

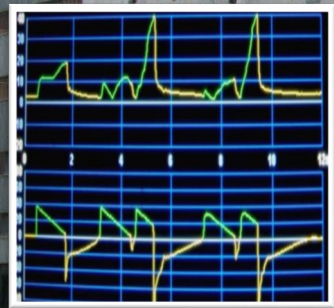


Mayo Clinic

*Mechanical Ventilation Conference*

**October 10-12, 2019**

**The Kahler Grand Hotel ♦ Rochester, MN**



**REGISTER ONLINE TODAY**

<http://ce.mayo.edu/ventilationconference2019>



# General Information

## Course Description

*Mayo Clinic Mechanical Ventilation Conference* is designed to provide high quality education and detailed hands-on instruction in mechanical ventilation management and to bring physicians, respiratory therapists, and other health care providers who are involved in providing respiratory care on a daily basis.

## Course Learning Objectives

Upon conclusion of this program, participants should be able to

1. Outline the physiologic principles and cardiopulmonary interactions underlying the risks, benefits, and applications of ventilator support for respiratory failure.
2. Describe in detail the use of different modes of ventilator support for patients with respiratory failure.
3. Demonstrate appropriate use of mechanical ventilation equipment following participation in hands-on workshop.
4. Integrate pulmonary mechanics at the bedside in a personalized approach to mechanical ventilation.



## Intended Audience

Mayo Clinic Mechanical Ventilation Conference is designed for critical care providers, respiratory therapists, physicians, physician assistants and nurse practitioners.

## Credit



JOINT ACCREDITATION™  
INTERPROFESSIONAL CONTINUING EDUCATION

In support of improving patient care, Mayo Clinic College of Medicine and Science is jointly accredited by the Accreditation Council for Continuing Medical Education (ACGME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC) to provide continuing education for the healthcare team.

The American Medical Association (AMA) and the Accreditation Council for Continuing Medical Education (ACCME). Mayo Clinic College of Medicine and Science designates this live activity for a maximum of **17.25 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

The American Association for Respiratory Care approves a maximum of **17.00** contact hours *Continuing Respiratory Care Education (CRCE)* credit for this activity.

# General Information

## Date and Location

*Mayo Clinic Mechanical Ventilation Conference* will be held October 10-12, 2019. Conference headquarters will be located in Heritage Hall on the subway level of The Kahler Grand Hotel, 20 SW Second Avenue, Rochester, Minnesota 55902. Meeting facilities are easily accessible by skyway and pedestrian subway, which connect The Kahler Grand Hotel to Mayo Clinic, shops, and a variety of restaurants.

Visit <http://www.thekahlerhotel.com/> for more information.

## Registration

To register online, visit <https://ce.mayo.edu/anesthesiology/content/mayo-clinic-mechanical-ventilation-conference-2019>.

**The registration fee includes:** conference registration, daily continental breakfast, break refreshments and lunches (meeting participants only), and welcome reception.

Although it is not Mayo Clinic School of Continuous Professional Development (CPD) or Mayo Clinic Department of Pulmonary and Critical Care Medicine and Mayo Clinic Department of Anesthesiology and Perioperative Medicine CME policy to limit the number of registrants for a conference, conference room facilities may necessitate closing of enrollment, therefore, early registration is advised. A letter of confirmation will be sent upon receipt of payment and completed registration form. Please present the confirmation letter when checking in at the meeting registration desk.

### **For additional information, contact:**

Mayo Clinic School of Continuous Professional Development  
Plummer Building 2  
200 First Street SW  
Rochester, MN 55905

**Website:** <http://ce.mayo.edu/ventilationconference2019>

**Phone:** 800-323-2688

## Cancellation Policy

Requests for cancellations must be submitted in writing to [cme@mayo.edu](mailto:cme@mayo.edu). When cancelling a registration for a conference for a conference 14 days or more before the conference start date, a full refund (minus a \$75 administrative fee) will be issued in the same form of payment the registration was received. No refunds are granted less than 14 days before the conference start date.

Mayo Clinic Department of Pulmonary and Critical Care Medicine, Mayo Clinic Department of Anesthesiology and Perioperative Medicine and/or Mayo Clinic School of Continuous Professional Development reserves the right to cancel or postpone any conference due to unforeseen circumstances. In the unlikely event Mayo Clinic Department of Pulmonary and Critical Care Medicine, Mayo Clinic Department of Anesthesiology and Perioperative Medicine and/or Mayo Clinic School of Continuous Professional Development must cancel or postpone this conference, Mayo Clinic School of Continuous Professional Development will refund the registration fee but is not responsible for any related costs, charges, or expenses to participants, including fees assessed by airline/travel/lodging agencies.

# General Information

## Travel

Rochester, Minnesota is a friendly city that greets thousands of visitors from around the world each year. The city is serviced by a modern international airport with multiple flights daily via American, United and Delta Airlines. Access to and from the airport is provided by taxi, shuttle service, and rental car. The airport is located approximately 10 miles from The Kahler Grand Hotel and the Mayo Clinic campus.

*Note to Travelers:* Several cities in the United States are named Rochester. When you make airline reservations and check your baggage, be sure that your destination is Rochester, Minnesota (RST) and that your baggage has been properly tagged

Minneapolis/St. Paul International Airport (MSP) is located approximately 82 miles from Rochester. The following shuttle services offer multiple trips daily.

### **Groome Transportation**

800-280-9270

\$37 per person

<http://www.groometransportation.com/>

### **Rochester Shuttle Service**

507-216-6354

\$34 per person

<http://www.rochestershuttleservice.com>

Rates are quoted for one-way fares to or from the Minneapolis Airport. Rates are subject to change and do not include taxes, fee, or gratuities.

*Travel arrangements are the sole responsibility of the individual registrant.*

## Parking

Parking is available in hotel and city ramps. The cost for parking is not included in the registration fee; parking will not be validated.



# General Information

## Accommodations

Guest rooms have been reserved for attendees and their guests with special course rates at the Kahler Grand Hotel. The hotel is easily accessible by skyway and pedestrian subway. In order to receive the special rate, *reservations must be made before the room block is filled or before the expiration date of September 18, 2019, whichever comes first.* Reservations will be taken following this date based on space and rate availability. Please identify yourself as a participant of the *2019 Mayo Clinic Ventilation Conference* when making your reservation.

### **Kahler Grand Hotel**

20 Second Avenue SW

Rochester, MN 55902

800-533-1655 or 507-282-2581

\$149 (*Deluxe King*)

[Mayo Clinic Ventilation Conference](#)

or

<https://res.windsurfercrs.com/ibe/details.aspx?propertyid=9733&nights=1&checkin=10/09/2019&group=10318VENTILAT>



Quoted room rates do not include taxes or service fees. All reservations must be accompanied by a first night room deposit or guaranteed with a major credit card. Check-in time is 4:00 p.m. on the day of arrival, and check-out time is 11:00 a.m. on the day of departure. Early arrival prior to 11:00 a.m. will incur an early arrival fee of \$35.00.

*Lodging arrangements are the sole responsibility of the individual registrant.*

Mayo Clinic Department of Pulmonary and Critical Care Medicine and Mayo Clinic Department of Anesthesiology and Perioperative Medicine are not responsible for expenses incurred by an individual who is not confirmed and for whom space is not available at the meeting. Costs incurred by the registrant such as airline or hotel fees or penalties are the responsibility of the registrant.

## Social Program

### **Welcome Reception – Wednesday, October 9, 2019 – 5:30 p.m.**

Attendees and guests are cordially invited to join conference faculty for the Welcome Reception on Wednesday evening, October 9, 2019. Pre-registration is requested.

# General Information

## Faculty

### Conference Directors

*Richard A. Oeckler, M.D., Ph.D*  
*John J. Marini, M.D.*

*Gustavo A. Cortes Puentes, M.D.*  
*Todd J. Meyer, R.R.T., L.R.T.*

### Guest Faculty

**Alexander B. Adams, R.R.T., MPH**, Previously Senior Research Coordinator, Department of Pulmonary, Critical Care and Sleep Medicine, HealthPartners Medical Group & Clinics, Regions Hospital, St. Paul; and Chief of Respiratory Therapy at Hennepin County Medical Center, Minneapolis, Minnesota, United States.

**Marcelo Amato, M.D.**, Department of Pulmonary and Critical Care Medicine, Professor of Medicine, University of São Paulo, *Brazil*

**Richard Branson, MSc, R.R.T.**, Professor of Surgery, Director of Clinical Research, Department of Surgery, University of Cincinnati College of Medicine, Cincinnati, Ohio. *United States* Chief Editor, Respiratory Care

**Laurent J. Brochard, M.D.**, Chair, Interdepartmental Division of Critical Care Medicine, University of Toronto; Staff Physician, Critical Care Department, St. Michael's Hospital. Keenan Chair in Critical Care and Respiratory Medicine, St. Michael's Hospital and University of Toronto. Toronto, *Canada*

**David J. Dries, MSE, M.D.**, Chair-Department of Surgery, HealthPartners Medical Group & Clinics, Regions Hospital, St. Paul; Professor of Surgery, Clinical Adjunct Professor of Emergency Medicine, and John F. Perry Jr. Chair of Trauma Surgery, University of Minnesota, Minneapolis, *United States*

**Dean Hess, Ph.D, R.R.T.**, Respiratory Care, Massachusetts General Hospital, Boston, Massachusetts; *United States*

**Rolf D. Hubmayr, M.D.**, Emeritus Consultant, Division of Pulmonary and Critical Care Medicine, Mayo Clinic; Professor of Medicine and Physiology, Mayo Clinic College of Medicine. Rochester, Minnesota, *United States*

**Robert M. Kacmarek, Ph.D, R.R.T.**, Director, Respiratory Care Services, Massachusetts General Hospital, Boston, Massachusetts, *United States*

**Neil R. MacIntyre Jr., M.D.**, Medical Director of Respiratory Care Services, Pulmonary Function Laboratory and Pulmonary Rehabilitation Program, Chief of Clinical Services, Division of Pulmonary and Critical Care Medicine, Professor of Medicine, Duke University Medical Center, Durham, North Carolina, *United States*

**John J. Marini, M.D.**, Department of Pulmonary, Critical Care and Sleep Medicine, HealthPartners Medical Group & Clinics, Regions Hospital, St. Paul; Professor of Medicine, University of Minnesota Medical School, Minneapolis, *United States*

**Michael Quintel, M.D., Ph.D**, Chair, Department of Anesthesiology, Emergency and Intensive Care Medicine. Professor of Anesthesiology, University of Göttingen. He served as President of the German Interdisciplinary Society of Intensive Care Medicine (DIVI). Göttingen, *Germany*

### Mayo Clinic Faculty

*James E. Baker, R.R.T., L.R.T*  
*Holly D. Behrns, R.R.T., L.R.T.*  
*John K. Bohman, M.D.*  
*Gustavo A. Cortes Puentes, M.D.*  
*Onur Demirci, M.D.*  
*Jennifer L. Elmer, APRN, CNS, D.N.P.*

*Bhargavi Gali, M.D.*  
*Alice Gallo De Moraes, M.D.*  
*Peter C. Gay, M.D.*  
*Denzil R. Hill, M.D.*  
*Steven R. Holets, R.R.T., L.R.T.*  
*Andrea T. Lehnertz, APRN, CNS, M.S.N.*

*Todd J. Meyer, R.R.T., L.R.T.*  
*Richard A. Oeckler, M.D., Ph.D.*  
*Richard K. Patch III, M.D.*  
*Bernardo J. Selim, M.D.*  
*Charles R. Sims III, M.D.*

# Conference Program

## Day 1 – Thursday, October 10, 2019

- 7:00 **Registration and Continental Breakfast**
- 7:45 **Welcome, Overview and Announcements.**  
*Richard A. Oeckler, M.D., Ph.D and John J. Marini, M.D.*
- Lectures: Basics Physiologic Principles: Understanding Mechanical Ventilation**
- 8:00 **Core Principles of Ventilatory Support: Equation of Motion, Pressures, Volumes, and Flow**  
*Rolf D. Hubmayr, M.D.*
- 8:30 **Patient-Ventilator Interaction: Physiologic Changes Secondary to Mechanical Ventilation**  
*John J. Marini, M.D.*
- 9:00 **Modes: Pressure vs. Flow Regulation**  
*Neil R. MacIntyre Jr., M.D.*
- 9:30 **Refreshment Break and Exhibits**

**10:00 – 11:30 Breakout Sessions:**  
*Intensive Tutorials, Case Discussions, Introductory Workshops*

### Intensive Tutorials

Select **ONE** of these sessions (90 minutes):

1. Open Lung Strategy in 2019 –Pros & Cons  
*John J. Marini, M.D. and Marcelo Amato M.D.*
2. Advanced Options and Non-standard Modes  
*Richard Branson, MSc, R.R.T.*
3. Pragmatics of Implementing Mechanical Ventilation  
*Denzil R. Hill, M.D.*
4. Ventilator Waveform Analysis and Asynchrony  
*Steven R. Holets, R.R.T., L.R.T.*

OR select **TWO** of the following (45 minutes each):

### Case Discussions

5. Refractory Hypoxemia –A Systematic Approach  
*Richard A. Oeckler, M.D., Ph.D*
6. Inability to Ventilate – Airway Obstruction and High Airway Pressures - *Richard K. Patch, III, M.D.*
7. Extra-Corporeal Life Support – Indications, Initial Evaluation and Implementation – *John K. Bohman, M.D.*

### Introductory Workshops

8. Prone Positioning –When, Why and How? – *Alice Gallo De Moraes, M.D., Jennifer L. Elmer, APRN, CNS, D.N.P., Andrea T. Lehnertz, APRN, CNS, M.S.N., Holly D. Behrns, R.R.T., L.R.T.*
9. Ventilation Adjuncts – Tubes, Aerosols and Clearance  
*Bhargavi Gal, M.D.*
10. Setting PEEP and Bedside Assessment of Lung Recruitability – *Gustavo A. Cortes Puentes, M.D.*

11:30 **Lunch and Exhibits**

### **Lectures: Monitoring During Mechanical Ventilation**

- 12:30 **Imaging Technology in Hypoxemic Respiratory Failure: Ultrasound, Computed Tomography and Electrical Impedance Tomography** – *Laurent J. Brochard, M.D.*
- 1:00 **Bedside Pulmonary Mechanics: Measurement and Interpretation** – *Rolf D. Hubmayr, R.R.T.*
- 1:30 **Heart-Lung Interactions: Hemodynamics Monitoring in ARDS** – *John J. Marini, M.D.*

2:00 **Refreshment Break and Exhibits**

**2:30 – 4:00 Breakout Sessions:**  
*Intensive Tutorials, Case Discussions, Introductory Workshops*

### Intensive Tutorials

Select **ONE** of these sessions (90 minutes):

1. Mechanical Ventilation Guided by Esophageal Pressure  
*James E. Baker, R.R.T., L.R.T. and Alexander B. Adams, R.R.T., MPH*
2. Monitoring Diaphragmatic Activity and Respiratory Efforts  
*Laurent J. Brochard, M.D.*
3. Fluid Management and Pulmonary Vascular Mechanics During Mechanical Ventilation – *Onur Demirci, M.D. and Charles R. Sims III, M.D.*
4. Ventilator Waveform Analysis and Asynchrony – *Steven R. Holets, R.R.T., L.R.T.*

OR select **TWO** of the following (45 minutes each):

### Case Discussions

5. Managing the obese patient: Obesity and Other Disorders of the Chest Wall – *David J. Dries, MSE, M.D.*
6. Integration of Pulmonary Mechanics –Transpulmonary and Airway Driving Pressure – *Richard A. Oeckler, M.D., Ph.D*
7. Unilateral and Asymmetrical Lung Injury – *Gustavo A. Cortes Puentes, M.D.*

### Introductory Workshops

8. Controlled Vs. Spontaneous Ventilation – *Dean R. Hess, Ph.D, R.R.T.*
9. Withdrawal of Ventilatory Support – *John J. Marini, M.D.*
10. Alternative Ventilator Strategies – *Richard Branson, MSc, R.R.T.*

4:00 **Get to Know the Experts- Q&A** – *Richard A. Oeckler, M.D., Ph.D and Gustavo A. Cortes Puentes, M.D.*

4:30 **Adjourn**

# Conference Program

## Day 2 – Friday, October 11, 2019

7:15 **Continental Breakfast**

### Lectures: Hypoxia

8:00 **Managing the Lungs & Heart: Ventilator Settings to Optimize Oxygen Delivery** – Richard A. Oeckler, M.D., Ph.D.

8:30 **Open Lung Strategies Today: A Review of the Evidence and Clinical Application in ARDS**  
Marcello Amato, M.D.

9:00 **Extra-Corporeal Life Support: When to Start, When to Stop?** – Michael Quintel, M.D., Ph.D.

9:30 **Refreshment Break and Exhibits**

**10:00 – 11:30 Breakout Sessions:**  
*Intensive Tutorials, Case Discussions, Introductory Workshops*

### Intensive Tutorials

Select **ONE** of these sessions (90 minutes):

1. Open Lung Strategy in 2019: Rationale and Demonstration – Marcello Amato, M.D.
2. Extra-Corporeal Life Support – Indications, Initial Evaluation and Implementation – John K. Bohman, M.D.
3. Pragmatics of Implementing Mechanical Ventilation  
Denzil R. Hill, M.D.
4. Refractory Hypoxemia – A Systematic Approach – Richard A. Oeckler, M.D., Ph.D. and Dean R. Hess, Ph.D., R.R.T.

**OR** Select **TWO** of the following (45 minutes each):

### Case Discussions

5. Monitoring the Ventilated Patient – Dyssynchrony and Pulmonary Mechanics – Robert M. Kacmarek, Ph.D., R.R.T.
6. Inability to Ventilate – Neuromuscular Problems  
Bernardo J. Selim, M.D.
7. Non-Invasive Ventilatory Support in ARDS – Neil R. MacIntyre Jr., M.D.

### Introductory Workshops

8. Prone Positioning – When, Why and How – Alice Gallo De Moraes, M.D., Jennifer L. Elmer, APRN, CNS, D.N.P., Andrea T. Lehnertz, APRN, CNS, M.S.N., Holly D. Behrms, R.R.T., L.R.T.
9. Bedside Assessment of Auto-PEEP, and Lung Stress and Strain – What should we monitor in the ventilated patient and when? – John J. Marini, M.D.
10. Setting PEEP and Bedside Assessment of Lung Recruitability – Gustavo A. Cortes Puentes, M.D.

11:30 **Lunch and Exhibits**

### Lectures: Ventilation

12:30 **Liberation from Mechanical Ventilation**  
Robert M. Kacmarek, Ph.D., R.R.T.

1:00 **Non-Invasive Ventilation: Principles and Decisions**  
Peter C. Gay, M.D.

1:30 **Ventilating the Obstructed Patient**  
Neil R. MacIntyre Jr., M.D.

2:00 **High Flow Nasal Cannula for Whom?**  
Dean R. Hess, Ph.D., R.R.T.

2:30 **Refreshment Break and Exhibits**

**3:00 – 4:30 Breakout Sessions:**  
*Intensive Tutorials, Case Discussions, Introductory Workshops*

### Intensive Tutorials

Select **ONE** of these sessions (90 minutes):

1. Applications and Advanced Options for Non-Invasive Ventilation – Dean R. Hess, Ph.D., R.R.T. and Bernardo J. Selim, M.D.
2. Mechanical Ventilation in Asthma and COPD – John J. Marini, M.D.
3. Extra-Corporeal Life Support – Indications, Initial Evaluation and Implementation – John K. Bohman, M.D.
4. Mechanical Ventilation Guided by Esophageal Pressure  
James E. Baker, R.R.T., L.R.T. and Alexander B. Adams, R.R.T., MPH

**OR** Select **TWO** of the following (45 minutes each):

### Case Discussions

5. Managing the Obese Patient: Obesity and Other Disorders of the Chest Wall – David J. Dries, MSE, M.D.
6. Integration of Pulmonary Mechanics – Transpulmonary and Airway Driving Pressures – Laurent J. Brochard, M.D.
7. Unilateral and Asymmetrical Lung Injury – Gustavo A. Cortes Puentes, M.D.

### Introductory Workshops

8. Controlled Vs. Spontaneous Ventilation  
Neil R. MacIntyre Jr., M.D.
9. Automated Withdrawal of Ventilation Support  
Robert M. Kacmarek, Ph.D., R.R.T.
10. Advanced Options and Alternative Modes  
Richard Branson, MSc, R.R.T.

4:30 **Get to Know the Experts- Q&A** – Richard A. Oeckler, M.D., Ph.D., John J. Marini, M.D. and Gustavo A. Cortes Puentes, M.D.

5:00 **Adjourn**



# Conference Program

## Day 3 – Saturday, October 12, 2019

7:15 **Continental Breakfast**

**Master Class Series: *Advances in Respiratory Failure Management***

8:00 **Positioning and the Compromised Respiratory System – Who gets to be prone and how often?**  
*Gustavo A. Cortes Puentes, M.D.*

8:30 **Respiratory Efforts in Hypoxemic Respiratory Failure – Is Dyssynchrony all that important?**  
*Laurent J. Brochard, M.D.*

9:00 **Current Perspective on the Open Lung Strategy – Should we adopt “Open Lung” approach for all?**  
*Marcello Amato, M.D.*

9:30 **Refreshment Break and Exhibits**

10:00 **Mechanical Power and Positive End-Expiratory Pressure – What is the real mechanical cause of VILI?**  
*John J. Marini, M.D.*

10:30 **Mechanical Ventilation during Extracorporeal Life Support – Why and How?**  
*Michael Quintel, M.D., Ph.D*

11:00 **The Near Future of Ventilatory Support**  
*Richard A. Oeckler, M.D., Ph.D*

11:30 **Pros & Cons Summary Debate**  
*Alice Gallo De Moraes, M.D. and Steven R. Holets, R.R.T.*

12:30 ***Adjourn***