



Contribution ID : 62

Type : Poster

## Dynamic 3D imaging of lung response to mechanical ventilation to provide optimal ventilation strategies

Computed tomography (CT) is unique in that it can provide imaging of regional lung function in a non-invasive manner. This can be combined with phase contrast x-ray imaging (PCXI) which creates high contrast x-ray lung images to provide dynamic 3D full lung x-ray images. From these images we can use 4D x-ray velocimetry (4DXV) to produce measures of regional lung ventilation. Our goal is to use these techniques to measure the spatial and temporal response across the lungs to mechanical ventilation, particularly high peak inspiratory pressure (PIP) and low positive end expiratory pressure (PEEP), which have been postulated to contribute to mortality in acute respiratory distress syndrome (ARDS). We have also been able to use the aforementioned techniques to provide measures of heterogeneity in response to mechanical ventilation across the lungs. We hope to use this data to minimise ventilator-induced lung injury by providing optimal ventilation strategies for ARDS patients.

### Level of Expertise

Early Career <5 years

### Presenter Gender

Rather not state

### Pronouns

He/Him

### Do you intend to attend UM2022

Online

### Students Only - if available would you be interested in student travel funding

### Students Only – Do you wish to take part in the Student Poster Slam

### Terms and conditions (Please confirm that you have read all the requirements and agree to the conditions)

Yes

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