicing Info

- Approximate lung orientation: LAS
- Camera: D7100, 14-bit, 200mm Nikkor Macro lens, f/16
- Voxel size: 4.68 x 4.68 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	

	mt	ol	fl	rd	Notes
Image	Exp	Exp	Exp	Exp	Notes
white	33	200	8000	200	Rhodamine B in OCT
cal	20	167	67	400	
images		77	20000	1600	
darks		77	20000	1600	

- Notes regarding slicing:
 - The sample rotated a little bit clockwise in the embedding material.
 - The left lung touched one of the fiducial markers.
 - Good aerosol signal.

Airway Segmentation

- Total centerline length: 679.088 mm
- Number of branches: 2142
- Number of terminal branches: 1074
- Maximum generation number: 27
- Number of outlet areas: 2465

Compartment Sizes and Aerosol Deposition

- Lung volume: 1075.84 (mm³)

Compartments	Count	Volume (mm ³)
Lung	1	1075.84
Lobes	5	215.17±109.49
Sublobes	52	20.07±20.05
Near acini	280	3.61±2.56

Lobe	Volume (mm ³)	Average aerosol deposition
left	363.24	1.24±2.05
cranial	164.32	1.98±2.73
middle	114.71	0.79±1.15
caudal	329.33	1.10±1.60
accessory	104.23	0.67±0.96

Additional Notes

- Overall quality: B
- main accessory lobe branch not perfectly segmented
- main middle lobe branch is kinked in the sample
- Lung tissue in part of left lobe looked unusual