SIMULATION CENTRE – MECHANICAL VENTILATION AREA

- **Measurement of respiratory Mechanics at the bedside: From basics to advanced (G Foti)**
  - The purpose of this simulation scenario is to train attendees in the most important parameters that can be measured at the bedside in passively ventilated patients; including peak and plateau pressure, compliance of the respiratory system, airway resistance, intrinsic PEEP, driving pressure. The most relevant pathologic alterations of these parameters will be simulated and their clinical implications will be discussed.

- **Alveolar recruitment and PEEP setting based on respiratory mechanics (C Guérin)**
  - The purpose of this simulation scenario is to train attendees in the possible approaches to perform alveolar recruitment maneuvers and to titrate PEEP while taking into account the data derived from respiratory mechanics. The most relevant pathologic alterations of these parameters will be simulated and their clinical implications will be discussed.

- **Setting the ventilator in pressure controlled and volume controlled ventilation (G Bellani)**
  - What are the key parameters? How do you start baseline ventilation with each mode? How do you adjust settings with each mode when compliance and resistance change? The purpose of this simulation is to provide clinicians with the basic skills to set the ventilator in these modes, which are the most commonly used in the early stage of acute respiratory failure.

- **Monitoring of patient-ventilator interaction at the bedside (L Heunks)**
  - The purpose of this simulation scenario is to train attendees in the main parameters (numeric or derived from waveform observation), which allow monitoring of various aspects of a patient's ventilator interaction at the bedside, in different modes of assisted ventilation. Patients-ventilator synchrony and estimation of patient's effort will be explored and the most frequent abnormal findings will be simulated and their clinical implications will be discussed.

- **Ventilating a patient with obstructive disease (J Mancebo Cortes)**
  - The purpose of this simulation scenario is to train attendees on how to face the main challenges encountered when ventilating a patient with increased airway resistance and/or obstructive disease, such as severe asthma or COPD. These will include detection and measurement of increased airway resistance and COPD. Examples will illustrate how to optimise different ventilatory settings (tidal volume, respiratory rate, external PEEP and I:E ratio).