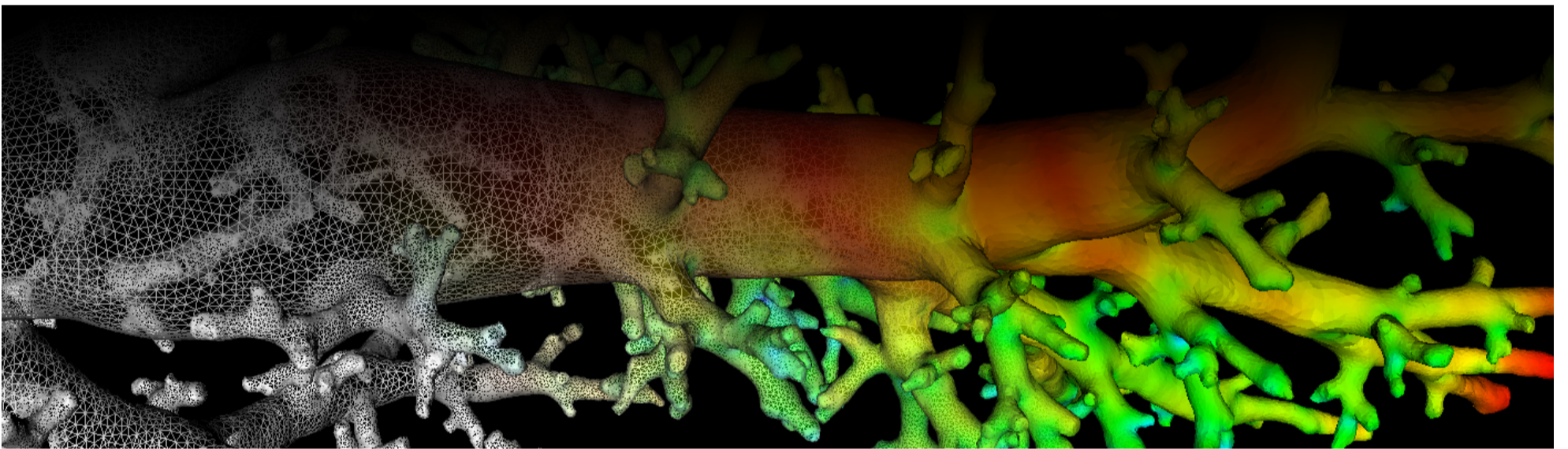
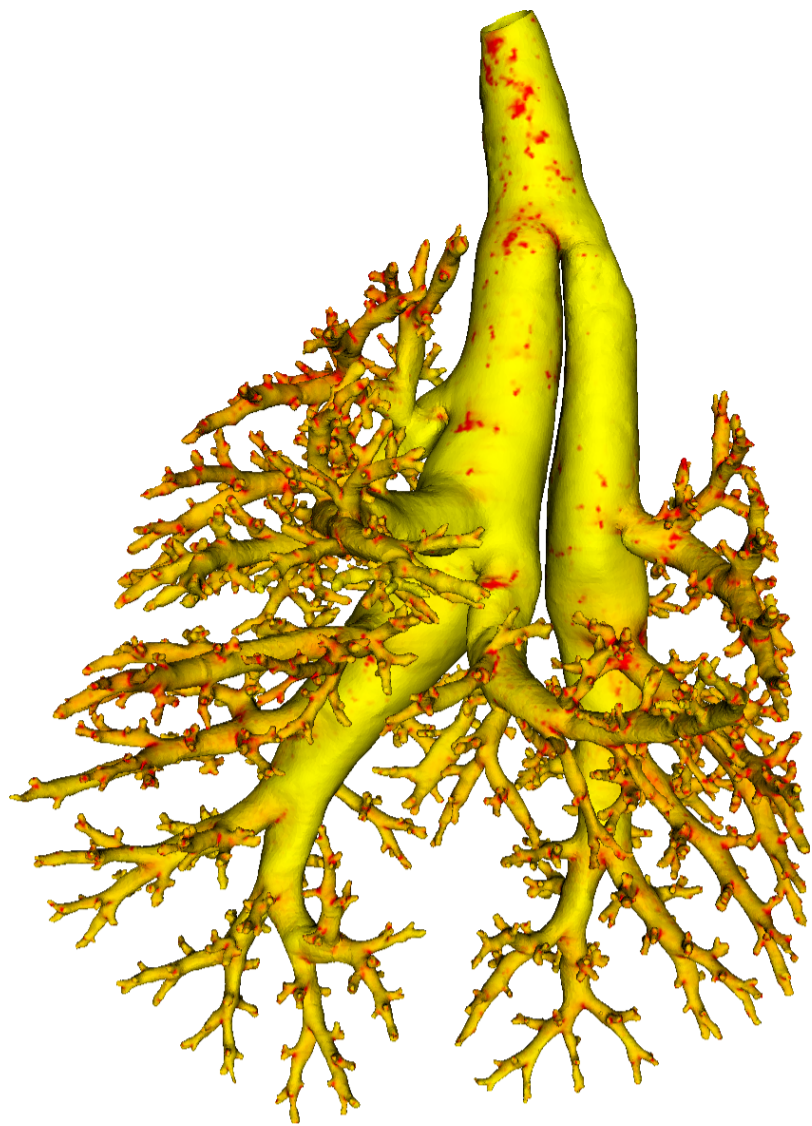


# Lung Anatomy + Particle Deposition (lapd) Mouse Archive for Modeling and Computational Toxicology



m31

[Go to data folder](#)



## Mouse Physiologic Parameters

- Sex: Female
- Strain: C57BL/6
- Weight (g): 22.7
- 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: 1.33E+08 FMS

Time	RR (bpm)	Vt (ml)	VE (ml/min)	I:E
Pre Aerosol	255	0.21	52.9	1.00
Post 5min Aerosol	246	0.20	48.8	0.83
Post 10min Aerosol	257	0.23	59.3	0.89

## Slicing Info

- Approximate lung orientation: LAS
- Camera: D7100, 14-bit, 200mm Nikkor Macro lens, f/16
- Voxel size: 4.72 x 4.72 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	

	mt	ol	fl	rd	Notes
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:
  - First ~100 slices have incomplete tracheal wall because of a break in the sample. There are still a few good mm of trachea.
  - Small OCT leak in the upper part of the right lung.
  - Good aerosol signal. Some multiple red images.
  - Good sample overall.

## Airway Segmentation

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- Total centerline length: 670.061 mm
- Number of branches: 1948
- Number of terminal branches: 976
- Maximum generation number: 25
- Number of outlet areas: 2346

## Compartment Sizes and Aerosol Deposition

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- Lung volume: 1118.92 (mm<sup>3</sup>)

Compartments	Count	Volume (mm <sup>3</sup> )
Lung	1	1118.92
Lobes	5	223.78±104.82
Sublobes	51	21.24±21.75
Near acini	442	2.36±1.22

Lobe	Volume (mm <sup>3</sup> )	Average aerosol deposition
left	359.69	1.20±1.12
cranial	175.59	1.53±1.26
middle	138.62	1.15±0.75
caudal	338.45	1.05±0.84
accessory	106.57	1.09±0.96

## Additional Notes

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- Overall quality: A