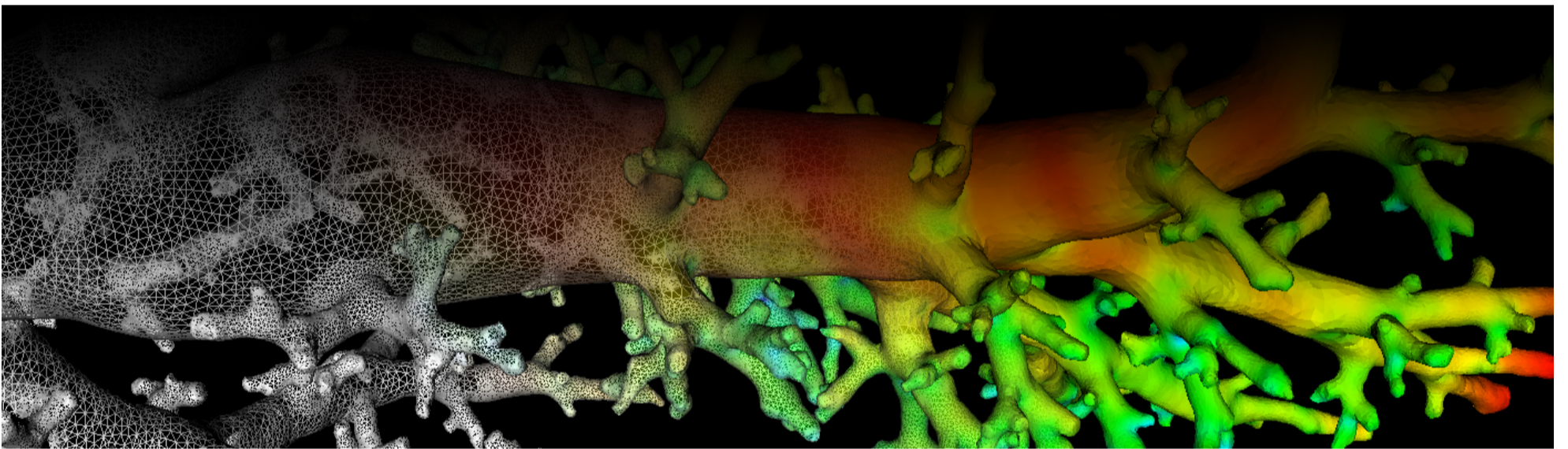
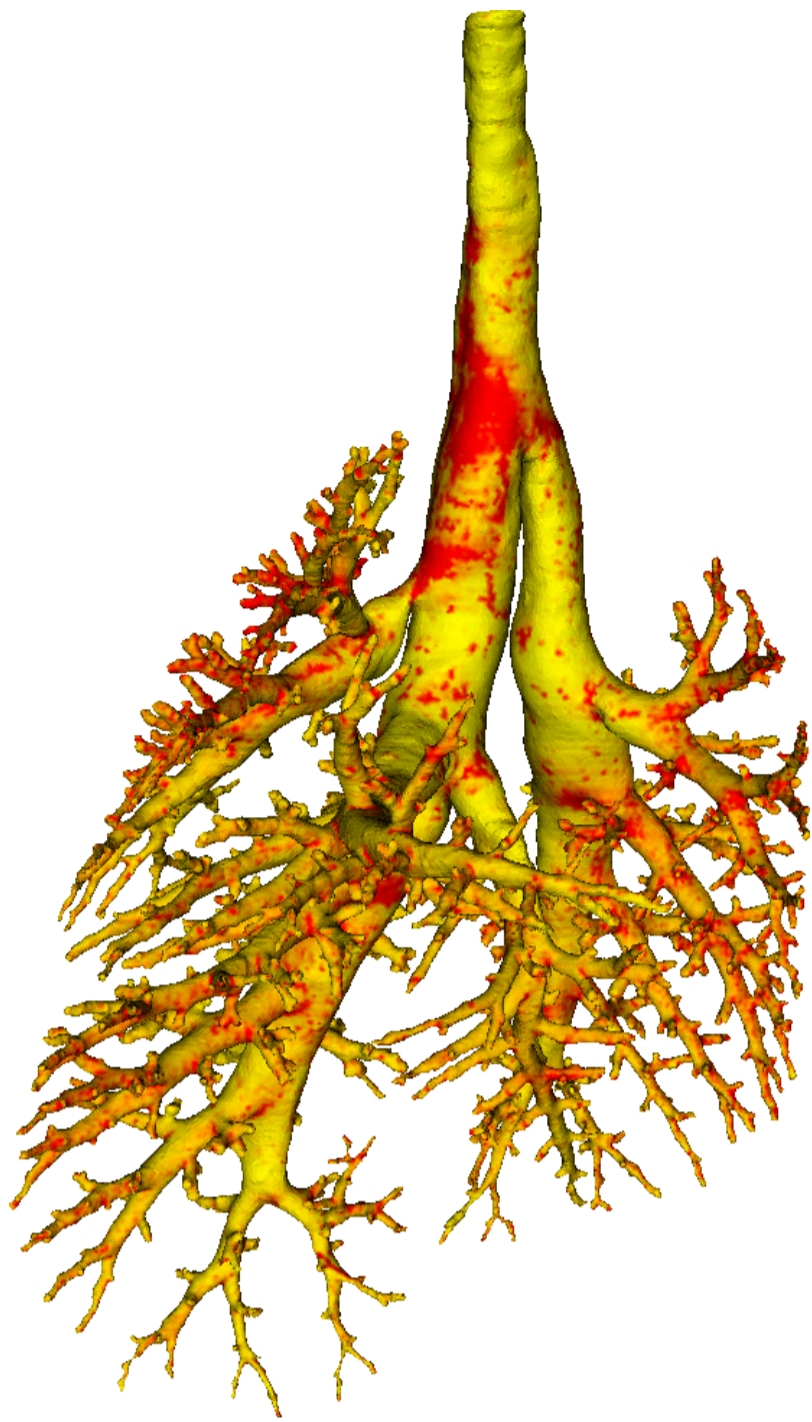


# Lung Anatomy + Particle Deposition (lapd) Mouse Archive for Modeling and Computational Toxicology



m25

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## Mouse Physiologic Parameters

- Sex: Female
- Strain: BALB/c
- Weight (g): 21.9
- 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: 2 microns
- Exposure time: 15 minutes
- Exposure estimate: 1.42E+06 FMS

Time	RR (bpm)	Vt (ml)	VE (ml/min)	I:E
Pre Aerosol	249	0.05	12.6	0.93
Post 7.5min Aerosol	234	0.03	7.9	0.98
Post 15min Aerosol	202	0.03	5.4	0.94

## Slicing Info

- Approximate lung orientation: LAS
- Camera: D7100, 14-bit, 200mm Nikkor Macro lens, f/16
- Voxel size: 4.70 x 4.70 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	1000	
darks		77	20000	1000	

- Notes regarding slicing:
  - This lung is under-filled, with approximately 0.85mL OCT.
  - The trachea is a little misshapen.

## Airway Segmentation

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- Total centerline length: 493.256 mm
- Number of branches: 1340
- Number of terminal branches: 671
- Maximum generation number: 26
- Number of outlet areas: 1779

## Compartment Sizes and Aerosol Deposition

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- Lung volume: 711.03 (mm<sup>3</sup>)

Compartments	Count	Volume (mm <sup>3</sup> )
Lung	1	711.03
Lobes	5	142.21±68.24
Sublobes	50	13.86±13.37
Near acini	244	2.76±1.65

Lobe	Volume (mm <sup>3</sup> )	Average aerosol deposition
left	240.35	1.23±2.33
cranial	123.39	1.37±4.32
middle	93.45	0.91±1.28
caudal	199.23	0.94±1.50
accessory	54.62	1.50±2.39

## Additional Notes

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- Overall quality: C
- Image data was slightly blurry
- Bottom of left and middle lobes were missing
- Trachea had imaging artifacts and non physiological shape; segmentation is more "roundish" instead
- Accessory main branch was kinked
- Because imaging data was blurrier than usual, outlet detection might have missed some outlets