

Frank J. Jacono, III, M.D.

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Education

August 1990 – May 1994

Bachelor of Science, Major: Physics, Summa cum laude
Case Western Reserve University, Cleveland, Ohio

August 1994 – May 1998

Doctor of Medicine
Washington University School of Medicine, St. Louis, Missouri

Medical Training

July 1998 – June 1999

Internship, Department of Medicine

University Hospitals of Cleveland, CWRU, Cleveland, Ohio

July 1999 – June 2001

Residency, Department of Medicine

University Hospitals of Cleveland, CWRU, Cleveland, Ohio

July 2001 – June 2004

Fellowship, Pulmonary and Critical Care Medicine

University Hospitals of Cleveland, CWRU, Cleveland, Ohio

Academic Appointments

July 2004 – June 2005

Clinical Instructor, Department of Medicine

Division of Pulmonary & CC Medicine, CWRU SOM, Cleveland, Ohio

July 2005 – June 2006

Instructor, Department of Medicine

Division of Pulmonary & CC Medicine, CWRU SOM, Cleveland, Ohio

July 2006 – *current*

Assistant Professor, Department of Medicine

Div. of Pulmonary, CC & Sleep Medicine, CWRU SOM, Cleveland, Ohio

Hospital and Administrative Appointments

2004 – *current*

Staff Physician

Louis Stokes Cleveland Dept. of Veterans Affairs Medical Center

2005 – *current*

Full Time Medical Staff Appointment

Dept. of Medicine, UHMC, Pulmonary, Critical Care & Sleep Medicine

2005 – 2010

Medical Director, Pulmonary Fellows' Outpatient Clinic

Louis Stokes Cleveland Dept. of Veterans Affairs Medical Center

2005 – 2013

Co-Director, Research Conference

Division of Pulmonary, Critical Care and Sleep Medicine

2005 – 2010

Director, Perioperative Medicine and Pain, Advanced Core

Case School of Medicine Curriculum

2005 – *current*

Medical Director, Respiratory Therapy Department

Louis Stokes Cleveland Dept. of Veterans Affairs Medical Center

2007 – *current*

Medical Chairperson, CPR Committee

Louis Stokes Cleveland Dept. of Veterans Affairs Medical Center

2010 – *current*

Section Chief, Pulmonary, Critical Care and Sleep Medicine

Louis Stokes Cleveland Dept. of Veterans Affairs Medical Center

2011 – *current*

Co-Chairperson, Critical Care Council

Louis Stokes Cleveland Dept. of Veterans Affairs Medical Center

Honors and Awards

1990	Presidential Scholarship
1992	Outstanding Sophomore of the Year Award
1993	All-Conference Athlete, Track & Field, North Coast Athletic Conference
1993	Chandrasekhar Prize for Physics
1993	Phi Beta Kappa
1994	Summa Cum Laude
1994-1998	Distinguished Alumni Scholarship - Full-tuition, merit-based, competitively awarded
2001	The Normal Gordon Award for Humanism in Medicine
2002	NIH Research Trainee Award
2003	Chief Fellow, Pulmonary and Critical Care Medicine, UHC
2004	American Heart Association Post-doctoral Fellowship Award
2006	VA Advance Research Career Development Award
2009	Finalist (1 of 8) for the 2009 John S. Diekhoff Graduate Student Mentoring Award
2010	Finalist (1 of 4) for Teacher of the Year as voted on by medical residents
2011	ATS SRN Assembly Travel Award to Matt Knoch (research mentee)
2013	ATS SRN Assembly Abstract Scholarship to Yee-Hsee Hsieh (research mentee)
2013	Department of Medicine Inpatient Clinical Teacher of the Year Award

Certification and Licensure

Diplomate, American Board of Internal Medicine, Internal Medicine, 2001
Diplomate, American Board of Internal Medicine, Pulmonary Medicine, 2003, 2013
Diplomate, American Board of Internal Medicine, Critical Care Medicine, 2004
State Medical Board of Ohio, License Number 35.085060
DEA Number, Available on request
Advanced Cardiac Life Support Provider, Renewed October 2012
Basic Life Support Provider, Renewed August 2012

Professional Service

Professional Societies

2001 – <i>current</i>	American Thoracic Society, Member Program Committee, 2010 – 2013 Assembly on Sleep and Respiratory Neurobiology
2010 – <i>current</i>	Society for Complex Acute Illness (scai-med.org), member <i>Elected</i> to the Board, 2012
2011 – <i>current</i>	Society for Simulation in Healthcare, Member

National/International Contributions

2008	Facilitator, thematic poster session: Control of Breathing and Ventilation American Thoracic Society 2008 International Conference, San Francisco, USA
2011	Facilitator, thematic poster session: Control of Breathing and Respiratory Muscles American Thoracic Society 2011 International Conference, Denver, CO, USA
2012	Co-chair, Featured Topic Session: <i>Respiratory Pattern Variability: Insights into Respiratory Control Mechanisms in Health and Disease</i> Experimental Biology 2012 Meeting, San Diego, CA, USA

Professional Service (continued)

National/International Contributions (continued)

2012	Facilitator, Session: <i>Sleep Disordered Breathing: Pathophysiology</i> American Thoracic Society 2012 International Conference, San Francisco, CA, USA
2012	Facilitator, Scientific Poster Sessions International Conference on Complexity and Acute Illness 2012, Ottawa, Ontario, Canada.
2013	Abstract Review Committee International Conference on Complex Acute Illness (ICCAI), Budapest, Hungary
2014	Lead Facilitator, Session: <i>Upper Airway and Respiratory Control During Sleep</i> American Thoracic Society 2014 International Conference, San Diego, CA, USA
<i>Ad hoc</i> reviewer	Journal of Applied Physiology, Experimental Physiology, Sleep and Breathing, Comparative Biochemistry & Physiology, Brain Research Bulletin, Anesthesia & Analgesia, Respiratory Physiology & Neurobiology, Journal of Critical Care

Regional Contributions

2004 – <i>current</i>	Cleveland Association of Phi Beta Kappa, Board of Trustees
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Case Western Reserve University Campus Contributions

2013	Research ShowCASE Judge
2012 – 2013	Cleveland VAMC Chief of Surgery Search Committee
2011 – <i>current</i>	CTSC Grant Review Committee
2010 – 2011	Cleveland VAMC Chief of Medicine Search Committee
May 2010	Department of Medicine 2010 Research Day – Judge for Resident Posters
2009 – 2012	Cleveland VA Home Ventilator Oversight Committee
2009 – <i>current</i>	Cleveland VA MICU Quality Improvement (QI) Subcommittee
2008 – <i>current</i>	Case Critical Care Bioinformatics Working Group
2007 – <i>current</i>	Case School of Medicine (SOM) Year 1 Clinical Immersion Group Leader – Asthma, COPD & ARDS – 12 hours/year
2006 – <i>current</i>	Case SOM Year 3 Block I: Asthma, COPD, PFTs (8 lectures, ~50 students/year)
August 2006	Dept. of Medicine Resident Procedure Training: Design Team and Instructor
March 2006	PHYS 500 Translational Cell Physiology: Pathophys. of breathing disorders
2005 – 2010	Case SOM, Curriculum Director, Perioperative Medicine & Pain Advanced Core
2005 – <i>current</i>	Louis Stokes Cleveland DVAMC CPR Committee
2005 – <i>current</i>	Department of Medicine Intern Selection Committee
2005 & 2010	Case SOM Year 1 Curriculum: Pulmonary Physical Examination: Preceptor
2005 – <i>current</i>	Division of Pulmonary/CCM Research Conference: Co-Director
2005 – 2007	UHCMC MICU Evidenced-Based Medicine Algorithm Implementation Team
2005 – <i>current</i>	UHCMC MICU Quality Assurance and Education Improvement Committee
2005 – 2006	Case SOM Year 2 Curriculum – Homeostasis II: Lecturer & Small Group Leader
2004 – 2009	DOM Yearly Resident Board Review Course; Moderator: Pulmonary Section
2004 – <i>current</i>	Division of Pulmonary/CCM Fellowship Selection Committee
2004 – 2005	Anti-IgE Therapy in Asthma: Recommendations for Use Committee
2003	Internal Review of Psychiatry Program: Graduate Medical Education Committee

Grant Support & Funded Research

Active:

- 10/1/11 – 9/30/15 VA Research Service: BLR&D Merit Review Award (I01BX000873) (Jacono)
Prognostic & Therapeutic Implications of Breathing Patterns in ALI
Direct: \$650,000 **PI: F. Jacono** (40% effort)
- 7/1/12 – 6/30/14 Draper Laboratory University R&D Project (Jacono & Loparo)
ICU Engineering Research Laboratory
Direct: \$96,000 **Co-PI: F. Jacono** (5% effort)
- 9/01/11 – 8/31/14 NINDS 2-R01-NS-057398-05 (Katz)
Respiratory Circuit Dysfunction in Rett Syndrome
Direct: \$740,000 PI: D.M. Katz. **Co-PI: F. Jacono** (10% effort)
- 1/01/14 – 12/31/17 HUD HHTS-12 (Dearborn)
Residential Air Quality and Chronic Obstructive Pulmonary Disease (COPD)
Direct: \$749,952 PI: D. Dearborn. **Co-I: F. Jacono** (5% effort)
- 2013 – current Statins for Acutely Injured Lungs From Sepsis (SAILS) (NCT00979121)
National Heart, Lung, and Blood Institute (NHLBI) ARDS Network
UHCMC Site Sub-Investigator: F. Jacono
- 2013 – current Extend Steroid (use in severe) Community Acquired Pneumonia(e) (ESCAPE)
Department of Veterans Affairs CSP #574 (NCT01283009)
Cleveland VAMC Site Investigator: F. Jacono
- 7/01/11 – 6/30/16 NHLBI Training Grant (5 T32 HL007913-10) (Strohl)
Sleep Medicine Neurobiology and Epidemiology
PI: K.P. Strohl. **Program Faculty Trainer: F. Jacono**

Pending:

- 11/01/14 – 10/30/19 NIH 1 R01 HL121099-01 (Jacono)
Ventilatory pattern altered by brainstem IL-1: Role in early diagnosis of ARDS
Direct: \$1,250,000 **PI: F. Jacono** (20% effort)
- 7/1/14 – 6/30/18 VA Research Service: RR&D Merit Review Award (Alilain)
Restoring and Forecasting Respiratory Motor Function After Cervical SCI
Direct: \$1,000,000 **Co-PI: F. Jacono** (25% effort)
- 10/01/14 – 9/30/19 NIH 1 U01 HL122194-01 (Dick)
Brainstem Inflammation Mediates Multisystemic Responses to Sepsis
Direct: \$1,980,793 **Co-I: F. Jacono** (10% effort)
- 7/1/14 – 6/30/18 VA Research Service: RR&D Merit Review Award (Lin)
Respiratory Muscle Training Functional Magnetic Stimulation (FMS) in Elderly
Direct: \$1,000,000 **Co-PI: F. Jacono** (10% effort)
- 7/1/14 – 6/30/18 NSF/NIH Smart & Connected Health (SCH: INT) NOT-OD-13-041 (Loparo)
Improving Situational Awareness & Clinical Decision-Making in Critical Care
Direct: \$1,480,000 **Co-I: F. Jacono** (20% effort)

Grant Support & Funded Research (continued)

Past/Completed (continued):

- 2011 – 2013 Weaning and Variability Evaluation (WAVE) (NCT01237886)
Multi-Center Trial, Coordinating Center: Ottawa Hospital Research Institute
Study PI: A.J. Seely **UHCMC Site PI: F. Jacono**
- 4/1/10 – 3/31/13 NIH Feasibility II Pilot Project (Project within NIH P30 DK27651 (Konstan))
Respiratory Phenotyping of a Mouse Model of Cystic Fibrosis
Direct: \$130,000 **Pilot Project PI: F. Jacono**
- 9/15/08 – 5/31/11 NHLBI Exploratory Program in Systems Biology (R33 HL087377) (Dick)
Breathing Pattern Dysregulation in Cardiopulmonary Disease
Direct: \$611,854 PI: T.E. Dick. **Co-PI: F. Jacono** (10% effort)
- 9/15/08 – 5/31/11 NHLBI Exploratory Program in Systems Biology (R33 HL087340) (Strohl)
Breathing Stability: Linear and Non-Linear Features
Direct: \$593,194 PI: K.P. Strohl. **Co-PI: F. Jacono** (10% effort)
- 7/1/08 – 6/30/11 2008 Presidential Research Initiative (PRI) (Jacono)
Complex Systems Analysis of Breathing Patterns in Lung Injury:
Applications to Predict Outcomes and Limit Severity
Direct: \$75,000 **PI: F. Jacono**
- 7/1/08 – 6/30/11 2008 Presidential Research Initiative (PRI) (Jacono)
Complex Systems Analysis of Breathing Patterns in Lung Injury:
Applications to Predict Outcomes and Limit Severity
Direct: \$75,000 **PI: F. Jacono**
- 7/9/06 – 7/8/09 DVA Advance Research Career Development Award (Jacono)
Impact of Lung Injury on Control of Breathing: Role of the Carotid Body
Direct: \$537,600 **PI: F. Jacono**
- 7/01/05 – 6/30/10 NHLBI Training Grant (T32 HL007913) (Strohl)
Sleep Medicine Neurobiology and Epidemiology
PI: K.P. Strohl. **Program Faculty Trainer: F. Jacono**
- 7/1/04 – 6/30/06 American Heart Association 0425347B (Jacono)
Carotid Body Oxygen Sensing in an Experimental Model of Lung Injury
Direct: \$84,000 **PI: F. Jacono**
- 7/02 – 6/04 NHLBI Training Grant (T32 HL07887) (Prabhakar)
PI: N. Prabhakar; Role: Research Trainee (**F. Jacono**)

Peer-Reviewed Publications

1. Read, TE, **Jacono, FJ**, Prakash, C. Coloenteric fistula from chicken bone perforation of the sigmoid colon. *Surgery* 1999; 125(3): 354-6.
2. Prabhakar, NR, Peng, Y, **Jacono, FJ**, Kumar, GK, Dick, TE. Cardiovascular alterations by chronic intermittent hypoxia: Importance of carotid body chemoreflexes. *Clinical and Experimental Pharmacology and Physiology* 2005; May 32(5-6): 447-9.
3. Prabhakar, NR and **Jacono, FJ**. Cellular and Molecular Mechanisms Associated with Carotid Body Adaptations to Chronic Hypoxia. *High Altitude Medicine and Biology* 2005; Summer; 6(2):112-20.
4. **Jacono, FJ**, Peng, Y, Kumar, GK, Prabhakar, NR. Modulation of the hypoxic sensory response of the carotid body by 5-hydroxytryptamine: Role of the 5-HT₂ receptor. *Respiratory Physiology & Neurobiology* 2005; Feb 15;145(2-3):135-42.
5. Peng, Y, Yuan, G, **Jacono, FJ**, Kumar, GK, Prabhakar, NR. 5-HT evokes sensory long-term facilitation of rodent carotid body via activation of NADPH oxidase. *J Physiol.* 2006; Oct 1; 576(Pt 1):289-95.
6. **Jacono, FJ**, Peng, Y, Nethery, D, Faress, JA, Lee, Z, Kern, JA, Prabhakar, NR. Acute lung injury augments hypoxic ventilatory response in the absence of systemic hypoxemia. *J Appl Physiol.* 2006; Dec 101(6):1795-802.
7. Faress, JA, Nethery, D, Kern, E, Eisenberg, R, **Jacono, FJ**, Allen, C, Kern, JA. Inhibition of human epidermal growth factor receptor 2 (HER2) signaling decreases bleomycin-induced pulmonary fibrosis and improves survival in mice. *J Appl Physiol.* 2007; Dec 103(6):2077-83.
8. Pawar, A, Peng, Y, **Jacono, FJ**, Prabhakar, NR. Comparative analysis of neonatal and adult rat carotid body responses to chronic intermittent hypoxia. *J Appl Physiol.* 2008 May;104(5):1287-94.
9. Yamauchi, M, Hasan, O, Dostal, J, **Jacono, FJ**, Loparo, KA, Strohl, KP. Pharmacologic and Genetic Modification of Post-sigh Breathing Behavior and Spontaneous Pauses in the C57BL/6J (B6) Mouse. *Respir Physiol Neurobiol.* 2008 Jul 31;162(2):117-25.
10. Thaiyananthan, NN, **Jacono, FJ**, Patel, SR, Kern, JA, Stoller, JK. Right-to-Left Anatomic Shunt Associated with a Persistent Left Superior Vena Cava: The Importance of Injection Site in Demonstrating the Shunt. *Chest* 2009 Aug;136(2):617-20.
11. Ibrahim, LH, **Jacono, FJ**, Patel, SR, Thomas, RJ, Larkin, EK, Mietus, JE, Peng, C, Goldberger, AL, Redline, S. Heritability of Abnormalities in Cardiopulmonary Coupling in Sleep Apnea: Use of an Electrocardiogram-based Technique. *SLEEP* 2010; 33(5):643-646.
12. Koo, B, Strohl, KP, Gillombardo, CB, **Jacono, FJ**. Ventilatory Patterning in a Mouse Model of Stroke. *Respir Physiol Neurobiol.* 2010 Jul 31;172(3):129-35.
13. **Jacono, FJ**, De Georgia, MA, Wilson, CG, Dick, TE, Loparo, KA. Data Acquisition and Complex Systems Analysis in Critical Care: Developing the Intensive Care Unit of the Future. *Journal of Healthcare Engineering* 2010; September; 1(3): 337-356. doi: 10.1260/2040-2295.1.3.337.
14. Yamauchi, M, Tamaki, S, Yoshikawa, M, Ohnishi, Y, Nakano, H, **Jacono, FJ**, Strohl, KP, Loparo, KA, Kimura, H. Differences in Breathing Patterning during Wakefulness in Patients with Mixed-Apnea Dominant vs. Obstructive-Dominant Sleep Apnea. *Chest* 2011; Jul;140(1):54-61. Epub 2011 Mar 10.

Peer-Reviewed Publications (continued)

15. Dhingra, RR, **Jacono, FJ**, Fishman, M, Loparo, KA, Rybak, IA, Dick TE. Vagal-Dependent Respiratory Variability in the Anesthetized Spontaneously Breathing Rat. *J Appl Physiol* 2011; Jul;111(1):272-84. Epub 2011 Apr 28.
16. **Jacono, FJ**, Mayer, CA, Hsieh, Y, Wilson, CG, Dick, TE. Lung and brainstem cytokine levels are associated with breathing pattern changes in early acute lung injury. *Respir Physiol Neurobiol* 2011 Sept 30; 178(3):429-438. Invited contribution to Special Issue on “Inflammation and Cardiorespiratory Control.” Epub 2011 May 13, doi:10.1016/j.resp.2011.04.022.
17. Friedman, L, Dick, TE, **Jacono, FJ**, Loparo, KA, Yeganeh, A, Fishman, M, Wilson, CG, Strohl, KP. Cardio-ventilatory coupling in young healthy resting subjects. *J Appl Physiol*. 2012 Apr;112(8):1248-57. Epub 2012 Jan 19.
18. Fishman, M, **Jacono, FJ**, Park, S, Jamasebi, R, Thungtung, A, Loparo, KA, Dick, TE. A method for analyzing temporal patterns of variability of a time series from Poincaré plots. *J Appl Physiol*. 2012 Jul; 113(2): 297-306. Epub 2012 May 3, doi:10.1152/jappphysiol.01377.2010.
19. Dick TE, Molkov YI, Nieman G Hsieh Y-H, **Jacono FJ**, Doyle J, Scheff JD, Calvano SE, Androulakis IP, An G and Vodovotz Y. Linking inflammation, cardiorespiratory variability, and neural control in acute inflammation via computational modeling. *Front. Physio.* 2012; 3:222. doi: 10.3389/fphys.2012.00222.
20. Bou Serhal, CE, **Jacono, FJ**, van Lunteren, E, Strohl, KP. Constant Daily Hypoxia Leads to Different Degrees of Pulmonary Hypertension in Two Different Rat Strains. *Open Journal of Molecular and Integrative Physiology* 2012; 2: 87-92. doi:10.4236/ojmip.2012.23012 Published Online 8/2012.
21. Yamauchi, M, **Jacono, FJ**, Fujita, Y, Yoshikawa, M, Ohnishi, Y, Nakano, H, Campanaro, CK, Loparo, KA, Strohl, KP, Kimura, H. Breathing Irregularity During Wakefulness Associates with CPAP Acceptance Sleep Apnea. *Sleep and Breathing* 2012 Oct 19. [Epub ahead of print].
22. Loria, CJ, Stevens, AM, Crummy, E, Casadesus, G, **Jacono, FJ**, Dick, TE, Siegel, RE. Respiratory and behavioral dysfunction following loss of the GABAA receptor $\alpha 4$ subunit. *Brain and Behavior*. 2013 Mar; 3(2):104-13.
23. Zhu, Y, Hsieh, Y-H, Dhingra, RR, Dick, TE, **Jacono, FJ**, Galán, RF. Quantifying interactions between real oscillators with information theory and phase models: Application to cardiorespiratory coupling. *Phys Rev E Stat Nonlin Soft Matter Phys*. 2013 Feb; 87(2):022709.
24. Darrah, B, Bederman, I, Mitchell, A, Hodges, C, Campanaro, C, Drumm, M, **Jacono, FJ**. Ventilatory Pattern and Energy Expenditure are Altered in Cystic Fibrosis Mice. *Journal of Cystic Fibrosis* 2013 Jan 3. <http://dx.doi.org/10.1016/j.jcf.2012.11.008> [Epub ahead of print].
25. Dhingra, RR, Zhu, Y, **Jacono, FJ**, Katz, DM, Galan, RF, Dick, TE. Decreased Hering-Breuer input-output entrainment in a mouse model of Rett syndrome. *Frontiers in Neural Circuits* 2013 2013; 7:42. doi: 10.3389/fncir.2013.00042.
26. Chung, A, Fishman, M, Dasenbrook, EC, Loparo, KA, Dick, TE, **Jacono, FJ**. Isoflurane and Ketamine Anesthesia have Different Effects on Breathing Pattern Variability in Rats. *Respiratory Physiology & Neurobiology* 2013 Feb 1;185(3):659-64. doi:10.1016/j.resp.2012.12.001.
27. Park, S, Kaffashi, F, Loparo, KA, **Jacono, FJ**. The Use of Heart Rate Variability for the Early Detection of Treatable Complications After Subarachnoid Hemorrhage. *J Clin Monit Comput*. 2013 Aug;27(4):385-93. doi: 10.1007/s10877-013-9467-0. Epub 2013 Apr 25.

Peer-Reviewed Publications (continued)

28. Yamauchi, M, **Jacono, FJ**, Fujita, Y, Kumamoto, M, Yoshikawa, M, Campanaro, CK, Loparo, KA, Strohl, KP, Kimura, H. Effects of environmental light during sleep on autonomic functions of heart rate and breathing. *Sleep Breath*. 2014 Feb 13 [Epub ahead of print].
29. Seely, AJE, Bravi, A, Herry, C, Green, G, Longtin, A, Ramsay, T, Fergusson, D, McIntyre, L, Kubelik, D, Fazekas, A, Maziak, DE, Fergusson, N, Brown, S, Mehta, S, Martin, C, Rubenfeld, G, **Jacono, FJ**, Clifford, G, Marshall, J, and the WAVE Investigators for the Canadian Critical Care Trials Group. Do Heart and Respiratory Rate Variability Improve Prediction of Extubation Outcomes in a General ICU Population? *Critical Care* (Accepted with minor revisions).

Invited Works

1. **Jacono, FJ** and Dick, TE. Variability, Measuring the Spice of Life. *J Appl Physiol* 2011; Aug; 111(2):351-352. Epub 2011 Jun 30. doi: 10.1152/jappphysiol.00786.2011. [Invited Editorial]
2. **Jacono, FJ**, De Georgia, MA, Wilson, CG, Dick, TE, Loparo, KA. Data Acquisition and Complex Systems Analysis in Critical Care: Developing the Intensive Care Unit of the Future. In: Chyu, M (ed). *Advances in Critical Care Engineering*. Multi-Science Publishing Co., Brentwood, 2011, pp 205-224 (ISBN 978-1-907132-28-5). [Book Chapter]
3. Namas, R, Zamora, R, Namas, R, Ghuma, A, An, G, Doyle, J, Dick, TE, **Jacono, FJ**, Androulakis, IP, Chang, S, Billiar, TR, Angus, DC, Vodovotz, Y. Sepsis: Something Old, Something New, and a Systems View. *J Crit Care*. 2012 Jun;27(3):314.e1-314.e11. Epub 2011 Jul 27. [Invited Review]
4. Dick, TE, Dhingra, RR, Hesih, Y-H, Fishman, M, Kaffashi, F, Loparo, KA, Wilson, CG, **Jacono, FJ**. Analysis of Ventilatory Pattern Variability. In: An, G and Vodovotz, Y (eds.). *Complex Systems and Computational Biology Approaches to Acute Inflammation*. Springer Science, Inc., New York, 2013. [Invited Book Chapter]
5. **Jacono, FJ**, Soler, X, Malhotra, A. Control of Ventilation. In: Fishman's Pulmonary Diseases and Disorders. [Invited Book Chapter, submitted for peer review July 2013].
6. **Jacono, FJ**. Control of Ventilation in Lung Injury and COPD. *Respir Physiol Neurobiol* Special Issue on "Inflammation and Cardiorespiratory Control." *Respir Physiol Neurobiol*. 2013 Jul 12. doi:pii: S1569-9048(13)00244-9. 10.1016/j.resp.2013.07.010. [Epub ahead of print] [Invited Review].

Submitted for Peer Review or In Preparation

1. Young, BP, Fishman, M, Loparo, KA, Dick, TE, **Jacono, FJ**. Breathing Pattern Variability as a Biomarker for Severity of Acute Lung Injury in Rats. (In preparation).
2. Hsieh, Y-H, Zaylor, AR, Young, BP, Nethery, D, Dick, TE, **Jacono, FJ**. Ventilatory Pattern Changes Persists in the Absence of Pulmonary Feedback Following Lung Injury in Rats. (In preparation.)
3. Knoch, MF, Balaji, R, Nethery, DE, Campanaro, C, Baekey, DM, Dick, TE, **Jacono, FJ**. Biologically Variable Ventilation Limits Acute Lung Injury Following Acid Aspiration in Rats. (In preparation).
4. De Georgia, MA, Kaffashi, F, **Jacono, FJ**, Loparo, KA. Information Technology in Critical Care *Journal of Healthcare Engineering* (Submitted).

Selected Abstracts

1. Peng, Y, **Jacono, FJ**, Overholt, JL, Prabhakar, NR. Repetitive application of 5-HT induces LTF of carotid body sensory activity via PKC-dependant mechanisms. Abstract #3099. Experimental Biology Annual Meeting 2003, San Diego, California, USA.
2. **Jacono, FJ**, Peng, Y, Prabhakar, NR. Short term potentiation of carotid body sensory activity by 5-HT. Abstract #352088. ATS Annual Conference 2003, Seattle, Washington, USA.
3. **Jacono, FJ**, Nethery, D, Kern, JA, Prabhakar, NR. Enhanced hypoxic ventilatory response in a rat model of bleomycin-induced lung injury. Abstract #4445. American Thoracic Society Annual Conference 2004, Orlando, Florida, USA.
4. Peng, Y, Yuan, G, **Jacono, FJ**, Kumar, GK, Prabhakar, NR. Role of 5-HT in chronic intermittent hypoxia induced sensory long-term facilitation of the carotid body. Abstract #904.10. Experimental Biology Annual Meeting 2005, San Diego, California, USA.
5. **Jacono, FJ**, Peng, Y, Nethery, D, Kern, JA, Prabhakar, NR. Selective augmentation of the hypoxic ventilatory response in the early phase of lung injury. Abstract #904.7. Experimental Biology Annual Meeting 2005, San Diego, California, USA.
6. Minowada, G, **Jacono, FJ**. Loss of *spry2* protects against hyperoxia. Abstract #3718. American Thoracic Society Annual Conference 2005, San Diego, California, USA.
7. **Jacono, FJ**, Peng, Y, Prabhakar, NR. Early lung injury enhances hypoxic ventilatory response in the absence of arterial hypoxemia. Abstract #4517. American Thoracic Society Annual Conference 2005, San Diego, California, USA.
8. **Jacono, FJ**, Peng, Y, Nethery, D, Faress, J, Kern, JA, Prabhakar, NR. Hypoxic ventilatory response in early lung injury is augmented by oxygen-independent sensitization of the carotid body. Abstract #64. Central Society for Clinical Research Annual Meeting 2006, Chicago, Illinois, USA.
9. Faress, JA, Nethery, D, Kern, E, Eisenberg, R, **Jacono, FJ**, Kern, JA. HER2 blockade attenuates bleomycin induced lung injury. Abstract. ATS Annual Conference 2006, San Diego, California, USA.
10. **Jacono, FJ**, Nethery, D, Kern, JA, Prabhakar, NR. Cytokine Receptor Expression in the Rat Carotid Body. Abstract #3378. ATS Annual Conference 2006, San Diego, California, USA.
11. Kaffashi, F, Miller, C, Dick, TE, Strohl, KP, **Jacono, FJ**, Loparo, KA. A Novel Technique to Quantify Coupling between Time Series Data with Applications to the Detection of Coupling between Heart Rate and the Onsets of Inspiration and Expiration in Healthy Subjects. Abstract #13A. Biomedical Graduate Student Symposium 2007 Annual Meeting, Cleveland, OH, USA.
12. Palacios, MY, **Jacono, FJ**, Ceco, E, Fishman, M, Dick, TE. Nonlinear analysis of breathing patterns in development of acute and chronic lung injury. Case SOM Heart, Lung and Blood Summer Research Symposium 2007, Cleveland, OH, USA.
13. Ibrahim, L, Larkin, E, **Jacono, FJ**, Patel, S, Thomas, R, Mietusand, J, Goldberger, A, Redline, S. Heritability of novel measures of cardiopulmonary coupling as a measure of ventilatory patterns in sleep. Mini Symposium Presentation, ATS 2007 International Conference, San Francisco, CA, USA.
14. Bou Serhal, CE, van Lunteren, E, **Jacono, FJ**, Strohl, KP. Pulmonary hypertension in two strains of rats following daily hypoxia. Abstract #950701, American Thoracic Society 2007 International Conference, San Francisco, CA, USA.
15. Fishman, MB, **Jacono, FJ**, Loparo, KA, Dick, TE. Novel analysis applied to Poincaré plots to quantify pattern complexity and regularity. Abstract #918.27, Experimental Biology 2007 International Conference, Washington, D.C., USA.

Selected Abstracts (continued)

16. **Jacono, FJ**, Fishman, M, Ceco, E, Loparo, KA, Dick, TE. Poincare plots applied to analysis of breathing pattern after lung injury. Abstract #918.28, Experimental Biology 2007 International Conference, Washington, D.C., USA. *FASEB J.* 2007 21:918.28.
17. **Jacono, FJ**, Fishman, M, Ceco, E, Loparo, KA, Dick, TE. Poincare plots applied to analysis of breathing pattern after lung injury. Abstract #918.28, Experimental Biology 2007 International Conference, Washington, D.C., USA. *FASEB J.* 2007 21:918.28.
18. **Jacono, FJ**, Kaffashi, F, Fishman, MB, Loparo, KA, Dick, TE. Breathing pattern complexity and regularity in lung injury. Abstract #955416, American Thoracic Society 2007 International Conference, San Francisco, CA, USA.
19. Fishman, M, Dutschmann, M, **Jacono, FJ**, Komendantov, AO, Loparo, KA, Rybak, IA, Wilson, CG, Dick, TE. Using a model of respiratory rhythm generation to suggest sources of breathing variability. Society for Neuroscience 2007 International Conference, San Diego, CA, USA.
20. Fishman, MB, Dhingra, RR, **Jacono, FJ**, Komendantov, AO, Loparo, KA, Dutschmann, M, Rybak, IA, Wilson, CG, Dick, TE. Analysis of Respiratory Pattern Variability in Animal Models of Diseases and using the Model of Respiratory Rhythm Generation for Suggesting the Possible Sources of Breathing Variability. Experimental Biology 2008 International Conference, San Diego, CA, USA.
21. Palacios, MY, **Jacono, FJ**, Ceco, E, Fishman, M, Loparo, KA, Dick, TE. Nonlinear analysis of breathing patterns in development of acute and chronic lung injury. Experimental Biology 2008 International Conference, San Diego, CA, USA. *FASEB J.* 2008 22:756.13.
22. Bou Serhal, CE, Strohl, KP, **Jacono, FJ**, van Lunteren, E. Gene Expression Profiling of Right Ventricles in Hypoxia Exposed Sprague Dawley and Brown Norway Strains of Rats. American Thoracic Society 2008 International Conference, Toronto, Canada, *Am. J. Resp. Crit. Care Med.*, Apr 2008; 177.
23. Miller, CM, James, AS, Cruz-Sanchez, N, Kaffashi, F, Loparo, KA, Dick, TE, **Jacono, FJ**, Strohl, KP. Cardioventilatory Coupling in Healthy Subjects as Disclosed by Entropy Analysis is Increased by Mild Exercise and Unaffected by Vigilance Task. American Thoracic Society 2008 International Conference, Toronto, Canada, *Am. J. Respir. Crit. Care Med.*, Apr 2008; 177.
24. **Jacono, FJ**, Dhingra, RR, Fishman, M, Loparo, KA, Dick, TE. Impact of Vagotomy on Breathing Pattern in Early Lung Injury. Abstract #5274, American Thoracic Society 2008 International Conference, Toronto, Canada, *Am. J. Respir. Crit. Care Med.*, Apr 2008; 177.
25. Koo, BB, **Jacono, FJ**, Gillombardo, CB, Strohl, KP. Nonlinear Complexity of Breathing in a Mouse Model of Stroke and Cheyne-Stokes Respiration. Associated Professional Sleep Societies 2009 Annual Conference, Seattle, Washington, USA.
26. Bou Serhal, CE, **Jacono, FJ**, Strohl, KP, van Lunteren, E. Gene Expression Profiling of Right Ventricles in Hypoxia Exposed Sprague Dawley and Brown Norway Strains of Rats. Associated Professional Sleep Societies 2009 Annual Conference, Seattle, Washington, USA.
27. Young, BP, Balaji, R, Fishman, M, Dick, TE, **Jacono, FJ**. Impact of Early Lung Injury on a Global Index of Non-linear Breathing Pattern Variability. American Thoracic Society Annual Conference 2009, San Diego, California, USA, *Am. J. Respir. Crit. Care Med.*, Apr 2009; 179: A6333.
28. Gharibeh, T, **Jacono, FJ**, Hejal, R. A Case of Typical Endobronchial Carcinoid Tumor Treated with Flexible Bronchoscopic Therapy. American Thoracic Society Annual Conference 2010, New Orleans, Louisiana, USA, *Am. J. Respir. Crit. Care Med.*, May 2010; 181: A1581.

Selected Abstracts (continued)

29. Young, BP, Campanaro, C, Balaji, R, Fishman, M, Dick, TE, **Jacono, FJ**. The Effect of Hypercarbia on Nonlinear Breathing Pattern Variability in Early Lung Injury. ATS Annual Conference 2010, New Orleans, Louisiana, USA, *Am. J. Respir. Crit. Care Med.*, May 2010; 181: A3714.
30. Chung, A, Young, BP, Fishman, M, Balaji, R, Loparo, KA, Dick, TE, **Jacono, FJ**. Impact of Sedation on Breathing Pattern Variability in Rats. American Thoracic Society Annual Conference 2010, New Orleans, Louisiana, USA, *Am. J. Respir. Crit. Care Med.*, May 2010; 181: A3712.
31. Dhingra, RR, Baekey, DM, Hsieh, Y, **Jacono, FJ**, Dick, TE. Blockade of dorsolateral pontine 5HT1A receptors destabilizes the respiratory rhythm in wild-type mice. Program No. 298.15. Society for Neuroscience 2010 International Conference, San Diego, CA, USA.
32. Knoch, MF, Balaji, R, Nethery, DE, Campanaro, C, Baekey, DM, Dick, TE, **Jacono, FJ**. Biologically Variable Ventilation Limits Acute Lung Injury Following Acid Aspiration in Rats. Abstract #15697, American Thoracic Society 2011 International Conference, Denver, CO, USA, *Am. J. Respir. Crit. Care Med.*, May 2011; 183(1): A5281.
33. Hsieh, Y, **Jacono, FJ**, Dick, TE. Cardio-respiratory Coupling is Negligible in a Rodent Septic-Model. Experimental Biology 2012 International Conference, San Diego, California, USA.
34. Xu, K, **Jacono, FJ**, Dick, TE. Ventilatory pattern variability is associated with long-term recovery following cardiac arrest and resuscitation in rats. Experimental Biology 2012, San Diego, CA, USA.
35. Campanaro, CK, Darrah, RJ, Dick, TE, Drumm, ML, **Jacono, FJ**. Cystic fibrosis mice display different breathing patterns than non-CF mice. Experimental Biology 2012 International Conference, San Diego, California, USA.
36. Zaylor, AR, Dick, TE, Hsieh, Y, **Jacono, FJ**. Changes in central respiratory patterns and activity following acute lung injury. Experimental Biology 2012 International Conference, San Diego, California, USA.
37. Knoch, MF, Thungton, A, Loparo, KA, Dick, TE, **Jacono, FJ**. Comparison of the effect of Biologically Variable Ventilation (BVV) and Continuous Mechanical Ventilation (CMV) after lung injury on heart rate variability (HRV) in rats. American Thoracic Society 2012 International Conference, San Francisco, CA, USA.
38. The Use of Heart Rate Variability for the Early Detection of Treatable Complications After Subarachnoid Hemorrhage. Park, S, Kaffashi, F, Loparo, KA, **Jacono, FJ**. Neurocritical Care Society 2012 Annual Meeting, Denver, CO, USA.
39. Robilotto, T, **Jacono, FJ**. Interdisciplinary collaboration enhances learner experience during acute care simulation team training. International Mtg. on Simulation in Healthcare 2013, Orlando, FL, USA.
40. Xu, K, Kuang, Y, **Jacono, FJ**, Dick, TE, LaManna, JC. Acute Ventilatory Pattern Variability Predicts Long-term Survival following Cardiac Arrest and Resuscitation in Rats. Experimental Biology 2013 International Conference, Boston, MA, USA.
41. Hsieh, Y, Nethery, D, **Jacono, FJ**, Dick, TE. Central Expression of IL-1beta and Cardioventilatory Uncoupling in a Rodent Septic Model. Experimental Biology 2013 International Conference, Boston, MA, USA (Selected for oral presentation).
42. Getsy, P, Hsieh, Y, Litvin, D, Nethery, D, Wilson, CG, **Jacono, FJ**. Acute Lung Injury Alters Synaptic Drive to Nucleus Tractus Solitarius Neurons. Experimental Biology 2013, Boston, MA, USA.

Selected Abstracts (continued)

43. Kayanja, H, Curry, A, Hejal, R, **Jacono, FJ**, Silver, RS, Dasenbrook, EC. COPD Outcomes Among Cleveland Veteran Administration Patients: A 13-Year Cohort Study. American Thoracic Society 2013 International Conference, Philadelphia, PA, USA.
44. Hsieh, Y, Zaylor, AR, Nethery, D, Dick, TE, **Jacono, FJ**. Acute Lung Injury Alters Central Respiratory Pattern and Activity Independent of Pulmonary Feedback. American Thoracic Society 2013 International Conference, Philadelphia, PA, USA (Selected for oral presentation).
45. Dick, TE, Hsieh, Y, Litvin, D, Nethery, D, Zhu, Y, Galan, RF, Getsy, P, Wilson, CG, Loparo, KA, **Jacono, FJ**. Development of brainstem inflammation correlates with uncoupling of the cardiorespiratory system in an endotoxemic rodent model. International Conference for Complex Acute Illness 2013, Budapest, Hungary (selected for oral presentation).
46. Litvin, D, Getsy, P, Hsieh, Y, Nethery, D, Wilson, CG, **Jacono, FJ**. Pro-inflammatory cytokine expression and acute neuronal injury in the nTS following bleomycin-induced lung-injury. Society for Neuroscience 2013 International Conference, San Diego, CA, USA.
46. Manochakian, R, Smith, J, Watts, B, Mervar, S, Whittlesey, **Jacono, FJ**, Jesberger, B, Ludin, A, Fox, D, Curry, S, Eiseman, M, Arfons, L. Improving Veteran Access to Lung Cancer Care (IVALuCancerCare) at the Louis Stokes Veteran Affairs Medical Center (LSVAMC). Association of VA Hematology/Oncology 2013 Annual Meeting, Atlanta, GA, USA.
47. Denstaedt, SJ, Litvin, D, Hsieh, Y, Nethery, D, Dick, TE, Wilson, CG, **Jacono, FJ**. Increased Brainstem Expression of IL-1 β Persists Seven Days after Lung Injury in Rats. American College of Chest Physicians 2013 International Conference, Chicago, IL, USA.
48. Hsieh, Y, Nethery, D, **Jacono, FJ**, Dick, TE. IL-1beta Microinjections into the nucleus Tractus Solitarius (nTS) in Rodents Alter Cardiorespiratory Patterning Consistent with Endotoxemia. Experimental Biology 2014 International Conference, San Diego, CA, USA (Accepted).
49. Hsieh, Y, Nethery, D, Dick, TE, **Jacono, FJ**. IL-1beta microinjection into the nucleus Tractus Solitarius (nTS) alters ventilatory pattern variability (VPV) similar to Acute Lung Injury. American Thoracic Society 2014 International Conference, San Diego, CA, USA (Accepted).

Formally Supervised Trainees

- 2007 Mariana Palácios (Amherst College Undergraduate Student)
Role: Research Mentor as part of Case SOM Heart, Lung and Blood Summer Research Program; Project: Nonlinear analysis of breathing patterns in development of acute and chronic lung injury
Current Position: Medical Student, Baylor College of Medicine
- 2007-2008 Lamia Ibrahim, MD (Pulmonary & Critical Care Medicine Fellow)
Role: Research Advisor; Project: Heritability of Abnormalities in Cardiopulmonary Coupling in Sleep Apnea: Use of an Electrocardiogram-based Technique
Current Position: Assistant Professor, CWRU School of Medicine and UHCMC
- 2007-2008 Chadi Bou Serhal, MD (Pulmonary & Critical Care Medicine Fellow)
Role: Research Advisor; Project: Constant Daily Hypoxia Leads to Different Degrees of Pulmonary Hypertension in Two Different Rat Strains
Current Position: Private Practice, Canton, OH
- 2008-2009 Anita Pawar (Ph.D. Student, Physiology and biophysics)
Role: Research Advisor; Project: Comparative analysis of neonatal and adult rat carotid body responses to chronic intermittent hypoxia
Current Position: Industry Scientist, India
- 2008-2010 Augustine Chung, MD (Case School of Medicine Student - 4th year research project)
Role: Research Mentor for MD thesis; Project: Effect of Anesthesia on Breathing Pattern Variability in Rats
Current Position: Chief Medical Resident, New York Presbyterian Hospital affiliated with Weill Cornell Medical College
- 2008-2010 Ben Young, MD (Pulmonary & Critical Care Medicine Fellow)
Role: Research Mentor; Project: Breathing Pattern Variability as a Biomarker for Severity of Acute Lung Injury in Rats
Current Position: Assistant Professor, CWRU School of Medicine and CCF
- 2008-2011 Ravishankar Balagi, BTech (Masters Student, Electrical Engineering & Computer Sci.)
Role: Research Mentor; Project: Development and Optimization of Computer-controlled Biologically Variable Ventilation
Current Position: Industry Engineer, Intel Corporation, California, USA
- 2010-2012 Matt Knoch, MD (Pulmonary, Critical Care & Sleep Medicine Fellow)
Role: Research Mentor; Project: Impact of Biologically Variable Ventilation on Acute Lung Injury in Rats
Current Position: Private Practice, Canton, OH
- 2011-current Yee-Hsee Hsieh, PhD (Pulmonary, Critical Care & Sleep Medicine Fellow)
Role: Research Mentor; Project: Central Neural Control of Breathing Following Acute Lung Injury in Rats
Current Position: Post-doctoral sleep research fellow, CWRU T32
- 2012-current Scott Denstaedt, MD (Internal Medicine Resident)
Role: Research Mentor; Project: Central Neural Inflammation Following Acute Lung Injury in Rats
Current Position: Second Year Internal Medicine Resident, UHCMC/VA/CWRU

Scientific & Educational Presentations

National/International Contributions

- 2008 Facilitator, Session: *Control of Breathing and Ventilation*
American Thoracic Society 2008 International Conference, San Francisco, CA, USA
- 2008 Invited lecture: *Critical Care Bioinformatics: Conceptual Goals*
Critical Care Bioinformatics Workshop, Neurocritical Care & Stroke Conference,
Cleveland, OH, USA, 9/08
- 2009 Invited lecture: *Variability Analysis in the ICU: From Bench to Bedside*
Critical Care Bioinformatics Workshop, Neurocritical Care & Stroke Conference,
Cleveland, OH, USA, 9/09
- 2010 Invited lecture: *Variability Analysis in Preclinical Models of Human Disease*
Critical Care Bioinformatics Workshop, Neurocritical Care 2010 Conference, Cleveland,
OH, USA, 10/10
- 2011 Invited lecture: *Lung and Brainstem Cytokine Levels in Early Acute Lung Injury*
Respiratory Physiology Symposium, Joint meeting: Department of Neonatology
(CWRU) and University of Wisconsin, 2/11
- 2011 Invited lecture: *Respiratory Phenotyping a Mouse Model of Cystic Fibrosis*
Cystic Fibrosis Advanced Center Grant (NIH P30 DK27651) External Advisory Board
Meeting, 3/11
- 2011 Facilitator, Session: *Control of Breathing and Respiratory Muscles*
American Thoracic Society 2011 International Conference, Denver, CO, USA
- 2011 Invited lecture: *The Long Run: Forecasting Physiology in the ICU*
Critical Care Bioinformatics Workshop, Neurocritical Care 2011 Conference, Cleveland,
OH, USA, 10/11
- 2011 Facilitator, Session: *Data Acquisition and Analysis in Critical Care*
Neurocritical Care 2011 Conference, Cleveland, OH, USA
- 2011 Visiting Professor: *Ventilatory Pattern Variability in Health and Disease*
Johns Hopkins Sleep Disorders Center, Baltimore, MD, USA, 11/11
- 2012 Co-chair, Featured Topic Session: *Respiratory Pattern Variability: Insights into
Respiratory Control Mechanisms in Health and Disease*, Experimental Biology 2012
International Conference, San Diego, CA, USA, 4/12
- 2012 Invited lecture: *Is respiratory variability diagnostic?*
Featured Topic: Respiratory Pattern Variability: Insights into Respiratory Control
Mechanisms in Health and Disease, Experimental Biology 2012 International
Conference, San Diego, CA, USA, 4/12
- 2012 Facilitator, Session: *Sleep Disordered Breathing: Pathophysiology*
ATS 2012 International Conference, San Francisco, CA, USA, 5/12
- 2012 Visiting Professor: *Clinical Implications of Ventilatory Pattern Variability*
Harvard Medical School, Boston, MA, USA, 6/12

Scientific & Educational Presentations (continued)

National/International Contributions (continued)

- 2012 Visiting Professor: *Approaches for Quantifying Physiologic Variability*
University of Pittsburgh Medical Center, Pittsburgh, PA, USA, 6/12
- 2012 Invited Participant: *Model-based approaches for improved diagnostic and therapeutic strategies for sleep-related breathing disorders: Current and Future Directions*
Focused Study Group sponsored by the USC Biomedical Simulations Resource
Boston, MA, USA (Moderator: Michael Khoo), 6/12
- 2012 Facilitator, Scientific Poster Session
International Conference on Complexity in Acute Illness 2012, Ottawa, Ontario, Canada, 9/12
- 2012 Invited lecture: *Insights into central mechanisms responsible for breathing pattern changes following acute lung injury*
Scientific Session: Mechanistic models *in vivo* and *in silico*
International Conference on Complex Acute Illness 2012, Ottawa, Ontario, Canada, 9/12
- 2013 Invited lecture: *Interdisciplinary Mock Codes and the Value of Debriefing*
Cardiopulmonary Resuscitation Community of Practice Educational Series
National LIVE Meeting Presentation, >120 participants, Contact Time: 1 hour, 1/13
- 2013 - current National Educational Series: *Managing Chronic Obstructive Pulmonary Disease*
VA Specialty Care Access Network (SCAN)-ECHO Initiative (2 meetings/month)
National Teleconference, 10 participants, Contact Time: 3.0 hours/month, started 3/13
Role: Director; Providing interactive, remote education and consultation support
- Introduction to COPD, 3/13
 - Essentials of PFT Interpretation, 3/13
 - Dyspnea, 4/13
 - Asthma, 4/13
 - Weight Loss in COPD, 5/13
 - Chronic Cough, 5/13
 - End-stage COPD management, 6/13
 - Lung Imaging, 7/13
 - Pharmacologic Options in COPD, 7/13
 - Interstitial Lung Diseases, 8/13
 - PFT practice session, 9/13
 - Lung Mass, 10/13
 - Pulmonary Hypertension, 11/13
 - Sleep Disorders in the Primary Care Setting, 11/13
 - Home Oxygen, 12/13
 - Smoking Cessation, 1/14
- 2013 Oral Presentation: *Central Expression of IL-1 β and Cardio-Ventilatory Uncoupling in a Rodent Septic Model*
Session: Inflammation and Cardiorespiratory Control
Experimental Biology 2013 International Conference, Boston, MA, USA, 4/13

Scientific & Educational Presentations (continued)

National/International Contributions (continued)

- 2013 Oral Presentation: *Acute Lung Injury Alters Central Respiratory Pattern and Activity Independent of Pulmonary Feedback*
Mini-Symposium: Ventilatory Control: From Bench to Bedside
American Thoracic Society 2013 International Conference, Philadelphia, PA, USA, 5/13
- 2013 Visiting Professor: *Ventilatory Pattern Variability Following Acute Lung Injury: Insights into Central Mechanisms and Clinical Implications*
Mayo Clinic, Dept. of Physiology & Biomedical Eng., Rochester, MN, USA, 10/13

Regional Contributions

- 2004 *Out-of-Hospital Emergencies and Ohio's Good Samaritan Law*
Cleveland City Wide Chest Conference, Contact time: 0.4 hours, 9/04
- 2004 *Medical Innovation: A Long and Winding Road*
Encore Campus Class – Cuyahoga Community College, Contact time: 1 hour, 11/04
- 2008 *Perioperative Pulmonary Care*
Annual Cleveland Citywide Resident Perioperative Medical Consultation Conference
~100 residents, Contact time: 0.5 hours, 5/08
- 2009 *Perioperative Pulmonary Care*
Annual Cleveland Citywide Resident Perioperative Medical Consultation Conference
~100 residents, Contact time: 0.5 hours, 5/09
- 2010 *Perioperative Pulmonary Care*
Annual Cleveland Citywide Resident Perioperative Medical Consultation Conference
~100 residents, Contact time: 0.5 hours, 5/10
- 2011 *Perioperative Pulmonary Care*
Annual Cleveland Citywide Resident Perioperative Medical Consultation Conference
~125 residents, Contact time: 0.5 hours, 5/11
- 2011 *Perioperative Pulmonary Care*
Annual Cleveland Citywide Resident Perioperative Medical Consultation Conference
~125 residents, Contact time: 0.5 hours, 5/11
- 2013 *Surviving Sepsis Campaign: International Guidelines for the Management of Severe Sepsis and Septic Shock*
Northeast Ohio Infectious Disease Roundtable, Hilton Garden Inn, Cleveland, OH, 5/13
- 2013 *Ventilatory Pattern Variability Following Acute Lung Injury: Insights into Central Mechanisms and Clinical Implications*
Department of Physiology and Biophysics Seminar Series, CWRU, 9/13

Scientific & Educational Presentations (continued)

Local Contributions

Continuing Medical Education Courses:

- 2004 *Control of Breathing in Lung Injury: Carotid Body as a Sensor of Inflammation*
Pulmonary Research Conference, UHCCM, Contact time: 1 hour, 12/04
- 2005 *Impact of Lung Injury on Control of Breathing: Carotid Body and Inflammation*
Pulmonary Grand Rounds, UHCCM, Contact time: 1 hour, 6/05
- 2005 *Diagnosis and Treatment of Severe Sepsis*
DOM Morbidity & Mortality Conference, UHCCM, Contact time: 1 hour, 10/05
- 2006 *Oxygen Sensing*
Pulmonary Grand Rounds, UHCCM, Contact time: 1 hour, 3/06
- 2006 *Pulmonary Involvement in Wegner's Granulomatosis*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 7/06
- 2006 *Thoracentesis and Pneumothorax*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 8/06
- 2007 *Vena Caval Filters: When, Why, and for How Long?*
Department of Medicine Grand Rounds, UHCCM, Contact time: 1 hour, 1/07
- 2007 *Seeing the Forest and the Trees: Nonlinear Analysis of Breathing Pattern in Lung Injury*
Sleep Research Grand Rounds, UHCCM, Contact time: 1 hour, 3/07
- 2007 *Vena Caval Filters: A Primer for Pulmonologists*
Pulmonary Grand Rounds, UHCCM, Contact time: 1 hour, 4/07
- 2007 *Endobronchial Sarcoidosis and XDR-TB*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 12/07
- 2008 *Workup of hypoxia: Shunt physiology*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 3/08
- 2008 *Alpha-1 Antitrypsin Deficiency*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 9/08
- 2009 *Advances in Mechanical Ventilation: From Bench to Bedside*
Pulmonary Grand Rounds, UHCCM, Contact time: 1 hour, 2/09
- 2009 *Discussant of Unknown Case: Pleural Effusion from M. Tuberculosis Infection*
Dept. of Medicine: Clinicopathologic Conference, VAMC, Contact time: 1 hour, 8/09
- 2010 *Role of Rapid Response Teams in Preventing Cardiac Arrest*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 2/10
- 2010 *Building the ICU of the Future*
Pulmonary Grand Rounds, UHCCM, Contact time: 1 hour, 3/10
- 2010 *Pre-Operative Evaluation of Pulmonary Risk Factors*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 5/10

Scientific & Educational Presentations (continued)

Continuing Medical Education Courses (continued):

- 2011 *Chronic Thromboembolic Pulmonary Hypertension*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 1/11
- 2011 *Information and Liberation in the Intensive Care Unit*
Pulmonary Grand Rounds, UHCMC, Contact time: 1 hour, 24/11
- 2011 *Approach to DNR in the Intensive Care Unit*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 4/11
- 2011 *Discussant of Unknown Case: A Curious Case of Cough*
Dept. of Medicine: Clinicopathologic Conference, UHCMC, Contact time: 1 hour, 5/11
- 2011 *Neutropenic Enterocolitis in the ICU*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 8/11
- 2011 *Care of Complicated Patients and Interactions with their Social Support Systems*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 10/11
- 2011 *Tele-ICU and Beyond: Building the Intensive Care Unit of the Future?*
Department of Medicine Grand Rounds, UHCMC, Contact time: 1 hour, 11/11
- 2012 *Lung Cancer Screening with Low Dose Computed Tomography*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 1/12
- 2012 *Approach to the Poisoned Patient*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 6/12
- 2012 *Variability in Acute Illness: From Mechanisms to Application*
Pulmonary Grand Rounds, UHCMC, Contact time: 1 hour, 9/12
- 2012 *Identifying the cause of unknown hypoxemia: Shunt physiology*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 12/12
- 2013 *Ventilatory Pattern Changes Following Lung Injury: Brainstem Inflammation and Early Diagnosis of ARDS*
Department of Medicine 2013 Research Day, UHCMC, 5/13
- 2013 *Management of Thrombocytopenia in the Intensive Care Unit*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 8/13
- 2013 *Lung Cancer Recurrence Following Cyberknife Therapy*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 10/13
- 2013 *ANCA-Associated Vasculitis and Alveolar Hemorrhage*
DOM Morbidity & Mortality Conference, VAMC, Contact time: 1 hour, 11/13
- 2014 *Management of Alveolar Hemorrhage Syndrome*
DOM Morbidity & Mortality Conference, UHCMC, Contact time: 1 hour, 1/14

Scientific & Educational Presentations (continued)

Medical Students:

- 2005-2006 *Case School of Medicine Year 2 Core Curriculum – Homeostasis II*
Lecturer & Small Group Case Conference Leader
12 contact hours/yr – 15-18 students
- 2005 & 2010 *Case School of Medicine Year I Medical Student Lecture Series*
Pulmonary Physical Exam & Pulmonary Section Review
2 contact hours, ~100 medical students
- 2005-2010 *Director, Perioperative Medicine and Pain Advanced Core at the UH/VA site*
Responsible for administrative oversight of the educational activities of third and fourth year medical students (~4 each month)
- 2006 Pathology & Pathophysiology of Bacterial Pneumonia
Homeostasis II Medical Student Lecture Series
1 contact hour, ~100 medical students
- 2006-current *Case School of Medicine Year 3 - Basic Core Block I*
Topic: Asthma, COPD & PFTs
6-10 separate 1-hour lectures/year – 10-15 medical students/lecture
- 2007-current *Case School of Medicine (SOM) Year 1 Clinical Immersion*
Group Leader – Asthma, COPD & ARDS
12 contact hours/year – 15-18 students

Graduate Students:

- 2006 *PHYS 500 Translational Cell Physiology: Pathophysiology of Breathing Disorders*
Lecture series to systems physiology graduate students
3 contact hours, 6 students
- 2012 *PHOL 481 Pulmonary Pathophysiology: Clinical Correlations*
Graduate Medical Physiology class
2 contact hours, 85 students, 11/12

Residents and Fellows:

- 2004-current *Clinic Preceptor, Division of Pulmonary, CC, & Sleep Medicine Fellows*
120 hours/yr, 8-10 pulmonary fellows/year
- 2004-current *Medical Intensive Care Unit and Pulmonary Consult Service*
100 hours/yr, 4 medicine residents and 2 pulmonary fellows/block
- 2004-2009 *Department of Medicine Resident Board Review Course*
Moderator of Pulmonary Section
5 contact hours/year, 8-12 medicine residents
- 2005-current *Co-Director, Division of Pulmonary/CCM Research Conference*
Responsible for administrative oversight and educational content of research conference
- 2008-current *Mock Code Program, VAMC in partnership with Nursing Education*
~12 mock codes/year with targeted education of BLS and ACLS, 0.5 contact hours/event
- 2005 *Paralysis and Sedation*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 7/05

Scientific & Educational Presentations (continued)

Residents and Fellows (continued):

- 2005 *Shock States and Pressors*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 7/05
- 2005 *Introduction to PFTs*
DOM Resident Noon Conference Series, UHCMC & VAMC, Contact time: 2 hours, 8/05
- 2005 *Community Acquired Pneumonia*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 8/05
- 2005 *Hitchhiker's Guide to the IACUC*
Pulmonary Research Conference, UHCMC, Contact time: 1 hour, 11/05
- 2006 *Ventilator Associated Pneumonia*
Pulmonary Fellow Seminar Series, UHCMC, Contact time: 1 hour, 3/06
- 2006 *Preparing your ATS presentation: A Primer for Fellows*
Pulmonary Research Conference, UHCMC, Contact time: 1 hour, 4/06
- 2006 *Paralysis and Sedation*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 7/06
- 2006 *Shock States and Pressors*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 7/06
- 2006 *Community Acquired Pneumonia*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 8/06
- 2006 *Introduction to PFTs*
DOM Resident Noon Conferences, UHCMC & VAMC, Contact time: 2 hours, 12/06
- 2006 *Hitchhiker's Guide to the IACUC*
Pulmonary Research Conference, UHCMC, Contact time: 1 hour, 12/06
- 2007 *Presenting your research at ATS*
Pulmonary Research Conference, UHCMC, Contact time: 1 hour, 5/07
- 2007 *Paralysis and Sedation*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 7/07
- 2007 *Shock States and Pressors*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 7/07
- 2007 *Pulmonary Function Testing*
DOM Resident Noon Conference Series, UHCMC, Contact time: 1 hour, 8/07
- 2007 *New ATS/IDSA Guidelines for managing CAP*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 8/07
- 2007 *Hitchhiker's Guide to the IACUC*
Pulmonary Research Conference, UHCMC, Contact time: 1 hour, 8/07

Scientific & Educational Presentations (continued)

Residents and Fellows (continued):

- 2008 *Hydrocortisone Therapy for Patients in Septic Shock*
DOM Resident Journal Club Series, UHCCMC, Contact time: 1 hour, 1/08
- 2008 *Ventilator Associated Pneumonia*
Pulmonary Fellow Seminar Series, UHCCMC, Contact time: 1 hour, 3/08
- 2008 *Preparing your ATS presentation: A Primer for Fellows*
Pulmonary Research Conference, UHCCMC, Contact time: 1 hour, 5/08
- 2008 *Paralysis and Sedation*
Pulmonary Fellow Summer Lecture Series, UHCCMC, Contact time: 1 hour, 7/08
- 2008 *Shock States and Pressors*
Pulmonary Fellow Summer Lecture Series, UHCCMC, Contact time: 1 hour, 7/08
- 2008 *Pulmonary Function Testing*
DOM Resident Noon Conference Series, UHCCMC, Contact time: 1 hour, 7/08
- 2008 *New ATS/IDSA Guidelines for managing CAP*
Pulmonary Fellow Summer Lecture Series, UHCCMC, Contact time: 1 hour, 8/08
- 2008 *Introduction to the IRB and IACUC*
Pulmonary Research Conference, UHCCMC, Contact time: 1 hour, 09/08
- 2009 *Vena Caval Filters: When, Why, and for How Long?*
DOM Resident Noon Conference Series, UHCCMC, Contact time: 1 hour, 1/09
- 2009 *Shock States and Pressors*
Pulmonary Fellow Summer Lecture Series, UHCCMC, Contact time: 1 hour, 7/09
- 2009 *ATS/IDSA Guidelines for managing CAP*
Pulmonary Fellow Summer Lecture Series, UHCCMC, Contact time: 1 hour, 8/09
- 2009 *Introduction to the IRB and IACUC*
Pulmonary Research Conference, UHCCMC, Contact time: 1 hour, 09/09
- 2009 *Pulmonary Function Testing*
DOM Resident Noon Conference Series, UHCCMC, Contact time: 1 hour, 11/09
- 2010 *Home Oxygen Therapy*
Combined Pulmonary/Sleep Fellows Conference, UHCCMC, Contact time: 1 hour, 2/010
- 2010 *The Human Lung - Did Evolution Get it Wrong*
Pulmonary Fellow Physiology Lecture Series, UHCCMC, Contact time: 1 hour, 2/10
- 2010 *Shock States and Pressors*
Pulmonary Fellow Summer Lecture Series, UHCCMC, Contact time: 1 hour, 7/10
- 2010 *Managing CAP*
Pulmonary Fellow Summer Lecture Series, UHCCMC, Contact time: 1 hour, 8/10
- 2010 *Introduction to the IRB and IACUC*
Pulmonary Research Conference, UHCCMC, Contact time: 1 hour, 09/10

Scientific & Educational Presentations (continued)

Residents and Fellows (continued):

- 2010 *Pulmonary Function Testing*
DOM Resident Noon Conference Series, UHCMC, Contact time: 1 hour, 11/10
- 2011 *Ventilation and Lung Volumes: Part I*
Pulmonary Fellow Physiology Lecture Series, UHCMC, Contact time: 1 hour, 2/11
- 2011 *Shock States and Pressors*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 7/11
- 2011 *Managing CAP*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 7/11
- 2011 *Ventilation and Lung Volumes: Part II*
Pulmonary Fellow Physiology Lecture Series, UHCMC, Contact time: 1 hour, 8/11
- 2011 *Diffusion*
Pulmonary Fellow Physiology Lecture Series, UHCMC, Contact time: 1 hour, 10/11
- 2012 *Pulmonary Blood Flow*
Pulmonary Fellow Physiology Lecture Series, UHCMC, Contact time: 1 hour, 1/12
- 2012 *Ventilatory Pattern Variability in Lung Disease*
Pediatric CF Seminar, Case School of Medicine, Contact time: 1 hour, 2/12
- 2012 *Introduction to Mechanical Ventilation*
DOM Resident Noon Conference Series, VAMC, Contact time: 1 hour, 3/12
- 2012 *Ventilation-Perfusion Relationships*
Pulmonary Fellow Physiology Lecture Series, UHCMC, Contact time: 1 hour, 5/12
- 2012 *Community Acquired Pneumonia*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 7/12
- 2012 *Shock States and Vasopressors*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 8/12
- 2012 *Nuts and Bolts of Case Presentations for Fellows*
Pulmonary Research Conference, UHCMC, Contact time: 0.5 hour, 09/12
- 2012 *Ventilation and Lung Volumes*
Pulmonary Fellow Physiology Lecture Series, UHCMC, Contact time: 1 hour, 9/12
- 2012 *Pulmonary Function Testing*
Sleep Medicine Didactic Series, UHCMC & MHMC, Contact time: 1 hour, 10/12
- 2012 *Opportunities, Procedures & Overview of writing a grant*
Pulmonary Research Conference, UHCMC, Contact time: 1 hour, 11/12
- 2012 *Introduction to the IRB and IACUC*
Pulmonary Research Conference, UHCMC, Contact time: 1 hour, 11/12

Scientific & Educational Presentations (continued)

Residents and Fellows (continued):

- 2013 *High Frequency Oscillatory Ventilation in ARDS*
DOM Resident Journal Club Series, UHCMC, Contact time: 1 hour, 3/13
- 2013 *Chest Wall and Airway Mechanics*
Pulmonary Fellow Physiology Lecture Series, UHCMC, Contact time: 1 hour, 3/13
- 2013 *Control of Ventilation*
Pulmonary Fellow Physiology Lecture Series, UHCMC, Contact time: 1 hour, 4/13
- 2013 *Mechanics of Breathing*
Pulmonary Fellow Physiology Lecture Series, UHCMC, Contact time: 1 hour, 5/13
- 2013 *Shock States and Pressors*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 8/13
- 2013 *Community Acquired Pneumonia*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 8/13
- 2013 *Thoracic Oncology*
Pulmonary Fellow Summer Lecture Series, UHCMC, Contact time: 1 hour, 8/13
- 2013 *Pulmonary Function Testing*
DOM Resident Morning Conference Series, VAMC, Contact time: 1 hour, 9/13
- 2013 *Physician-Scientist Career Path*
Peter Agre Society Annual Lecture Series, DOM HCMC, Contact time: 1 hour, 11/13
- 2014 *Blood Flow*
Pulmonary Fellow Physiology Lecture Series, UHCMC, Contact time: 1 hour, 1/14