Tissue geometry may govern lung branching mode selection

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PII: S0022-5193(17)30578-7
DOI: 10.1016/j.jtbi.2017.12.031
Reference: YJTBI 9313

To appear in: *Journal of Theoretical Biology*

Received date: 17 July 2017
Revised date: 19 December 2017
Accepted date: 31 December 2017

Please cite this article as: Uduak Z. George , Sharon R. Lubkin , Tissue geometry may govern lung branching mode selection, *Journal of Theoretical Biology* (2018), doi: 10.1016/j.jtbi.2017.12.031

Highlights

- Lung geometry plays a key role in lung branching morphogenesis
- We develop a 3D geometric model of a developing lung bud
- Geometric ratios select for tubule elongation, bending, flattening or bifurcation
- A single mechanism can give planar or orthogonal branching
- Aspect ratios of tissue surfaces determine lung branching mode