

# **CURRICULUM VITAE**

## **Personal data**

Name : Alain F Broccard  
Citizenship : Switzerland  
Immigration Status: Permanent resident

## **Address:**

Intensive Care Unit  
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## **Education**

1971 - 1978 : Collège de l'Abbaye de St-Maurice, St Maurice, Switzerland.. Subject studied: Latin, English, French, German, Math, Physics, Philosophy. Best graduation score of my class 1978. Degree: Maturité type B.

1978 - 1985: University of Geneva, School of Medicine, Switzerland  
Best score of my class. Degree: MD

## **Postgraduate training**

1985 - 1986 Internship at Medicine at the Hôpital de Zone de Morges, Department of Medicine, Morges, Switzerland.

1986 - 1987 Resident at the University Hospital of Geneva, Department of Surgery, Geneva, Switzerland.

1987 - 1990 Resident at the University Hospital of Geneva, Department of Medicine, Geneva, Switzerland.

1990 - 1992 Fellow at the University Hospital of Lausanne (CHUV), Intensive Care Service, Department of Medicine, Lausanne, Switzerland.

1994-1997 Fellow at the University Minnesota, Pulmonary and Critical Care Division. Minneapolis, MN.

1997-1998 Fellow at the Mayo Clinic. Critical Care Service. Rochester, MN.

## **Interventional bronchoscopy training**

- 2007 Investigator/bronchoscopist for the Air II trial (bronchial thermopasty in patients with asthma)
- CHUM's Interventional Bronchoscopy Course. University of Montreal, Canada (5 day course)
- 2008 EBUS course. University of Calgary, Calgary, Canada (2 day course)
- Rigid bronchoscopy, silicone stent placement, medical thoracoscopy. 3 weeks rotation in the service of interventional endoscopy of Dr Dutau. Hospital Sainte Marguerite, University of Marseille, Marseille, France.
- Investigator/bronchoscopist for the endoscopic lung reduction thru bronchial valve placement in patient with COPD

## **Academic appointments:**

- 1992-1994 Chef de clinique (comparable in the USA to *clinical* Instructor), Department of Internal Medicine, Intensive Care Division of the University Hospital of Lausanne, Switzerland.
- 1998-2001 Médecin associé, Department of Internal Medicine, Intensive Care Division of the University Hospital of Lausanne, Switzerland
- 2001 to 2005 Associate Professor of Medicine, Medical School of the University of Minnesota.
- 2006 to Present Professor of Medicine, Medical School of the University of Minnesota.

## **Clinical/hospital appointments:**

- 1992-1995 Chef de clinique (staff physician), Department of Internal Medicine, Intensive Care Division of the University Hospital of Lausanne, Switzerland.
- 1998-2001 Médecin associé (Associate MICU director) Department of Internal Medicine, Intensive Care Division of the University Hospital of Lausanne, Switzerland

2001-2002	<u>Staff Physician</u> , Pulmonary and Critical Care Divisions, Regions Hospital, St Paul, MN
2002 to 2008	<u>Medical director, MICU</u> , Regions Hospital St Paul, MN
01-2008 to 09-2008	<u>Section Heads</u> , Critical Care, Regions Hospital, St Paul, MN
09-2008 to present	<u>Faculty</u> , Pulmonary, Allergy, Critical Care and Sleep Medicine Division, University of Minnesota Medical School and <u>Medical Director of Critical Care</u> , Fairview Southdale Hospital, Edina, MN

### **Scientific activities**

<u>Reviewer:</u>	Intensive Care Medicine European Respiratory Journal Réanimation et Urgence Anesthesiology American Journal of Respiratory and Critical Care Medicine
article	Anesthesia and Analgesia Journal of Applied Physiology Chest Critical Care Medicine Critical Care Lancet

### **Other International Scientific activities:**

- a. Chairman for the oral presentation session on mechanical Ventilation. European Society of Anesthesiology Annual meeting, Gottenburg 2001, Sweden.
- b. Abstracts reviewing for the European Society of Anesthesiologists in 2001.
- c. Editorial board of the American Journal of Respiratory and Critical Care Medicine: 2003 to 2006.
- d. Facilitator for poster session at the 2005 American Thoracic Society International Annual Meeting.
- e. Member of program committee for the Critical Care Assembly of the American Thoracic Society since 2005
- f. Chairman Poster discussion Session A95-Ventilator-induced Lung Injury. American Thoracic Society International conference 2006 San Diego.
- g. Chairman Post graduate course PG05: Ventilatory management of patients with ARDS: a critical review of ongoing controversies. American Thoracic Society International conference 2006 San Diego.

- h. Chairman Post Graduate Course entitled: Point of Care Ultrasonography for Intensivists American Thoracic Society International conference 2007 in San Francisco.
- i. Chairman Critical Care Track Sessions entitled: “Ventilator-Induced Lung Injury in ARDS: How (and if) We Should Avoid Atelectrauma. American Thoracic Society International conference 2007 in San Francisco
- f. Grant reviewer for the Health Related Board of the Republic of Ireland 2007
- g. ATS representative to serve on the jury panel for the 2007 International Consensus Conference on the “Management and Prevention of Acute Renal Failure in an ICU Patient”. Montreal, Canada.

**Recent Grant Support:**

- Healthpartner foundation (2003: 20,000\$, 2005: 20,000\$), Principal investigator
- Respiroics (2005, 30,000\$), Principal investigator

## **Degree, certification and licensure**

1985:	- Swiss Federal Certificate of Physician (MD degree)
1985:	- ECFMG certificate (FMGEMS Step 1 and 2)
1990:	-Doctor from the University of Geneva, School of Medicine, Switzerland (thesis Number 9197).
1992:	-Swiss FMH ( <b>F</b> oederatio <b>M</b> edicorum <b>H</b> elveticorum) title of specialist in Internal Medicine with subspecialty in Critical Care Medicine.
1995-96	USMLE step 1, 2, 3
1997:	-Graduation from the University Minnesota, Pulmonary and Critical Care Fellowship -Minnesota Medical License.
1998:	-Graduation from the Mayo Clinic, Internal Medicine Critical Care Medicine Fellowship.
2001	- DEA registration
2004	- ABIM Board Certification in Internal Medicine - Basic Life support/ Advance Cardiac Support Certification
2005	- ABIM Board Certification in the Pulmonary Medicine
2005	- ABIM Board Certification in Critical Care Medicine
2006	- Basic Life support/ Advance Cardiac Support Certification
2007	- ABIM Board Certification in Sleep Medicine
2008	- Basic Life support/ Advance Cardiac Support Certification

## **Honors and Awards:**

1. Award of the University of Geneva - School of Medicine (White Award) for the thesis entitled " Atrial Fibrillation : which patients should be anticoagulated ? A Makov analysis approach. This work was done under the guidance of Alain Junod MD, professor of Medicine, Clinique Medicale, University Hospital of Geneva .
2. Award by the Swiss Critical Care Society at its yearly meeting in Lausanne, for the presentation of the following abstract: « Inhibition de la NO synthase in septic shock ». Broccard AF, Hurni J-M, Feihl F, Tagan D, Eckert PH Schaller MD, Perret CH. 1994.
3. Cecil J. Watson Award from the Minnesota Medical Foundation at the University of Minnesota for my research during my fellowship in this institution. 1997.

4. Award by the Swiss Critical Care Society at its yearly meeting in Lausanne, for the best scientific communication of the abstract: Protective effects of respiratory acidosis on ventilator-induced lung injury Alain F. Broccard, Christine Vannay, Michele Markert, Alain Sauty, François Feihl, Marie-Denise Schaller. 2000.
5. Chest foundation Cecil Lehman Mayer research finalist Award for the abstract presented at the 2000 meeting of the American College of Chest Physician in San Francisco: Does lowering the left atrial pressure to keep the lung dry limit ventilator-induced lung injury? Alain F. Broccard, Christine Vannay, Marie-Denise Schaller. 2000.
6. Award of the best Swiss publication in field of Critical Care Medicine in 2002 by the Swiss Critical Care Society for the following publication: Protective Effects of Hypercapnic Acidosis on Ventilator-Induced Lung Injury. AF Broccard, JR.Hotchkiss, C Vannay, M Markert, A Sauty, F Feihl, MD Schaller. Am J Resp Crit Care Med 2001 2001;164:802-806.
7. Invited as a visiting professor by the Anesthesiology and Critical Care Division to give Grand Rounds, Beth Israel Hospital, a Harvard Medical School teaching Hospital, Boston, May 2001.
8. Invited as a visiting professor by the Critical Care Service, Dr Rolf Hubmayr Mayo Clinic. Rochester, December 2001.
9. Award of the best Swiss publication in field of Critical Care Medicine in 2004 by the Swiss Critical Care Society for the following publication: Endothelium-dependent vasodilation in the skin microcirculation of severely septic patients. Kubli S, Ave AD, Liaudet L, Revelly J-P, Broccard A, Waeber B, Schaller M-D, Feihl F. Shock. 2003 Mar;19:274-80.
10. Teacher of the Year Award 2003/2004: Pulmonary and Critical Medicine, University of Minnesota.
11. Award of the best Swiss publication in field of Critical Care Medicine in 2005 by the Swiss Critical Care Society for the following publication: Effects of Nitric oxide on Ventilator-Induced Lung Injury. Alain F. Broccard M.D. Christine Vannay R.N. Michele Markert PhD. François Feihl M.D. Marie-Denise Schaller M .D. Crit Care Med 2004 32:1872–1878.
12. Teacher of the Year Award 2004 and 2005: Pulmonary and Critical Medicine, University of Minnesota.

## **Membership and offices in Professional Society:**

- Swiss Society of Intensive Medicine
- American Society of Critical Care Medicine:
- American College of Physician
- American Thoracic Society
- Fellow of the American College of Chest Physician
- Minnesota Thoracic Society: *Chapter representative since 2005*

## **Teaching and Mentoring Activities:**

### **Teaching**

From 1992-1994 and 1998-2001 in Lausanne, Switzerland

- I was a regular lecturer for medical student, resident, fellow at the University Hospital of Lausanne.
- I was doing teaching rounds for resident and fellows at least twice a week at the University Hospital of Lausanne. .
- I was appointed as a lecturer at the affiliated nursing School of the University of Lausanne Hospital for pregraduate and postgraduate nurses (critical care certificate).
- I was appointed as a lecturer (core curriculum) for all the critical care fellows enrolled in fellowships in the French speaking part of Switzerland.
- I was mentoring critical care fellows.

From 2001 to 2008 at Regions Hospital, St Paul

- Lectures for medical student, resident, fellow of the University of Minnesota during their rotation at Regions Hospital. Topic regularly taught included the following:
  1. Shock
  2. Interpretation of pulmonary function test
  3. Asthma
  4. Daily interruption of sedation in the ICU
  5. Management of septic shock
  6. Principle of Mechanical Ventilation
  7. Neurocritical Care
- I did teaching rounds for medical student, resident, fellow of the University of Minnesota during their rotation at Regions Hospital.

**National:** Invited by Dr Marini and the Society of Critical Care Medicine resident education committee in 2005 to develop a curriculum on mechanical ventilation aiming at resident who rotate in ICU during their training.

## Mentoring:

In Switzerland from 2001-2003

- Dr Luc Burdet, MICU director, Hôpital de Payern, Switzerland
- Dr Mauro Oddo, Faculty (medecin associé) in the Critical Care Division of the Internal Medicine Department of the University of Lausanne

Mentoring of fellows of Pulmonary and Critical Care Division of the University of Minnesota Medical School

2002-2004. I have mentored Dr Korback MD for 18 months. Dr Korback under my supervision was able to complete 2 experimental studies and to present our findings at the annual ATS meeting (see abstract below). 2 manuscripts are in preparations and will be submitted soon for publication. Dr Korback is now a junior faculty who has joined our group. He is an enthusiastic teacher extremely involved in resident and fellow education at Regions.

- *In Vivo* Effects of Hypercapnia, Acidosis and Frequency on Ventilator Induced Lung Injury. EJ Korbach, AB Adams DA Simonson, C Rodrigues. JR Hotchkiss and AF Broccard. Am J of Resp and Crit Care Med 2003;167:A775.

- Ventilator induced apoptosis is blocked by tUDCA in an *in vivo* Model of VILI. Korbach EJ, Adams AB, Simonson DA, C Rodrigues, Steer CJ, Hotchkiss JR, Broccard AB. Am J of Resp and Crit Care Med 2004;169:A787.

2004-2005. I mentored for 9 months Dr Yves DeChazal and Dr Zamanian. Under my supervision Dr DeChazal has successfully conducted a clinical study that lead to an abstract presented at the annual American Thoracic meeting this year. Dr DeChazal has joined in July 2005 the staff and faculty of teaching Hospital in Tucson, Arizona. Dr Zamanian is in private practice in Oregon.

- Glucomander: Better Glycemic Control Than Standard IV Insulin Infusion Protocol. I.R. de Chazal, MD, J.H. MacIndoe, MD, A. Adams, RRT, MPH, P. Peine, CCRN, M. Zamanian, MD, A. Nahum, MD, A. Broccard, MD, Mpls/St.Paul, St. Paul, MN. Am J of Resp and Crit Care Med 2005;2:A38.

Under my supervision, Dr Zamanian has successfully conducted a clinical study that lead to an abstract presented at the annual American Thoracic meeting in 2005.

- Impact of Implementation of a 5-Component Care Bundle on Ventilator-Days and VAP Rate in a MICU. M. Zamanian, MD, P. Peine, RN, A.B. Adams, MPH, I. de Chazal, MD, A. Nahum, MD, A.F. Broccard, MD, St. Paul, MN. Am J of Resp and Crit Care Med 2005;2: A595.

In addition, both fellows successfully wrote under my supervision one clinical project. Each project has been approved by your IRB, funded by Industry and is currently being conducted in our MICU. Dr Yves de Chazal's project aim was to assess respiratory muscle oxygen supply and demand relationship during weaning from mechanical ventilation and Dr Maryam Zamanian's project consists in assessing the potential predictive value of cardiac output (non-invasive) and BNP measurements during weaning from mechanical ventilation of patients with CHF. She presented her results at the annual American Thoracic meeting in 2006.

- Assessment of cardiac function and ventilatory efficiency by noninvasive CO<sub>2</sub> monitoring during reduced of ventilatory support in patients with CHF. Zamanian M, Adams A, **Broccard A**. Am J of Resp and Crit Care Med 2006;3:A297.

2005-2006. I have been selected by 2 of our fellows, Dr Amy Knopke and Dr David Risher to mentor them in their research relative to shock and the other one animal experimental model of ventilator-induced lung injury (injury). Dr Risher presented his results at the American Thoracic meeting in 2006.

- The effects of tight glucose control on an in vivo rabbit model of ventilator-induced lung-injury. Risher DW, Adams A, Petersen MS, MacIndoe JH, **Broccard A**. Am J of Resp and Crit Care Med 2006;3:A246.

2006-2008. I have been selected by 1 of our pulmonary and critical care fellow, Dr Kealy Ham, to mentor a project related to developing predictive model of outcome and duration of mechanical ventilation in ARDS and by one internal medicine resident to mentor their research project. Dr Nagamatsu presented his results at results at the annual American Thoracic meeting in 2007 and Dr Kealy will present hers at the 2008 meeting.

- Strict Glycemic Control and Insulin Requirements During and After Induced Hypothermia Following Cardiac Arrest. S. Nagamatsu, MD<sup>1</sup>, A.J. Knopke-Mooney, MD<sup>1</sup>, K.R. Ham, MD<sup>1</sup>, J.H. MacIndoe, MD<sup>2</sup>, D.G. Aho, RN,BSN,CCRN<sup>2</sup> and **A.F. Broccard**

## Research

My research interests in critical care has been mainly focus on mechanical ventilation, the hemodynamics and bronchoscopy. My research interests include:

1. Ventilator induced lung injury (VILI). I am particularly interested in how the hemodynamic, CO<sub>2</sub>, respiratory acidosis, NO, apoptosis, glucose control and other non ventilatory factors such as prone positioning may modulate VILI. These investigations have been conducted in collaboration with Dr Hotchkiss and Marini at the University of Minnesota and with fellows from our program that I have mentored. My work on apoptosis was done in collaboration with Professor Steer from the University of Minnesota, Cecilia Rodrigues, PhD from the University of Lisbon, Portugal (Abstract # 34 and 35).
2. Use of neural to help decision making in the ICU. In collaboration with Dr John Hotchkiss at the University of Pittsburg, we used a neural network approach to predict lung injury in response to positive pressure ventilation. We have also explored in collaboration with Dr Weinert and Hotchkiss a predictive model (neural network) to predict for the duration of mechanical ventilation in patients with ARDS.
3. Use of new monitoring devises to help solve difficult clinical problems frequently encountered in the ICU. Under my supervision, 2 fellows of the University of Minnesota Pulmonary and Critical Care program have assessed: a. The impact of left heart systolic and/or diastolic dysfunction by measuring the serum level of the brain natriuretic peptide and cardiac output during wearing from mechanical ventilation b. The relationship between respiratory muscle oxygen consumption and respiratory work load as possible predictor for weaning from mechanical ventilation.
4. Point of care ultrasonography. I am currently studying the possible role of point of care ultrasonography and echocardiography to assess the hemodynamically instable critically ill patients. Therapeutic hypothermia and tight glucose control in the ICU. This work was conducted with fellow from our program.
5. I am also interested in interventional bronchoscopy. I served as a local co-investigator (bronchoscopist) in the multicentric Air2 trial (endobronchic thermo-ablation for asthma) and I have also participate as bronchoscopist in an current trial in which we implant endobronchial valves to reduce lung volume in COPD patients (Spiration trial).

## **Extramural invited presentations**

### **International and national (USA):**

1. *Effect of position on lung injury induced by mechanical ventilation in dogs: Prone versus supine.* Oral presentation at the yearly meeting of the American Thoracic Society, Seattle, USA. May 1995.
2. *Prone position in ARDS. Review course on ARDS sponsored by the University of Lyon and the French Society of Intensive Care Medicine.* Lyon, France. October 1997.
3. *Role of hemodynamic in pulmonary edema.* 4th International Therapeutic Fluids Group Meeting, Paris, France, June 2000.
4. *Does lowering the left atrial pressure to keep the lung “dry” limit ventilator-induced lung injury?* Broccard AF, Vannay C, Schaller M-D. Oral presentation at the European Intensive Care Medicine meeting. Rome, Italy, September 2000.
5. *Does lowering the left atrial pressure to keep the lung “dry” limit ventilator-induced lung injury?* Broccard AF, Vannay C, Schaller M-D. Oral presentation at the ACCP 2000 meeting in San Francisco. USA. October 2000.
6. *Respiratory mechanics and oxygenation with different position.* 20th annual meeting of the Belgian Society of Intensive care, Gent, Belgium November 2000.
7. *Importance of pulmonary hemodynamics in ARDS.* Claude Bernard University. Lyon, France, December 2000.
8. *Prone position: Physiological effects.* International Symposium on Intensive Care and Emergency Medicine Brussels Congress. Brussels, Belgium. March 2001.
9. *Ventilator-associated lung injury: role of hemodynamics.* International Symposium on Intensive Care and Emergency Medicine Brussels Congress. Brussels, Belgium. March 2001.
10. *Respiratory acidosis is protective.* International Symposium on Intensive Care and Emergency Medicine Brussels Congress. Brussels, Belgium. March 2001.
11. *Non invasive mechanical ventilation: cardiogenic pulmonary edema.* International Symposium on Intensive Care and Emergency Medicine Brussels Congress. Brussels, Belgium. March 2001.
12. *Role of ventilation, perfusion and position in ventilator induced lung injury. Postgraduate course.* European Society of Anesthesiologist annual meeting. Gottenberg, Sweden. April 2001.

13. *Is Respiratory Acidosis Protective?* Anesthesiology and Critical Care Division Grand Rounds, Beth Israel Hospital, Boston, May 2001.
14. *Permissive Hypercapnia*. Critical Care Service Weekly Conference. Mayo Clinic. Rochester, USA. December 2001. *Respiratory Acidosis*. 14<sup>th</sup> International Intensive Care Symposium, Istanbul Turkey, May 2003.
16. *Ventilator-induced Lung Injury*. 14<sup>th</sup> International Intensive Care Symposium, Istanbul, Turkey, May 2003.
17. *Hypercapnia: the positive and negative side*. 16th Annual Congress of the European Society of Intensive Care Medicine, Amsterdam, Netherland, October 2003.
18. *Impact of Blood Flow on Ventilator-induced Lung Injury*. Scientific Sessions of the 2004 annual meeting of the American Heart Association Program, New Orleans, USA, November 2004. *Respiratory acidosis: the good and bad news*.
19. *Permissive Hypercapnia: how much is too much*. 4th International course on Mechanical Ventilation. Monterrey, Mexico in November 2005.
20. *Prone position in ARDS*. 4th International course on Mechanical Ventilation. Monterrey, Mexico in November 2005.
21. *High PEEP and recruitment manoeuvre use in ARDS*. 4th International course on Mechanical Ventilation. Monterrey, Mexico in November 2005.
22. *Role of hemodynamic in VILI*. ATS 2006 international Conference, San Diego, May 2006.
23. *Asthma and Anesthesia*. Bogota, Columbia, November 2006.
24. *Pulmonary Embolism during Anesthesia*. Bogota, Columbia. November 2006.
25. *Respiratory Acidosis: Key concepts for the intensivists*. Pulmonary and Critical Care Grand Round. Cleveland Clinic. Cleveland, February 2007.
26. *Carbon dioxide in the critical ill: a double edge molecule?* Critical Care Grand Round of Saint Marguerite Hospital, University of Marseille, Marseille, France, March 2008.

1. *Chronic Atrial Fibrillation and anticoagulation: role of analysis decision making.* Internal Medicine Grand Rounds. University Hospital of Geneva. June 1991.
2. Medical Emergency: "*role of thrombolytics in myocardial infarction*". Seminar of the 89e review course of the Swiss Society of Internal Medicine. Lausanne, March 1992.
3. *Chronic Atrial Fibrillation: who should be anticoagulated.* Internal Medicine Grand Rounds. University Hospital of Lausanne. April 1993.
4. *Management of nonheartbeating donors.* Swiss Group for transplantation. Lausanne, May 1993.
5. *Acute Exacerbation of COPD patient: a non conservative approach.* Annual Meeting of the Swiss Society of Intensive Care Medicine. Lugano, October 1993.
6. *Short hospital stay after a Myocardial infarction.* Cardiology review course organized by the Cardiology and Intensive Care Division of the University Hospital of Lausanne. Yverdon. October 1993.
7. *Management of Myocardial Infarction before hospital admission.* Society of internal Medicine of the Canton of Vaud. Lausanne. October 1993.
8. *Medical Emergency at the dental office.* Postgraduate review course for dentists. Lausanne, November 1993.
9. *Importance of pulmonary hemodynamics in ventilator-induced lung injury.* Post-graduate critical care medicine course organized by the University Hospital of Geneva, Switzerland. Geneva, March 1999.
10. *Management of ARDS.* Critical Care Conference of the Riviera Hospital of Vevey, Switzerland. Vevey. Mars 1999.
11. *Décubitus ventral.* Workshop. Yearly Meeting of the Swiss Critical Care Society. Lausanne, June 2000.
12. *Biological consequences of hypercapnia.* Post-graduate critical care medicine course organized by the University Hospital of Geneva, Switzerland. Geneva, March 2001.
13. *Modulation of ventilator-induced lung injury.* Réunion Romande de Réanimation. Lausanne, June 2001.

## **Local invited presentations**

### **In Minnesota**

1. *Ventilatory Parameters- Case demonstration.* « Mechanical Ventilation: Principles and Practice » review course organized by John J. Marini, M.D. and sponsored by the University of Minnesota. St Paul. USA. October 1994.
2. *Intubation and airway management- Case discussion.* « Mechanical Ventilation: Principles and Practice » review course organized by John J. Marini, M.D. and sponsored by the University of Minnesota. St Paul. USA. October 1995.
3. *Effect of blood flow on lung injury induced by mechanical ventilation in an isolated perfused rabbit lung model.* Weekly Conference of the pulmonary and critical care division of the University of Minnesota. April 1996.
4. *Position and acute respiratory failure.* Combined Multidisciplinary Critical Conference. Mayo Clinic, Rochester, USA. December 1997.
5. *Physiology of acute respiratory failure.* « Mechanical Ventilation: Principles and Application » review course organized by John J. Marini, M.D. and sponsored by the University of Minnesota. Minneapolis. USA. November 2001.
6. *Manipulating mean airway pressure.* « Mechanical Ventilation: Principles and Application » review course organized by John J. Marini, M.D. and sponsored by the University of Minnesota. Minneapolis. USA. November 2001.
7. *Basics of Mechanical Ventilation.* « Mechanical Ventilation: Principles and Application » review course organized by John J. Marini, M.D. and sponsored by the University of Minnesota. Minneapolis. USA. November 2001
8. *Ventilator-induced lung injury.* Advanced Pulmonary Mechanics: Physiology and Pathophysiology. Sponsored by Department of Physiology, University of Minnesota Medical School. Minneapolis, USA. August 2002.
9. *Evaluation of Asthma.* A course sponsored by HealthPartners Institute for Medical Education. Minneapolis, USA, September 2001.
10. *Mechanical ventilation I and II: Fundamentals of Critical Care Support.* A course sponsored by the Society of Critical Care Medicine. St Paul, USA, October 2002.
11. *Ventilator-induced Lung injury.* « Mechanical Ventilation: Principles and Application » review course organized by John J. Marini, M.D. and sponsored by the University of Minnesota. Minneapolis. USA. November 2002.

12. *Basics of Mechanical Ventilation*. « Mechanical Ventilation: Principles and Application » review course organized by John J. Marini, M.D. and sponsored by the University of Minnesota. Minneapolis. USA. November 2002.
13. *Pulmonary Embolism*. « Mechanical Ventilation: Principles and Application » review course organized by John J. Marini, M.D. and sponsored by the University of Minnesota. Minneapolis. USA. November 2002.
14. *Respiratory acidosis: an acceptable side effect or a therapeutic tool?* Research conference of the Pulmonary and Critical Care Division, University of Minnesota. December 2002.
15. *Diagnosis and Management of Acute Respiratory Failure: Fundamentals of Critical Care Support*. A course sponsored by HealthPartners Institution for Medical Education. St Paul, USA, April 2003.
16. *Ventilator-induced Lung Injury: role of position, hemodynamics and CO<sub>2</sub>*. Research conference of the department of Internal Medicine, University of Minnesota, January 2003
17. *Diagnosis and Management of Acute Respiratory Failure: Fundamentals of Critical Care Support*. A course sponsored by HealthPartners Institution for Medical Education. St Paul, USA, 2003.
18. *Mechanical ventilation I and II: Fundamentals of Critical Care Support*. A course sponsored by Healthpartners Institution for Medical Education. St Paul, USA, 2003.
19. *Diagnosis and Management of Acute Respiratory Failure: Fundamentals of Critical Care Support*. A course sponsored by HealthPartners Institution for Medical Education. St Paul, USA, 2004.
20. *Mechanical ventilation I and II: Fundamentals of Critical Care Support*. A course sponsored by Healthpartners Institution for Medical Education. St Paul, USA, 2004.
21. *Respiratory Acidosis*. Department of Medicine Ground rounds. Regions Hospital. St Paul, USA, March 2004.
22. *Mechanical ventilation and other management strategies for ARDS*. Update in Critical Care 2004, sponsored by the University of Minnesota Center for Excellence in Critical Care, Minneapolis, USA, September 2004
23. *Intensive Care Management of Acute Respiratory Failure: An Update*. Minnesota Thoracic Conference Pulmonary & Critical Care Update. Minneapolis, USA, November 2004.
24. *Respiratory acidosis: the good and bad news*. Pulmonary and Critical Care Division Fellow conference. Hennepin county Medical Center. Minneapolis, USA, April 2005.

25. *Diagnosis and Management of Acute Respiratory Failure: Fundamentals of Critical Care Support*. A course sponsored by HealthPartners Institution for Medical Education. St Paul, USA, 2005.
26. *Mechanical ventilation I and II: Fundamentals of Critical Care Support*. A course sponsored by Healthpartners Institution for Medical Education. St Paul, USA, 2005.
27. *New Modes of Ventilatory Support*. Combined Medicine/Surgery Critical Care Conference, University of Minnesota. Minneapolis, USA, September 2006.
28. *Pulmonary hypertension*. 28th Annual Cardiovascular Conference. St Paul, MN, 2006
29. *Diagnosis and Management of Acute Respiratory Failure: Fundamentals of Critical Care Support*. A course sponsored by HealthPartners Institution for Medical Education. St Paul, USA, 2007.
30. *Mechanical ventilation I and II: Fundamentals of Critical Care Support*. A course sponsored by Healthpartners Institution for Medical Education. St Paul, USA, 2007.
31. *Septic shock*. Hudson Hospital, Wisconsin, 2007

#### In Lausanne (Switzerland)

1. *Treatment of acute COPD exacerbation by non-invasive mechanical ventilation*. Oral presentation at the yearly meeting of the Swiss Society of Critical Care Medicine. Davos, October 1991.
2. *Acute Exacerbation of COPD patient: a non conservative approach*. Annual Meeting of the Swiss Society of Intensive Care Medicine. Lugano, October 1993.
3. *Medical Emergency at the dental office. Postgraduate review course for dentists*. Lausanne, November 1993.
4. *Noninvasive Mechanical Ventilation*. Postgraduate training course for intensivist sponsored by the Swiss Society of Intensive Medicine. Lausanne, September 1998.
5. *Noninvasive Mechanical Ventilation*. Internal Medicine Rounds. University Hospital of Lausanne (CHUV). November 1998.
6. *Ventilator-induced Lung Injury*. Multidisciplinary Critical Care Conference. University Hospital of Lausanne (CHUV). November 1998.
7. *Physiology of the pulmonary circulation*. Postgraduate training course for intensivist sponsored by the Swiss Society of Intensive Medicine. Lausanne, April 1999.
8. *Position and acute respiratory failure*. MSD conference for intensivists. Lausanne, May 1999.

9. *Noninvasive Mechanical Ventilation*. Postgraduate training course for intensivists sponsored by the Swiss Society of Intensive Medicine. Lausanne, February 2000.
10. *Physiology of the pulmonary circulation*. Postgraduate training course for intensivists sponsored by the Swiss Society of Intensive Medicine. Lausanne, April 2001.

## **Committee and administrative service**

### National:

- Member of program committee for the Critical Care assembly of the American Thoracic Society (2005 to 2007)
- ATS Chapter representative for the Minnesota Thoracic Society (2004 to present)
- Member of planning committee of the American Thoracic Society (2008 to present)

### Local:

- Minnesota Department of Health: member of the asthma case review panel
- Regions Hospital: I have or am currently serving on the following committees
  - o Combined Critical Care Committee (chairman since 2006)
  - o Medical executive committee (member at large since 2008)
  - o MICU quality control Committee (2005 to 2008, chairman)
  - o Infection Control Committee (2007 to present)
  - o Epic Physician Work Group (2004 to 2005)
  - o Peer review Committee (2005 to 2008)
  - o Rapid response team (2005 to 2006)
  - o Epic User Group, (2006 to 2008)
  - o Best practice committee (2006 and 2007)
  - o Code 2 QI committee (2005 to 2006)
  - o Expansion 09 Patient Unit Steering Team (2006 to 2008)
  - o Stroke Center committee (2006 to 2008)
  - o Flu pandemic committee (2006 to 2008)
- Fairview Southdale Hospital
  - o Critical care committee (2008 to present, Chairman)
  - o ICU quality and care delivery committee (2008 to present, Chairman)
  - o Tansfusion committee (2008 to present)

## Annotated Bibliography

DSC = Developed Study Concept  
DSD = Developed Study Design  
DIC = Defined Intellectual Content  
CES = Conducted Experimental Studies  
DA = Data Acquisition  
Dan= Data Analysis  
CLR= Conducted Literature Research  
MP= Manuscript preparation  
ME= manuscript editing  
MR= manuscript review

### Peer reviews publications:

1. Influence of position on the extent and distribution of experimental lung injury induced by oleic acid and mechanical ventilation. **Broccard AF**, Shapiro RS, Schmitz LL, Ravesncraft SA, Marini JJ. Crit Care Med 1997;25:16-27.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

2. Consequences of vascular flow on lung injury induced by mechanical ventilation. **Broccard AF**, Hotchkiss JR, Kuwayama N, Olson DA, Jamal S, Wangenstein OD, Marini JJ. Am J Respir Crit Care Med, 1998;157:1935-1942.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

3. Premedication with ipratropium bromide for bronchoscopy produces subjective discomfort without significant clinical benefit Rubins BJ, Bokenkamp C, Youngblood M, Billings J, **Broccard A**. Journal of Bronchology 1998;5:200-203.

Contribution: DA, MR

4. Effects of mean airway pressure and tidal excursion on lung injury induced by mechanical ventilation in an isolated perfused rabbit lung model. **Broccard AF**, Hotchkiss JR, Suzuki So, Olson DA, Marini JJ. Crit Care Med 1999;27:1533-41.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

5. Prone positioning limits and redistributes ventilator-induced lung injury. **Broccard AF**, Shapiro RS, Adams AB, Schmitz LL, Ravesncraft SA, Marini JJ. Crit Care Med 2000;28:295-302.

Contribution: DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

6. Tissue oxygenation and hemodynamic response to NO synthase inhibition in septic shock. **Broccard AF**, Hurni J-M, Eckert P, Liaudet L, Schaller MD, Lazor R, Perret CH, Feihl F. Shock 2000;14:35-40.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

7. Use of botulimum toxin type A to avoid tracheal intubation or tracheostomy in severe paradoxical cord movement. Mailler I, Schweizer V, **Broccard A**, Duscher A, Liaudet L, Schaller MD. Chest Chest. 2000 Sep;118:874-877.

Contribution: DIC, ME, MR

8. Negative pressure post-extubation alveolar hemorrhage. **Alain F. Broccard**, Lucas Liaudet, Aubert John-David, MD, Pierre Schnyder, Marie-Denise Schaller. *Anesth Analg* 2001 Jan;92:273-5.  
Contribution: DSD, DIC, CES, DA, Dan, CLR, MP, ME
9. Les endocardites dues aux germes du groupe HACEK. A propos d'un cas d'endocardite native à *Kingella Kingae*. M. Lepori, PY. Bochud, R. Owlya, **A. Broccard**, MD. Schaller *Rev Médicale Suisse Romande* 2001 ;121:47-50.  
Contribution: ME, MR
10. Bilateral breast necrosis after prone position ventilation. L. Burdet, L. Liaudet, M.D. Schaller, **A.F. Broccard**. *Intensive Care Med* 2001;27: 1435-1435.  
Contribution: DIC, DA, Dan, CLR, ME, MR
11. Acidose lactique chez les sujets infectés par le VIH : un effet secondaire potentiellement létal du traitement antirétroviral. Lepori M, **Broccard AF**, Schaller M-D, Greub G. *Schweiz Wochenschr.* 2001. *Forum Med Suisse* 2001;38: 846-849.  
Contribution: ME, MR
12. Protective Effects of Hypercapnic Acidosis on Ventilator-Induced Lung Injury. **AF Broccard**, JR.Hotchkiss, C Vannay, M Markert, A Sauty, F Feihl, MD Schaller. *Am J Respir Crit Care Med* 2001 2001;164:802-806.  
Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR
13. Vasospasme coronarien et alcalose respiratoire. M. Lepori, Ph. Urban, **AF Broccard**. *Médecine Cardiovasculaire* 2001; 4: 391- 392.  
Contribution: DIC, ME, MR
14. Efficacy and safety of tenecteplase in combination with enoxaparin, abciximab, or unfractionated heparin: the ASSENT-3 randomised trial in acute myocardial infarction. The Assessment of the Safety and Efficacy of a New Thrombolytic Regimen (ASSENT)-3 Investigators. *Lancet* 2001; 358: 605-13.  
Contribution: DA
15. Impact of low pulmonary vascular pressure on ventilator-induced lung injury? **AF Broccard**, C Vannay, F Feihl, MD Schaller. *Crit Care Med* 2002;30:2183-2190  
Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR
16. Intrapericardial urokinase irrigation and systemic corticosteroids: an alternative to pericardectomy for fibrino-purulent pericarditis. Schafer M, Lepori M, Délabays A, Ruchat P, **Broccard AF**. *Journal of Cardiovascular Surgery* 2002;10:508-511.  
Contribution: DIC, DA, CLR, MP, ME, MR
17. Helium-oxygen vs. air-oxygen non-invasive pressure support in decompensated chronic obstructive disease: a prospective multicenter study. Jolliet P, Tassaux D, Roeseler J, Burdet L, **Broccard A**, D'Hoore W, Borst F, Reynaert M, Schaller MD, Chevrolet J-C. *Critical Care Medicine* 2003; 31:878-884.  
Contribution: DA, ME, MR

18. Endothelium-dependent vasodilation in the skin microcirculation of severely septic patients. Kubli S, Ave AD, Liaudet L, Revelly J-P, **Broccard A**, Waeber B, Schaller M-D, Feihl F. Shock. 2003 Mar;19:274-80.  
Contribution: ME, MR
19. A computer program for interpreting pulmonary artery catheterization data: result of the European Hemodyn resident study. Squara P, Fourquet E, Jacquet L, **Broccard A**, Uhlig T, Rhodes A, Bakker A, Nimmo G, Perron C. Intensive Care Medicine.2003; 29:735-41.  
Contribution: DSC, DSD, DIC, DA, MP, ME, MR
20. Prone position in ARDS: is the glass half-full or half empty? **Broccard AF**. Editorial. Chest 2003. 123;1334-1336.
21. Relapsing Acute Respiratory Distress Syndrome Induced by Minocycline. Oddo M, **Broccard AF**, Schaller MD, Lepori M. Chest 2003; 123(6): 2146 – 2148  
Contribution: DIC, MP, ME, MR
22. Artificial neural network prediction of ventilator induced lung edema formation. Hotchkiss J, **Broccard A**, Crooke PS. Critical Care Medicine 2003;31;2250.  
Contribution: CES, DA, ME, MR
23. Positive end-expiratory pressure or prone position: Is that the questions? **Broccard A**. Crit Care Med 2003;31:2802-3.
24. Challenges of mechanical ventilation in unilateral pneumonia: is PEEP the answer? **Broccard AF**. Intensive Care Med. 2004;30:530-532.
25. Effects of L-NAME and inhaled nitric oxide on ventilator-induced lung injury in isolated, perfused rabbit lungs. **Alain F. Broccard** M.D. Christine Vannay R.N. Michele Markert PhD. François Feihl M.D. Marie-Denise Schaller M .D. Crit Care Med 2004 32:1872–1878.  
Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR
26. Transient Hemodynamic Effects of Recruitment Maneuvers in Three Experimental Models of Acute Lung Injury. Lim S-C, Alexander B. Adams, Simonson DA, Dries DJ, **Broccard AF**, Hotchkiss JR, Marini JJ. Crit Care Med 2004;32:2378-84.  
Contribution: DA, CLR, MP, ME, MR
27. Intercomparison of Recruitment Maneuvers in Three Models of Acute Lung Injury. Lim S-C, Adams AB, Simonson DA, Dries DJ, **Broccard AF**, Hotchkiss JR, Marini JJ Crit Care Med 2004;32:2371-7.  
Contribution: ME, MR
28. An Agent Based and Spatially Explicit Model of Pathogen Dissemination in the Intensive Care Unit. Hotchkiss JR, Strike DG, Simonson DA, **Broccard, AF**, Crooke PS. Crit Care Med 2005;33;168-176.  
Contribution: DIC, ME, MR
29. Prone position ventilation and high frequency oscillatory ventilation and Hippocrates in ARDS. **Broccard AF**. Crit Care Med 2005;33:2407-8.

30. Respiratory acidosis and ARDS: time to trade in a bull market? **Broccard AF**. Crit Care Med 2006;34:229-31.
31. Therapeutic hypothermia for anoxic brain injury following cardiac arrest: time for a “cool” transition towards cardiopulmonary cerebral resuscitation. **Broccard AF**. 2006 7:2008-9.
32. Interactions between respiration and systemic hemodynamics.. Part I: basic concepts. Feihl F, **Broccard AF** Intensive Care Med. 2008 Sep 30. [Epub ahead of print]
33. Interactions between respiration and systemic hemodynamics. Part II: practical implications in critical care. Feihl F, **Broccard AF**. Intensive Care Med. 2008 Sep 30. [Epub ahead of print]
34. International Consensus Conferences in Intensive Care Medicine: Management and Prevention of Acute renal failure in an ICU patient. Organised jointly by the American Thoracic Society, the European Respiratory Society, the European Society of Intensive Care Medicine, the Society of Critical Care Medicine and the Société de Réanimation de Langue Française. Brochard L, Abroug F, Brenner M, **Broccard A**, Danner A, Ferrer M, Laghi F, Magder S, Papazian L, Pelosi P, Polderman K. Currently submitted and under review 2008.

Publications by invitation:

1. Principes et place actuelle de la ventilation mécanique non invasive dans le traitement de l'insuffisance respiratoire aiguë. **Broccard AF**, Fitting J-W. Méd. et Hyg.1992;50:298-302.  
Contribution: DIC, CLR, MP, ME
2. Exacerbation aiguë des bronchopneumopathies chroniques obstructive: indications à la ventilation mécanique. **Broccard AF**, Schaller MD. Méd. et Hyg. 1994;52:245-248.  
Contribution: DIC, CLR, MP, ME
3. Severe bronchial asthma. 7th European Congress on Intensive Care Medicine Proceedings. Schaller MD, **Broccard A**, Wasserfallen, Perret C. Monduzzi. Editore, Bologne 1994.  
Contribution: DIC, CLR, MP, ME, MR
4. Position and posture in respiratory failure. Shapiro RS, **Broccard AF**. Clin Pulm Med 1997;4:45-52.  
Contribution: DIC, CLR, MP, ME, MR
5. Position and posture in acute illness. **Broccard A**, Marini JJ. Seminars in Respiratory and Critical Care Medicine 1997;18:19-32  
Contribution: DIC, CLR, MP, ME, MR
6. Stratégies ventilatoires actuelles du syndrome de détresse respiratoire aigu. Eckert Ph. Burdet L., Liaudet L. **Broccard A**. Med Hyg. 1998;56:920-1924.  
Contribution: DIC, CLR, MP, ME, MR

7. Lésions induites par la ventilation mécanique: quelle leçon pour le clinicien. **Broccard AF**. Schaller MD. Med Hyg 2000;58:2044-2048.  
Contribution: DIC, CLR, MP, ME, MR
8. Thrombolyse ou angioplastie primaire lors d'infarctus myocardique aigu : Mise au point. M. Lepori, E. Eckhout, L. Burdet, **AF. Broccard**, MD Schaller. Med Hyg 2000;58:2056-2058.  
Contribution: DIC, ME, MR
9. Embolie pulmonaire : indication à la thrombolyse. L. Burdet, M. Lepori, **AF. Broccard**, MD Schaller. Med Hyg 2000;58:2061-2065.  
Contribution: DIC, ME, MR
10. Respiratory mechanics and oxygenation with different position. **Broccard A**. In Belgian Society of Intensive Care Medicine, Editor. Mechanical Ventilation in the ICU: State of the Art Program and Abstracts Book; 2000, p.18-23.
11. Treatment of severe asthma. Schaller M-D, **Broccard AF**. Symposium "Asthme de l'Enfant et de l'Adulte" par la Fondation pour l'Education et la Recherche en Allergologie et Immunologie F E R A I., Morges, 9.11.2000. Ed Michaël C. Reinhardt, Vol 3, pp 9-29.  
Contribution: DIC, ME, MR
12. Ventilator associated lung injury: effects of ventilation, position and hemodynamics. **Broccard A**. In Gordon B Drummond. ESA refresher course book; 2001,p.119-122.
13. Rôle de l'hémodynamique dans l'œdème aigu du poumon. **Broccard A**. Urgence Pratique 2001;46:27-31.
14. Microvascular and airspace linkage in ventilator-induced lung injury. Marini JJ, Hotchkiss JR, **Broccard AF**. Critical Care 2003;7(6):435-44.  
Contribution: DIC, ME, MR
15. Modulating cofactors of acute lung injury 2005-2006: any closer to "prime time?" Hotchkiss JR, **Broccard AF**. Curr Opin Crit Care. 2007;13:39-44.
16. Point-of-Care Ultrasonography in the Intensive Care Unit. **Broccard AF**. American Thoracic Society. Best of the Website. 2007. <http://www.thoracic.org/sections/clinical-information/best-of-the-web/pages/critical-care/point-of-care-ultrasonography-in-the-intensive-care-unit.html>

### Book chapters:

1. Prise en charge initiale des hypothermies accidentelles. Schaller MD, **Broccard AF**, Perret CH. Actualités en réanimation et en urgence. Arnette, Paris, 1993, 275-295.
2. Effect of position and posture on the respiratory system. **Broccard AF**, Marini JJ. In Vincent J-L (Ed). YearBook of Critical Care and Emergency Medicine. Springer-Verlag, Berlin. 1995; 165-184.
3. Vascular Contribution to Ventilator-Induced Lung Injury. John J. Marini, John R. Hotchkiss, **Alain F. Broccard**. In Slutsky Arthur and Brochard L (Eds.). Mechanical Ventilation. Springer-Verlag, Berlin 2005;227-242.
4. Interactions between the pulmonary circulation and ventilation: an overview for intensivists. **Broccard AF**, François Feihl. In Lucangelo U, Pelosi P, Zin W, Aliverti A (Eds). In Respiratory System and Artificial Ventilation. Springer-Verlag Italia 2008;47-72.
5. Does Patient Positioning make a difference in ARDS? Broccard AF and Hotchkiss J. in Press.

### Articles currently submitted or in preparation for publications.

1. Ventilator induced apoptosis is blocked by tUDCA in an *in vivo* Model of VILI. Korbach EJ, Adams AB, Simonson DA, C Rodrigues, Steer CJ, Hotchkiss JR, **Broccard AB**. Manuscript submitted for publication.
3. *In Vivo* Effects of Hypercapnia, Acidosis and Frequency on Ventilator Induced Lung Injury. **AF Broccard**, EJ Korbach, AB Adams DA Simonson, C Rodrigues. JR Hotchkiss. Manuscript in preparation.
4. Glucommander: Better Glycemic Control Than Standard IV Insulin Infusion Protocol. I.R. de Chazal, MD, J.H. MacIndoe, MD, A. Adams, RRT, MPH, P. Peine, CCRN, M. Zamanian, MD, A. Nahum, MD, A. **Broccard, MD**. Manuscript in preparation.

### Abstracts:

1. Traitement de la décompensation aiguë de l'insuffisance respiratoire chronique par ventilation mécanique non invasive. **Broccard AF**, Fitting J.-W. Schweiz Med Wochenschr 1992;122:785.  
Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME
2. Complications précoces des rhabdomyolyses toxiques. **Broccard AF**, Schaller MD, David S, Perret C. Schweiz. Med. Wochenschr. 1993;123(11):511.  
Contribution: DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

3. Hémorragie alvéolaire après thrombolyse. 2 cas d'une complication rare. Pralong G, **Broccard AF**, Schaller MD, Fitting J-W, Perret C. Schweiz Med 1993;123(S53):26.  
Contribution: MR
  
4. Hemodynamic and tissue oxygenation response to NO synthase inhibition in septic shock **Broccard AF**, Hurni J-M, Feihl F, Schaller MD, Perret C. Am J Respir Crit Care Med 1994;149: A645.  
Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR
  
5. Inhibition de la NO synthase dans le choc septique . **Broccard AF**, Hurni J-M, Feihl F, Tagan D, Eckert PH Schaller MD, Perret CH. Med. Wschr. 1994;124;S63:25 et Réanimation Urgences.  
Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR
  
6. Syndrome de détresse respiratoire avec évolution vers une dysplasie bronchopulmonaire. Tagan D, Schaller MD, **Broccard A**, Eckert P, Perret CH. Schweiz. Med. Wschr. 1994;124;S63:6. Contribution: ME, MR
  
7. Maladie veino-occlusive et anticorps anti-phospholipides. Tagan D, Schaller MD, **Broccard A**, Eckert P, Perret CH. Schweiz. Med. Wschr. 1994;124;S63:7.  
Contribution: ME, MR
  
8. Oxygénothérapie hyperbare et mucormycose rhinocérébrale. Eckert P, **Broccard A**, Tagan D, Schaller MD, Perret CH. Schweiz. Med. Wschr. 1994;124;S63:7.  
**Contribution: DSC, DIC, ME, MR**
  
9. Effect of position on lung injury induced by mechanical ventilation in dogs: Prone versus supine. **Broccard AF**, Shapiro RS, Adams AB, Ravenscraft SA, Marini JJ. Am J Resp Crit Care Med 1995;151;A551.  
Contribution: DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR
  
10. Effect of position during mechanical ventilation on extent and distribution of lung injury in an oleic acid model. Shapiro RS, **Broccard AF**, Schmitz L, Ravenscraft SA, Marini JJ. Intensive Care Med 1995;21:S123.  
Contribution : DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR
  
11. Sevrage de l'oxyde nitrique et administration de L-Arginine. Eckert P. **Broccard A**, Tagan D, Boulat O, Schaller MD, Perret C. Schweiz. Med. Wschr 1995;125:S64:  
Contribution: DA, MR
  
12. Effects of blood flow on lung injury induced by mechanical ventilation in an isolated perfused rabbit lung model. **Broccard AF**, Hotchkiss JR, Kuwayama N, Wangenstein OD, Marini JJ. Am J Resp Crit Care Med 1996;153;A378.  
Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR
  
13. The influence of gravity on the distribution of lung edema during ventilation induced lung injury in an isolated perfused rabbit preparation. Hotchkiss JR, **Broccard AF**, Kuwayama N, Wangenstein OD, Marini JJ. Am J Resp Crit Care Med 1996;153;A378.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

14. Effects of mean airway pressure and tidal excursion on lung injury induced by mechanical ventilation in an isolated perfused rabbit lung model. **Broccard AF**, Hotchkiss JR, Suzuki So, Olson DA, Marini JJ. Am J Resp Crit Care Med 1997;155:A88.  
Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

15. Ventilation non invasive pour insuffisance respiratoire aiguë hors des soins intensifs. K. Grant, V Schenk, L Burdet, B Yersin, **A Broccard**, M-D Schaller. Schweiz. Med. Wschr 1999;129; Suppl 111 P43.  
Contribution: DSD, DIC, DA, Dan, ME, MR

16. Pharmacokinetics of Meropenem in critically ill patients undergoing continuous veno-venous hemofiltration (CVVHD). C Robatel, T Buclin, LA Decosterd, J Biollaz, P Eckert P, **A Broccard**, G Vogel, R Chiolero, M-D Schaller. Schweiz. Med. Wschr 1999;129; S111:10.  
Contribution: ME, MR

17. Achat de materiel aux soins intensifs: création d'une méthode d'évaluation des différents équipements. P Besson, **A Broccard**, CL Chollet, P Noth, JP Revelly. Schweiz. Med. Wschr 1999;129;S111:48.  
Contribution: DSD, Dan, MR

18. Relationship between Ventilator-induced lung injury and the longitudinal distribution of pulmonary vascular resistance in an isolated perfused rabbit lung model. **Broccard AF**, Vannay C, Anglada C, Hotchkiss JR, Schaller M-D. AJRCCM 2000;161;A723.  
Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

19. Protective effects of respiratory acidosis on ventilator-induced lung injury **Alain F. Broccard**, Christine Vannay, Michele Markert, Alain Sauty, François Feihl, Marie-Denise Schaller. Schweiz. Med. Wschr 2000;130;S118:5.  
Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

20. Does lowering the left atrial pressure to keep the lung "dry" limit ventilator-induced lung injury? **Alain F. Broccard**, Christine Vannay, Marie-Denise Schaller. Schweiz. Med. Wschr 2000;130; S118 :5.  
Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

21. Réactivité microvasculaire au cours de la sepsis sévère. Sandrine Kubli, **Alain Broccard**, Jean-P Revelly, Bernard Waeber, Marie-Denise Schaller, François Feihl. Schweiz. Med. Wschr 2000;130; S118:16.  
Contribution: DA, ME, MR

22. Bilateral breast necrosis after prone position ventilation L. Burdet, L. Liaudet, **A. Broccard**, M.-D. Schaller. Schweiz. Med. Wschr 2000;130;S118 :18.  
Contribution: DIC, DA, Dan, CLR, ME, MR

23. Acidose lactique induite par les inhibiteurs de la transcriptase inverse utilisés lors d'infection par le VIH : un effet secondaire potentiellement létal. M.Lepori, G. Greub, L. Burdet, A.F. Broccard, M.D. Schaller. Schweiz. Med. Wschr 2000;130;118S:18.

Contribution: ME, MR

24. Protective effects of respiratory acidosis on ventilator-induced lung injury.

**Broccard AF**, Hotchkiss J, Vannay C, Markert M, Sauty A, Feihl F, Schaller M-D. *Intensive Care Med* 2000;26:S3-225.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

25. Does lowering the left atrial pressure to keep the lung “dry” limit ventilator-induced lung injury? **Broccard AF**, Vannay C, Schaller M-D. *Chest* 2000;118:S4-116S.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

26. Protective effects of respiratory acidosis on ventilator-induced lung injury.

**Broccard AF**, Hotchkiss J, Vannay C, Markert M, Sauty A, Feihl F, Schaller M-D. *Am J of Resp and Crit Care Med* 2001;163:A678.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

27. Possible alternatives to the ultrafiltration coefficient for assessing the intensity of ventilator-induced lung injury. **Broccard AF**, Vannay C, Feihl F, Markert M, Schaller M-D. *Intens Care Med* 27: 568 Suppl. 2 SEP 2001.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

28. Does Nitric oxide modulate ventilator-induced lung injury? **Broccard AF**, Vannay C, Feihl F, Markert M, Schaller M-D. **Broccard AF**, Vannay C, Feihl F, Markert M, Schaller M-D. *Intens Care Med* 27: 31 Suppl. 2 SEP 2001.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

29. Air Vs. helium noninvasive pressure support in acute COPD decompensation: a prospective, randomized study. Jolliet P, Tassaux D, Burdet L, **Broccard A**, D’Hoore W, Borst F, Raeynaert M, Schaller MD, Chevrolet JC. *Intens Care Med* 27: 208 Suppl. 2 SEP 2001

Contribution: DA, ME, MR

30. Self-evaluation of physical restraint practice by critical care nurses. Vannay-Bouchiche C, Eckert P, Feihl P, Penseyres T, Crognaletti F, Chiolero R, Tagan D, **Broccard A**, Schaller MD. *Intens Care Med* 27: NP10 Suppl. 2 SEP 2001.

Contribution: DSC, DSD, DIC, Dan, ME, MR

31. Pratique de la contention physique en réanimation: enquête auprès du corps infirmier. Vannay C, Eckert P, Feihl F, Penseyres T, Crognaletti F, Chiolero R, Tagan D, **Broccard A**, Schaller MD *Réanimation*, 2001: 10 (Suppl 1): 46S, Abst. SO17.

Contribution: DSC, DSD, DIC, Dan, ME, MR

32. Air Vs. Helium Noninvasive Pressure Support (NIPSV) in decompensated COPD: A Prospective Randomized Study. Jolliet P, Tassaux D, Roeseler J, Burdet L, **Broccard A**, D’Hoore W, Borst F, Raeynaert M, Schaller MD, Chevrolet J C. *Am J of Resp and Crit Care Med* 2002;165:A21

Contribution: DA, MR

33. Nitric Oxide Modulates Ventilator-Induced Lung Injury And Oxidative Stress In

Isolated Perfused Rabbit Lungs. **Broccard A F**<sup>1</sup>, Vannay C<sup>1</sup>, Feihl F<sup>2</sup>, Markert M<sup>3</sup>, Schaller M-D. Am J of Resp and Crit Care Med 2002;165;B53.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

34. *In Vivo* Effects of Hypercapnia, Acidosis and Frequency on Ventilator Induced Lung Injury. EJ Korbach, AB Adams DA Simonson, Rodrigues C, JR Hotchkiss and **AF Broccard**. Am J of Resp and Crit Care Med 2003;167;A775.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

35. Ventilator induced apoptosis is blocked by tUDCA in an *in vivo* Model of VILI. Korbach EJ, Adams AB, Simonson DA, Steer CJ, Rodrigues C, Hotchkiss JR, **Broccard AB**. Am J of Resp and Crit Care Med 2004;169;A787.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

36. Impact of Implementation of a 5-Component Care Bundle on Ventilator-Days and VAP Rate in a MICU. M. Zamanian, MD, P. Peine, RN, A.B. Adams, MPH, I. de Chazal, MD, A. Nahum, MD, **A.F. Broccard**, MD, St. Paul, MN. Am J of Resp and Crit Care Med 2005;2: A595.

Contribution: DSC, DSD, DIC, CES, DA, Dan, CLR, MP, ME, MR

37. Glucommander: Better Glycemic Control than Standard IV Insulin Infusion Protocol. I.R. de Chazal, MD, J.H. MacIndoe, MD, A. Adams, RRT,MPH, P. Peine, CCRN, M. Zamanian, MD, A. Nahum, MD, **A. Broccard**, MD, Mpls/St.Paul, St. Paul, MN. Am J of Resp and Crit Care Med 2005;2:A38

Contribution: DSC, DSD, DIC, CLR, MP, ME, MR

38. The effects of tight glucose control on an *in vivo* rabbit model of ventilator-induced lung-injury. Risher DW, Adams A, Petersen MS, MacIndoe JH, **Broccard A**. Am J of Resp and Crit Care Med 2006;3:A246.

Contribution: DSC, DSD, DIC, CLR, MP, ME, MR

39. Assessment of cardiac function and ventilatory efficiency by noninvasive CO<sub>2</sub> monitoring during reduced of ventilatory support in patients with CHF. Zamanian M, Adams A, **Broccard A**. Am J of Resp and Crit Care Med 2006;3:A297.

Contribution: DSC, DSD, DIC, CLR, MP, ME, MR

40. Strict Glycemic Control and Insulin Requirements During and After Induced Hypothermia Following Cardiac Arrest. S. Nagamatsu, MD A.J. Knopke-Mooney, MD, K.R. Ham, MD<sup>1</sup>, J.H. MacIndoe, MD<sup>2</sup>, D.G. Aho, RN,BSN,CCRN<sup>2</sup> and **A.F. Broccard**, MD<sup>2</sup>. <sup>1</sup> Am J of Resp and Crit Care Med 2007;3:A596

Contribution: DSC, DSD, DIC, CLR, MP, ME, MR

41. Predicting Prolonged Mechanical Ventilation in ARDS Using Logistic Regression and Neural Network Models. K.R. Ham, MD<sup>1</sup>, S.E. Asche, MA<sup>2</sup> C.R., Weinert, MD, MPH<sup>1</sup> and **A.F. Broccard**, MD<sup>2</sup>. <sup>1</sup>University of Minnesota, Minneapolis, Minnesota, United States; <sup>2</sup>Regions Hospital and Health Partners Research Foundation, St. Paul, Minnesota, United States Am J of Resp and Crit Care Med 2008;117:A628

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