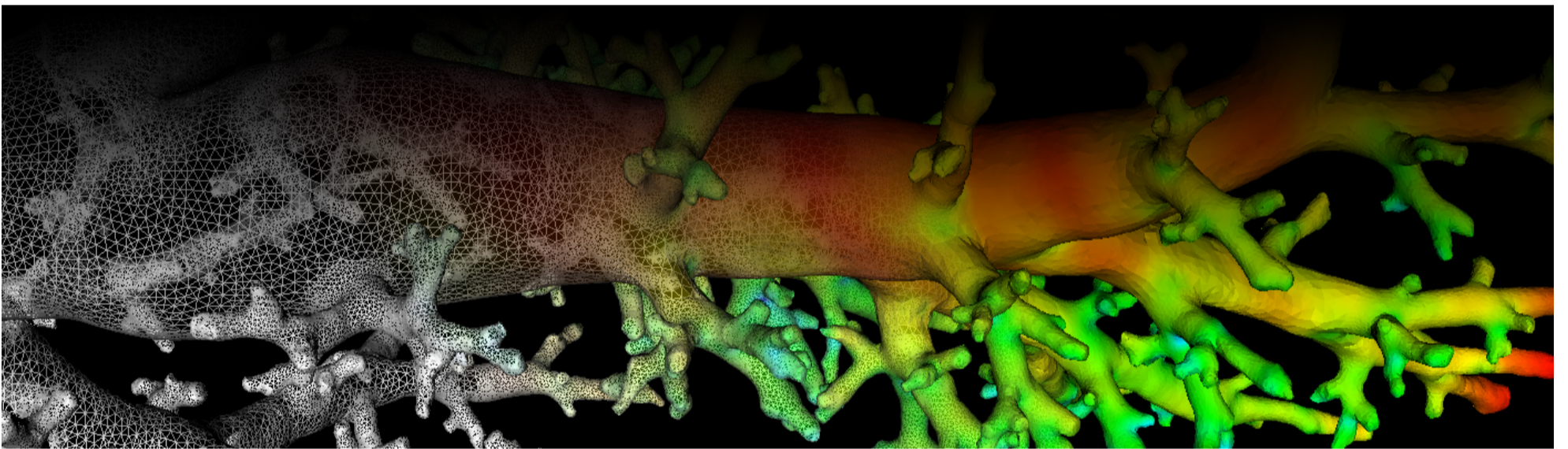
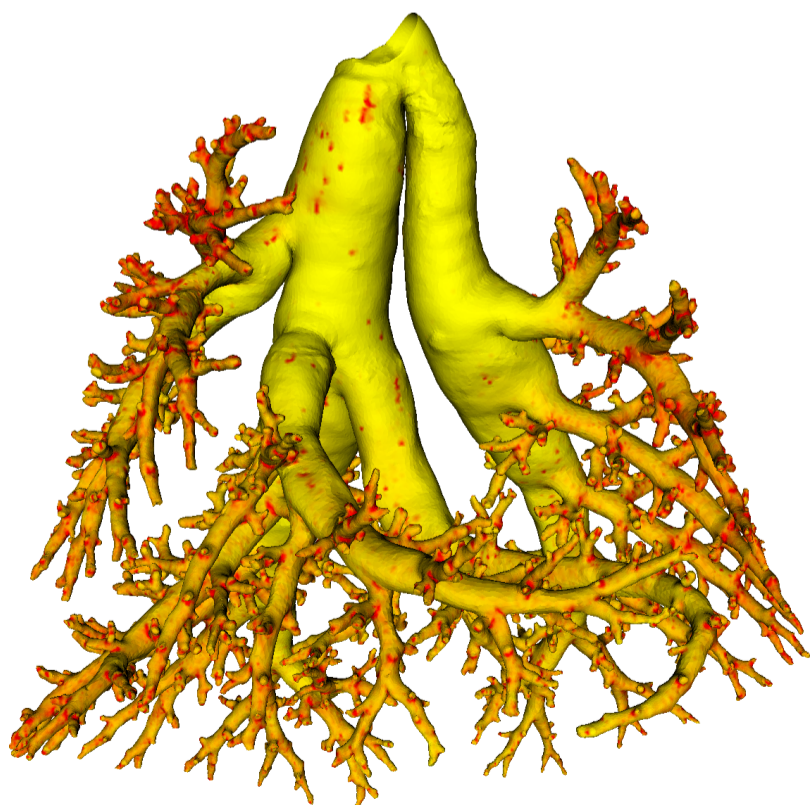


Lung Anatomy + Particle Deposition (lapd) Mouse Archive for Modeling and Computational Toxicology



m06

[Go to data folder](#)



Mouse Physiologic Parameters

- Sex: Female

- Strain: B6C3F1
- Weight (g): 21.0
- Vendor: Charles Rivers
- 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: 1.24E+08 FMS

Time	RR (bpm)	Vt (ml)	VE (ml/min)	I:E
Pre Aerosol	133	0.16	20.9	1.00
Post 5 Aerosol	164	0.16	25.8	0.97
Post 10 Aerosol	201	0.27	55.2	0.93

Slicing Info

- Approximate lung orientation: LAS
- 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:
 - Sample broke before embedding so the trachea is very short and part of the tracheal wall is missing at the top of the sample.
 - Problem with camera focus around slices 661-664.
 - Two fiducial markers are missing before slicing was finished.

Airway Segmentation

- Total centerline length: 605.276 mm
- Number of branches: 1670
- Number of terminal branches: 839
- Maximum generation number: 25
- Number of outlet areas: 1912

Compartment Sizes and Aerosol Deposition

- Lung volume: 1103.35 (mm³)

Compartments	Count	Volume (mm ³)
Lung	1	1103.35
Lobes	5	220.67±94.33
Sublobes	53	20.18±19.19
Near acini	386	2.68±1.36

Lobe	Volume (mm ³)	Average aerosol deposition
left	356.26	1.29±1.33
cranial	183.37	1.34±1.32
middle	144.45	1.15±0.99
caudal	306.23	1.12±1.01
accessory	113.04	0.88±0.84

Additional Notes

- Overall quality: B
- Fiducial markers were not visible to the very end of the sample leading to some larger displacements
- Sample broke before embedding, breaking off part of the trachea. Segmented trachea piece is very short.

Updated: 7/24/19
2018 r2b