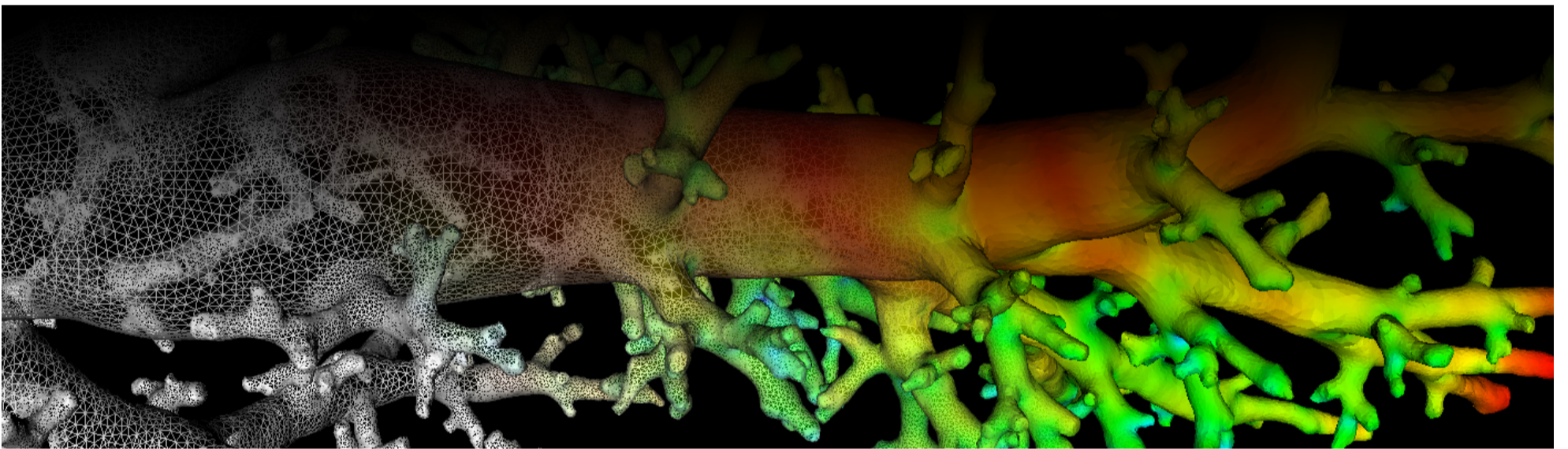
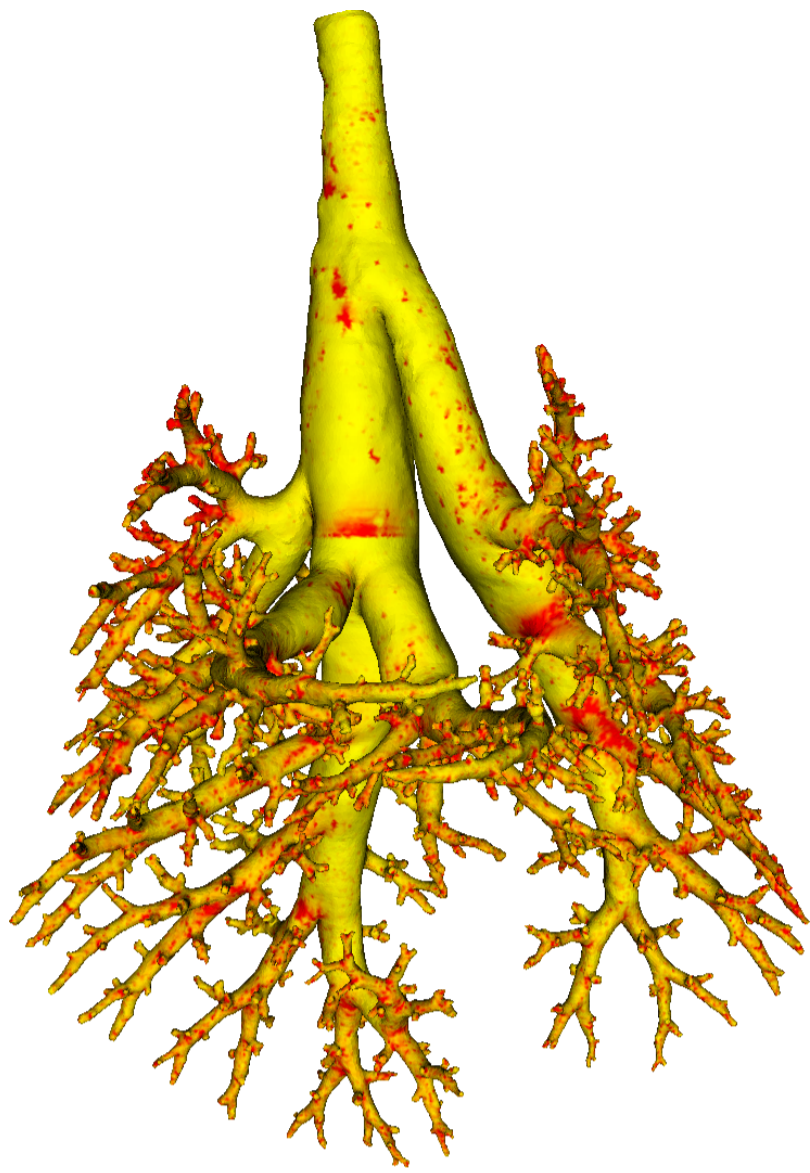


Lung Anatomy + Particle Deposition (lapd) Mouse Archive for Modeling and Computational Toxicology



m24

[Go to data folder](#)



Mouse Physiologic Parameters

- Sex: Female
- Strain: B6C3F1
- Weight (g): 20.7
- Vendor: Charles River
- Physical abnormalities: None
- 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: 1.26E+07 FMS

Time	RR (bpm)	Vt (ml)	VE (ml/min)	I:E
Pre Aerosol	252	0.19	46.8	1.20
Post 5min Aerosol	232	0.31	71.4	0.99
Post 10min Aerosol	211	0.22	45.5	0.83

Slicing Info

- Approximate lung orientation: LAS
- Camera: D7100, 14-bit, 200mm Nikkor Macro lens, f/16
- Voxel size: 4.67 x 4.67 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

	mt	ol	fl	rd	Notes
emission	N/A	470/30	535/30	635/30	
Image	Exp	Exp	Exp	Exp	Notes
white	33	200	8000	200	Rhodamine B in OCT
cal	20	167	67	400	
images		77	20000	2000	
darks		77	20000	2000	

- Notes regarding slicing:
 - Lost a small amount of ventral lung when it fell out of the field of view.
 - The top bit of trachea fell off, but there are still several mm remaining.
 - Good aerosol signal. There were some very large clumps.

Airway Segmentation

- Total centerline length: 633.751 mm
- Number of branches: 1744
- Number of terminal branches: 873
- Maximum generation number: 25
- Number of outlet areas: 2142

Compartment Sizes and Aerosol Deposition

- Lung volume: 1175.21 (mm³)

Compartments	Count	Volume (mm ³)
Lung	1	1175.21
Lobes	5	235.04±103.46
Sublobes	55	20.73±21.45
Near acini	339	3.25±1.98

Lobe	Volume (mm ³)	Average aerosol deposition
left	381.88	1.22±3.10
cranial	202.42	1.50±2.46
middle	142.69	1.25±1.87
caudal	329.29	1.00±1.62
accessory	118.92	1.04±1.53

Additional Notes

- Overall quality: B
- Tip of accessory lobe not imaged
- Top part of trachea is deformed and in sample and not perfectly segmented
- Some distal airway segments missing.