

1ST JORDI MANCEBO PLUG PHYSIOLOGY SYMPOSIUM

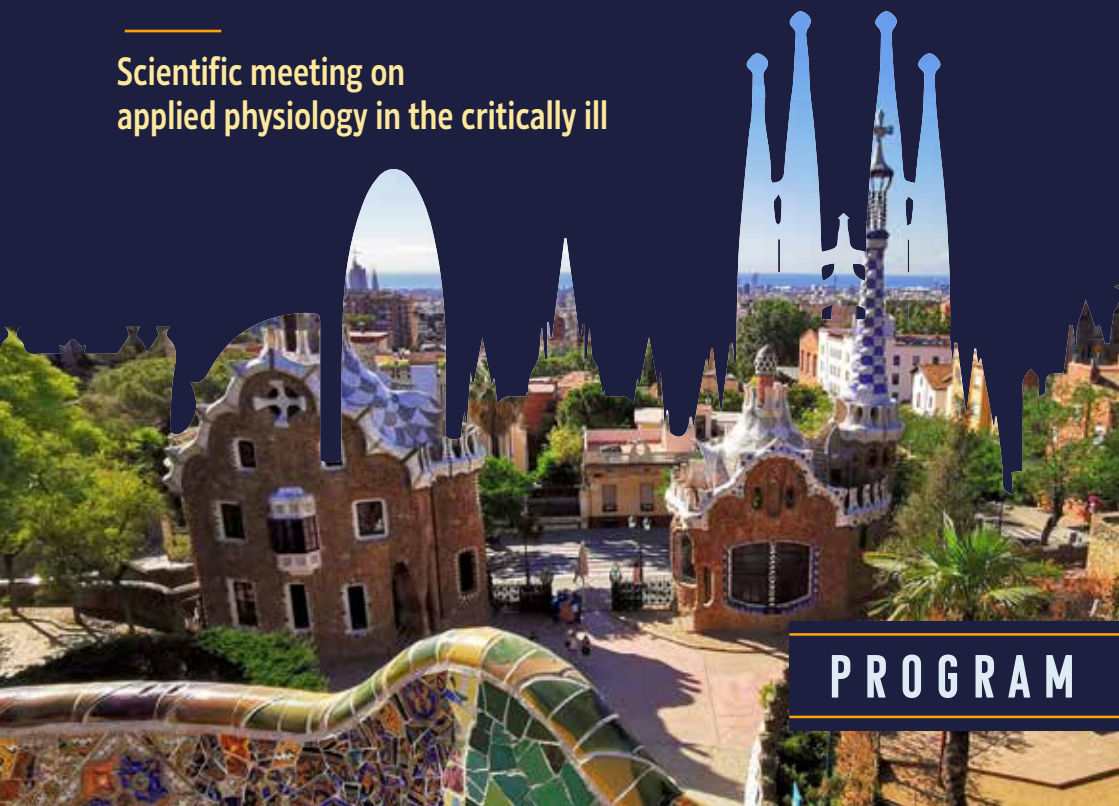
DISCUSSING RESEARCH
WITH A TASTE

Scientific meeting on
applied physiology in the critically ill

the PLV√G

BARCELONA

September 28-30 2023
www.plugwgroup.org



PROGRAM

Join us

The 1st Jordi Mancebo Plug Physiology Symposium will take place in Barcelona on September 28-30 2023. We will gather to remember and celebrate the method that Jordi taught us to discuss research: start from original data, be open to learn something new, follow the energy of the younger members. The format will be a 200-seat room where original research studies will be presented mixed with (few) expert presentations on respiratory physiology. Support for abstract presenters, younger fellows, people from far and low income countries will tentatively be provided.

PLUG EXECUTIVE COMMITTEE

Laurent, Leo, Tommaso

SCIENTIFIC COMMITTEE

Laurent Brochard, Toronto (CA)

Leo Heunks, Rotterdam (NL)

Tommaso Mauri, Milan (IT)

MEETING VENUE

SALA D'ACTES Block A - 3rd Floor
Hospital de la Santa Creu i Sant Pau
Main entrance - C/ Sant Quintí, 89
Barcelona (ES)

ORGANIZING SECRETARIAT

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PROGRAM

SEPTEMBER
28 2023

12.00 - 12.10

Welcome

Leo Heunks, Tommaso Mauri, Laurent Brochard

12.10 - 12.40

Place of respiratory physiology in Intensive Care

Laurent Brochard

Session 1

Understanding and preventing lung injury

Chairs: Leo Heunks, Liu Ling

12.40 - 13.15

KEYNOTE LECTURE **Importance of dead space in ARDS and VILI pathophysiology**
Antonio Pesenti

TOP ABSTRACTS

13.15 - 13.30

Inter-Lungs insufflation delay and asymmetrical airway closure assessed by Electrical Impedance Tomography in Acute Lung Injury
Hadrien Roze

13.30 - 14.30

LUNCH

14.30 - 14.45

Pathophysiology of lung injury induced by large non-ventilated vs. non-perfused regions: an experimental study
Ines Marongiu

14.45 - 15.00

Airway and Transpulmonary Driving Pressure by End-Inspiratory Holds during Pressure Support Ventilation in ARDS
Joaquin Pérez

15.00 - 15.15

Effects on respiratory drive and effort of PEEP personalized by electrical impedance tomography coupled with transpulmonary pressure
Valentina Chivieri

15.15 - 15.30

Sleep architecture in ARDS patients using the Odds Ratio Product (ORP). Comparison with sleep in out of hospital subjects
Carles Subira

15.30 - 15.45

COFFEE BREAK

15.45 - 16.15

ROUND TABLE Old and new challenges for experimental studies
Moderator: Tommaso Mauri
Discussants: Mayson L. Sousa, Gaetano Perchiazzi, Zhonghua Shi

16.15 - 18.00

Posters viewing and discussion time
See detailed Poster Session

18.00 - 18.30

Meeting with family and colleagues of Jordi, awards ceremony

*Time at disposal for TOP ABSTRACT is 15 minutes.

**Time at disposal for SHORT ABSTRACT is 10 minutes.

Session 2 Understanding and preventing diaphragm injury

Chairs: Alexandre Demoule, Irene Telias

9.00 - 9.35 KEYNOTE LECTURE **Diaphragm pacing: physiological mechanisms and clinical applications**
Martin Dres

TOP ABSTRACTS

9.35 - 9.50 **Diaphragm hibernation in mechanically ventilated ICU patients: super relaxed myosin is a novel mechanism of diaphragm weakness**
Zhonghua Shi

9.50 - 10.05 **Intermittent magnetic phrenic nerve stimulation to prevent ventilator-induced diaphragm dysfunction in ARDS - An experimental study**
Mayson L. Sousa

10.05 - 10.20 **MRI of the diaphragm: characterizing motion and microstructural properties in ICU patients**
Myrte Wennen

10.20 - 10.35 **Mechanical ventilation induces hypophosphorylation of myosin light chains and contributes to diaphragm hibernation and weakness by increasing the population of super relaxed myosins**
Wout Claassen

10.35 - 10.50 **Patient-ventilator interaction can be misinterpreted without gastric pressure monitoring**
Evangelia Akoumianaki

10.50 - 11.10 COFFEE BREAK

Session 3 Advanced imaging of pulmonary functions

Chairs: Antonio Pesenti, Tai Pham

11.10 - 11.45 KEYNOTE LECTURE **Estimation of regional lung perfusion and ventilation using dual energy computed tomography**
Mariangela Pellegrini

SHORT ABSTRACTS

11.45 - 11.55 **Effects of prone positioning on ventilation-perfusion mismatch in patients with early and persistent acute respiratory distress syndrome: a prospective observational study**
Liu Ling

11.55 - 12.05 **Effects of continuous anterior chest compression (CACC) and comparison with prone position in the ARDS «The StrapVent Study»**
Guillaume Carteaux

12.05 - 12.15 **Phenotyping diaphragmatic tilting motion during mechanical ventilation with spontaneous respiratory effort: a preliminary report of a four-dimensional CT study**
Ken Tonai

12.15 - 12.25 **Effect of minimizing driving pressure through PEEP titration on regional lung strain: a four-dimensional computed tomography study**
David Lagier

12.25 - 12.35 **Lung recruitability in patients with SARS-CoV2-associated acute respiratory distress syndrome: a multicenter study**
Margot Combet

12.35 - 12.45 **Baby lung differences in patients with acute respiratory distress syndrome based on lung recruitability assessed by recruit to inflate ratio**
Núria Rodríguez Farré

12.45 - 13.30 LUNCH

Session 4 Monitoring respiratory physiology to improve outcomes

Chairs: Martin Dres, Oriol Roca

13.30 - 14.05 KEYNOTE LECTURE **Asynchronies: when does it matter?**
Irene Telias

SHORT ABSTRACTS

14.05 - 14.15 **Accuracy of clinical estimation of the respiratory effort under mechanical ventilation**
Samuel Tuffet

14.15 - 14.25 **Increased alpha power in the frontal lobes with diaphragm neurostimulation in ARDS patients**
Thiago Bassi

14.25 - 14.35 **Modulation of central respiratory drive and dyspnea with high nasal airflow in intubated patients**
Valentine Le Stang

14.35 - 14.45 **Preliminary experience of right ventricular global longitudinal strain monitoring during mechanical ventilation individualization**
Gabriel Ortiz-Jaimes

14.45 - 14.55 **Validation of a solid-state esophageal pressure catheter for estimation of pleural pressure**
Rutger Flink

15.10 - 15.20 **Development and validation of a risk score for strong inspiratory efforts in critically ill patients**
Alessandro Protti

15.20 - 15.35 COFFEE BREAK

Session 5 Multicentre physiological studies: the future of high impact research?

Chairs: Samir Jaber, Tommaso Mauri

15.35 - 16.10	KEYNOTE LECTURE The PRACTICAL platform Niall Ferguson
16.10 - 16.25	<i>Collaborative studies from the Plug: The RECRUIT study</i> Annemijn Jonkman
16.25 - 16.40	<i>Collaborative studies from the Plug: The SIGH study</i> Elena Spinelli
16.40 - 16.55	<i>Collaborative studies from the Plug: The BEARDS study</i> Irene Telias
16.55 - 17.30	LECTURE Implementation of physiological studies into clinical practice Leo Heunks

Session 6 How to perform a high-quality physiological study?

Chairs: Mariangela Pellegrini, Elena Spinelli

9.00 - 10.00	Harmonization of respiratory mechanics measurements during controlled and assisted ventilation: plateau pressure; driving pressure, compliance, resistance, indexes of respiratory drive and effort, respiratory waveforms, asynchronies Presenters: Joaquin Pérez, Irene Telias Expert: Laurent Brochard
10.00 - 10.45	Harmonization of esophageal pressure monitoring: calibration, partitioned mechanics, absolute vs. elastance-derived values, effort, devices and tracings, novel technologies Presenters: Annemijn Jonkman, Evangelia Akoumianaki Expert: Martin Dres
10.45 - 11.00	B R E A K
11.00 - 11.45	Advanced measurements and open issues: recruitability, lung volumes, dead space and shunt, collapse and overdistension, pulmonary perfusion Presenters: Gaetano Scaramuzzo, Mayson L. Sousa Expert: Liu Ling, Tommaso Mauri
11.45 - 12.00	Take home messages and closure

GROUP 1

Chairs: Hadrien Roze, Savino Spadaro

POSTER 1	Effects of Ventilation with High Inspiratory Flow plus End-Inspiratory Pause on CO₂ Clearance in Intubated Patients with Chronic Obstructive Pulmonary Disease. A Pilot Trial Presenter: Joaquin Pérez
POSTER 2	Did the obesity class have an influence in respiratory mechanics? Presenter: Núria Rodríguez Farré Rodríguez Farré Núria, Izura Gómez Marta, Cordon Abalde Alejandra, Gomila Sintés Carme, Flores Orella Matías, Segarra Martínez-Sahuquillo Ana, Morales Alarcón Miguel, Mateo Marquina Laura, Martos Mendizabal Mikel, Santos Rodríguez Jose Alberto, Morán Chorro Indalecio
POSTER 3	Transpulmonary pressure and respiratory driving pressure during proportional assist ventilation in patients with acute respiratory distress syndrome Presenter: Evangelia Akoumianaki Akoumianaki Evangelia, Vaporidi Katerina, Kondili Eumorfia, Georgopoulos Dimitrios, Stamatopoulou Vaia
POSTER 4	Which spontaneous breathing trial to predict effort to breathe after extubation according to five critical illnesses: the cross over GLOBAL WEAN study Presenter: Samir Jaber Mathieu Capdevila, Audrey De Jong, Yassir Aarab, Aurelie Vonarb, Julie Carr, Nicolas Molinari, Xavier Capdevila, Laurent Brochard, Samir Jaber,
POSTER 5	Sedation and sleep architecture measured with the Odds Ratio Product (ORP) in mechanically ventilated patients with acute hypoxemic respiratory failure (AHRF) Presenter: Carles Subira Rodrigues Antenor, Subira Carles, Kim Audery, Stavi Dekel, Taran Shaurya, Pereira Sergio, Sklar Michael C, Wilcox M. Elizabeth, Younes Magdy K, Brochard Laurent, Tellias Irene
POSTER 6	The effect of pneumoperitoneum on regional lung mechanics assessed by Electric Impedance Tomography (EIT) in obese patients undergoing laparoscopic surgery Presenter: Gaetano Scaramuzzo Scaramuzzo Gaetano, Priani Paolo, Ferrara Pierluigi, Ragazzi Riccardo, Verri Marco, Spadaro Savino, Volta Carlo Alberto
POSTER 7	Dynamic lung aeration and strain at the positive end-expiratory pressure of maximal compliance in a recruitable experimental model of acute lung injury Presenter: Marcos Vidal Melo Vidal Melo Marcos, Zhu Min, Motta-Ribeiro Gabriel, Lagier David, Hinoshita Takuga, Grogg Kira, Zang Mingyang, Winkler Tilo, Zeng Congli

GROUP 1

Chairs: Hadrien Roze, Savino Spadaro

POSTER 8	<p>The impact of obesity on inflation/perfusion matching in acute hypoxic respiratory failure: a dual-energy computer tomography study. Presenter: Kristín Jóna Bjarnadóttir</p> <p>Bjarnadóttir Kristín Jóna, Perchiazzi Gaetano, Segelsjö Monica, Hansen Tomas, Frithiof Robert, Hultström Michael, Lipcsey Miklos, Pellegrini Mariangela</p>
POSTER 9	<p>Static and dynamic characteristics of sheep chest wall during mechanical ventilation Presenter: Camilla Ziliani</p> <p>Ziliani Camilla, Kyriakoudi Anna, Acocella Fabio, Ravasio Giuliano, Galli Roberto, Pecchiari Matteo</p>
POSTER 10	<p>Impact of inadequate assisted ventilation on diaphragm function and structure Presenter: Samir Jaber</p> <p>Mathieu Capdevila, Audrey De Jong, Boris Jung, Yassir Aarab, Joris Pensier, Lucas Deffontis, Thomas Sfara, Ambre Cuny, Julie Carr, Nicolas Molinari, Jean-Yves Le Guennec, Fabrice Raynaud, Stefan Matecki, Laurent Brochard, Alain Lacampagne, Samir Jaber</p>
POSTER 11	<p>Predicting extubation in patients with traumatic cervical spinal cord injury using the diaphragm electrical activity during a single maximal maneuver Presenter: Rui Zhang</p> <p>Zhang Rui, Liu Ling</p>

9 minutes for each poster (5 minutes presentation + 4 minutes discussion)

GROUP 2

Chairs: Sheldon Magder, Elena Spinelli

POSTER 12	<p>Calibration of esophageal pressure to obtain a reliable estimation of absolute intrathoracic pressure: a study in a model of eviscerated chest Presenter: Sebastiano Maria Colombo</p> <p>Florio Gaetano, Carlesso Eleonora, Mojoli Francesco, Madotto Fabiana, Vivona Luigi, Minaudo Chiara, Battistin Michele, Sebastiano Maria Colombo, Francione Sofia, Di Pellegrino Sofia, Pesenti Antonio, Grasselli Giacomo, Zanella Alberto</p>
POSTER 13	<p>Inspiratory effort assessment during pressure support ventilation at different levels of expiratory cycling: a physiological study. Presenter: Emanuele Rezoagli</p> <p>Rezoagli Emanuele, Moretto Lorenza, Raimondi Cominesi Davide, Nova Alice, Bellani Giacomo, Foti Giuseppe</p>
POSTER 14	<p>Influence of position on esophageal and transpulmonary pressure in patients with ARDS Presenter: Gaëlle Fouqué</p> <p>Fouqué Gaëlle, Hagry Julien, Lai Christopher, Shi Rui, Rosalba Daniela, Cappio Simone, Rocca Eduardo, Monnet Xavier, Pham Tai</p>
POSTER 15	<p>Flow-controlled vs. pressure-controlled ventilation in post-cardiothoracic surgery ICU patients: a physiological study Presenter: Annemijn Jonkman</p> <p>Van Oosten Julien, Jonkman Annemijn, Endeman Rik, Gommers Diederik</p>
POSTER 16	<p>Association between changes in oxygenation and transpulmonary pressure during supine and prone manoeuvres Presenter: Marta Izura Gómez</p> <p>Izura Gómez Marta, Rodríguez Farré Núria, Baldirà Martínez De Irujo Jaume, Cordon Abalde Alejandra, Gomila Sintes Carme, Flores Orella Matias, Segarra Martínez-Sahuquillo Ana, Morales Alarcon Miguel, Mateo Marquina Laura, Martos Mendizabal Mikel, Santos Rodriguez J. Alberto, Moran Chorro Indalecio</p>
POSTER 17	<p>Stress Index and Mechanical Power Applied during Mechanical Ventilation Presenter: Ricardo Jeréz Sánchez</p> <p>Jeréz Sánchez Ricardo, Tejero Pedregosa Armando, Parra Morais Laura, Beltrán Bernáldez María Reyes, Sanmartino González Carolina, Berenguer Rodríguez Miguel, Serra Sánchez Candela, Tarancón Maján Felicitas Concepción, Marcos Gutiérrez Alfredo, López Pérez Ana Belén, Cortés Díaz Silvia, Beltrán Martínez Laura Lorena, Monge Donaia Diana, Ochoa Sangrador Carlos</p>

9 minutes for each poster (5 minutes presentation + 4 minutes discussion)

GROUP 2

Chairs: Sheldon Magder, Elena Spinelli

POSTER 18	<p>Investigation of expiratory muscle relaxation-induced triggering using surface electromyography: A case study Presenter: Jan Graßhoff Sauer Julia, Graßhoff Jan, Carbon Niklas M., Weber-Carstens Steffen, Rostalski Philipp</p>
POSTER 19	<p>Analysis of P_{Es0} derived variables during spontaneous breathing effort in patients with acute respiratory failure Presenter: Andrea Castellví-Font Francisco José Parrilla-Gómez, Andrea Castellví-Font, Patricia Astelarra Ruiz de Aguirre, Angie Ramírez, Yaiza Rodríguez, Lorena Sotelo, Víctor Boutonnet, Andrés Parrilla-Gómez, and Joan Ramon Masclans</p>
POSTER 20	<p>Influence of the mode of ventilation on the relationship between breathing effort, lung stress-strain, and alveolar pressure during mechanical ventilation Presenter: Irene Telias Irene Telias, Matías Madorno, Tâi Pham, Rémi Coudroy, Elias Baedorf-Kassis, Chang Wen Chen, Savino Spadaro, Davide Chiumello, Jeremy Beitler, Eumorfia Kondili, Norberto Tiribelli, Sebastián Fredes, Tobias Becher, Nicolas Terzi, Claude Guérin, Tommaso Mauri, Oriol Roca, Jordi Mancebo, Nuria Rodriguez, Jean-Michel Arnal, Ewan C Goligher, Ricard Artigas Mellado, Jean-Luc Diehl, Sébastien Jochmans, François Beloncle, Nuttapol Rittayamai, Francesco Mojoli, Leo Heunks, Heder De Vries, Jian-Xin Zhou, Christophe Guervilly, and Laurent Brochard on behalf of the BEARDS and Plug Investigators</p>
POSTER 21	<p>Influence of the magnitude and synchrony of breathing efforts on lung stress-strain and alveolar pressure during early moderate and severe acute hypoxemic respiratory failure Presenter: Irene Telias Irene Telias, Matías Madorno, Tâi Pham, Rémi Coudroy, Elias Baedorf-Kassis, Chang Wen Chen, Savino Spadaro, Davide Chiumello, Jeremy Beitler, Eumorfia Kondili, Norberto Tiribelli, Sebastián Fredes, Tobias Becher, Nicolas Terzi, Claude Guérin, Tommaso Mauri, Oriol Roca, Jordi Mancebo, Nuria Rodriguez, Jean-Michel Arnal, Ewan C Goligher, Ricard Artigas Mellado, Jean-Luc Diehl, Sébastien Jochmans, François Beloncle, Nuttapol Rittayamai, Francesco Mojoli, Leo Heunks, Heder De Vries, Jian-Xin Zhou, Christophe Guervilly, and Laurent Brochard on behalf of the BEARDS and Plug Investigators</p>
POSTER 22	<p>Total and Lost Power for ventilator-induced lung injury Presenter: Jonson Bjorn B. Jonson, J. Aboab, L. Brochard</p>

9 minutes for each poster (5 minutes presentation + 4 minutes discussion)

We are grateful to the following Companies for their contribution to the success of the PLUG Meeting:



REGISTRATION INFORMATION

Admission to the Symposium is limited to max 200 people, with mandatory pre-registration.

REGISTRATION FEES

Physician _____	€ 350,00
Resident, Trainee, PhD student, Nurse, AHP _____	€ 90,00
Abstract/Poster presenter _____	€ 90,00
Exhibitor/Companies employee _____	€ 350,00

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