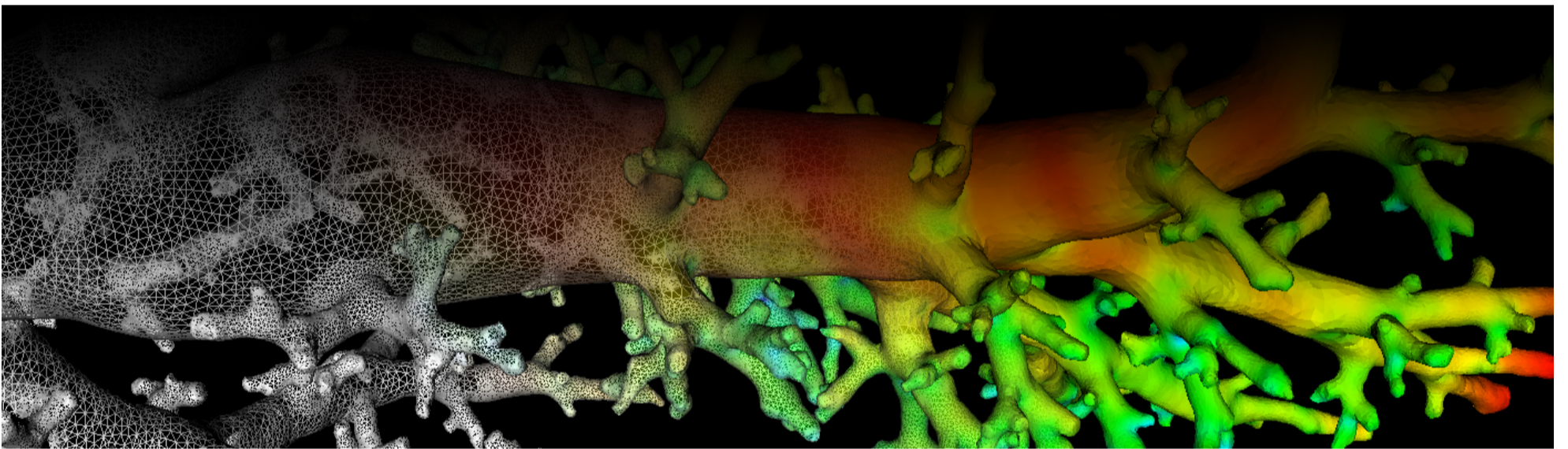
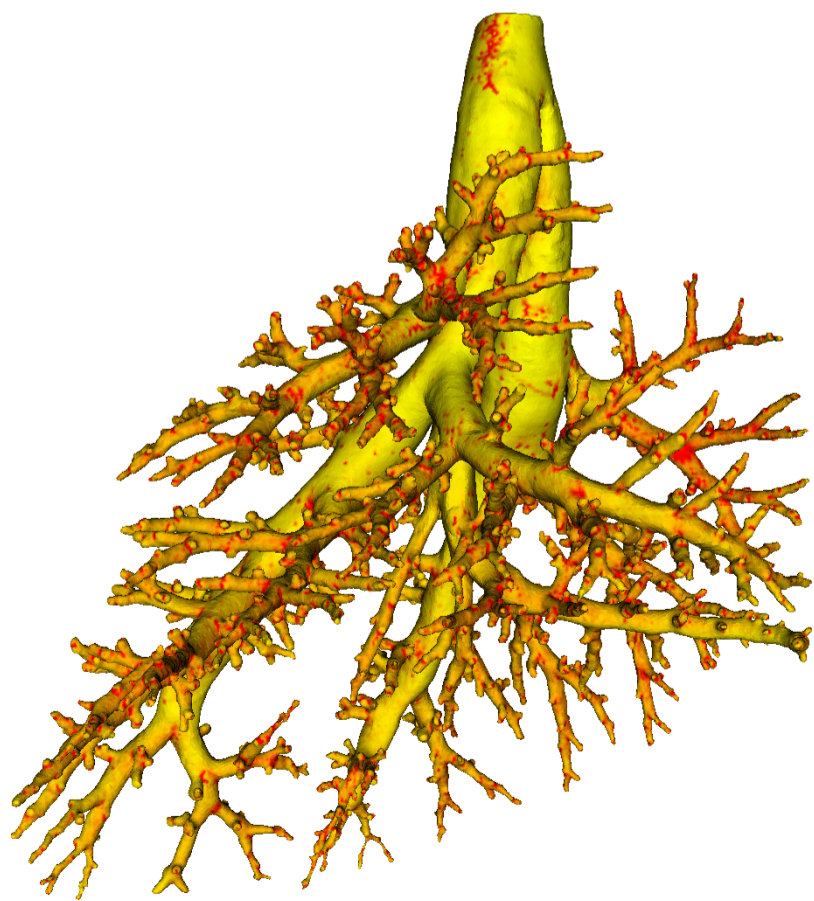


# Lung Anatomy + Particle Deposition (lapd) Mouse Archive for Modeling and Computational Toxicology



m09

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## Mouse Physiologic Parameters

- Sex: Female
- Strain: BALB/c
- Weight (g): 23.7
- 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 micron
- Exposure time: 10 minutes
- Exposure estimate: 1.37E+08 FMS

Time	RR (bpm)	Vt (ml)	VE (ml/min)	I:E
Pre Aerosol	220	0.24	53.6	0.90
Post 5 Aerosol	216	0.21	46.4	0.75
Post 10 Aerosol	236	0.29	67.7	0.80

## Slicing Info

- Approximate lung orientation: LAS (rotated ~45 deg CCW)
- Camera: D7100, 14-bit, 200mm Nikkor Macro lens, f/16
- Voxel size: 4.64 x 4.64 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	(nm)
Image	Exp	Exp	Exp	Exp	Notes
white	25	125	6000	167	1 drop rhodamine B/10mL OCT
cal	20	50	40	200	
images	N/A	50	15000	333	
darks		50	15000	333	

- Notes regarding slicing:
  - One 'hanging' shard covered a portion of the lung for tens of slices in the caudal region (around slice 1945)
  - The apex of the right lung may have a break in it.

## Airway Segmentation

- Total centerline length: 529.485 mm
- Number of branches: 1246
- Number of terminal branches: 628
- Maximum generation number: 26
- Number of outlet areas: 1810

## Compartment Sizes and Aerosol Deposition

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- Lung volume: 1128.40 (mm<sup>3</sup>)

Compartments	Count	Volume (mm <sup>3</sup> )
Lung	1	1128.40
Lobes	5	225.68±104.88
Sublobes	52	21.23±19.36
Near acini	376	2.85±1.75

Lobe	Volume (mm <sup>3</sup> )	Average aerosol deposition
left	382.24	1.26±1.34
cranial	172.30	1.28±1.62
middle	146.63	1.19±1.12
caudal	316.33	1.00±1.06
accessory	110.91	1.20±1.10

## Additional Notes

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- Overall quality: A
- Bottom tip of caudal lobe has dark/out of focus areas which affected visibility of some peripheral airways

Updated: 7/24/19  
2018 r2b