

CURRICULUM VITAE

Naresh M. Punjabi, M.D., Ph.D.

DEMOGRAPHIC INFORMATION

Current Appointments:

University:

- 2010 – Present Professor of Medicine, Department of Medicine
Johns Hopkins University School of Medicine
- Professor of Epidemiology (Joint Appointment)
Johns Hopkins University Bloomberg School of Public Health
- 2013 – Present Associate Director, Graduate Training Program in Clinical Investigation
Johns Hopkins University Bloomberg School of Public Health and School of Medicine

Hospital:

- 1999 – Present Staff Physician, Full Time
Johns Hopkins Hospital and Johns Hopkins Bayview Medical Center

Personal Data:

Business Address:

Division of Pulmonary and Critical Care Medicine
Johns Hopkins Asthma and Allergy Center
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Education and Training:

Undergraduate

- 1987 B.S. Northwestern University, Evanston, IL.
School of Engineering and Applied Science
Biomedical Engineering, Graduated with Honors

Doctoral / Graduate

- 1991 M.D. University of Chicago Pritzker School of Medicine, Chicago, IL.
2001 Ph.D. Graduate Training Program in Clinical Investigation
Johns Hopkins University, Bloomberg School of Public Health

Postdoctoral Training

- 1991 – 1992 Internship Johns Hopkins University School of Medicine, Baltimore, MD.
Department of Medicine (Osler Medical Service)
- 1992 – 1994 Residency Johns Hopkins University School of Medicine, Baltimore, MD.
Department of Medicine (Osler Medical Service)
- 1995 – 1999 Fellowship Division of Pulmonary and Critical Care Medicine
The Johns Hopkins University School of Medicine, Baltimore, MD.

Professional Experience:

- 1994 – 1995 Primary Care Physician and Part-Time Faculty (Instructor)
Johns Hopkins Medical Services Corporation, Baltimore, MD.
- 1999 – 2000 Instructor, Department of Medicine (Division of Pulmonary and Critical Care)
Johns Hopkins University School of Medicine, Baltimore, MD
- 2000 – 2004 Assistant Professor, Departments of Medicine and Epidemiology
Johns Hopkins University, Baltimore, MD
- 2005 – 2010 Associate Professor, Department of Medicine and Epidemiology
Division of Pulmonary and Critical Care
Johns Hopkins University School of Medicine, Baltimore, MD
- 2010 – Present Professor, Department of Medicine and Epidemiology (Joint Appointment)
Division of Pulmonary and Critical Care
Johns Hopkins University School of Medicine, Baltimore, MD

RESEARCH ACTIVITIES:

Peer-Reviewed Original Science Publications:

1. Hershenson MB, Aghili S, **Punjabi NM**, Hernandez C, Ray DW, Garland A, Glagov S, and Solway J. Hyperoxia-induced airway hyperresponsiveness and remodeling in immature rats. *Am J Physiol* 1992; 262 (*Lung Cell. Mol. Physiol.* 6); L263-269.
2. Gaver DP, Solway J, **Punjabi NM**, Elad D, Grotberg JH, and Gavriely N. Gas dispersion in volume-cycled tube flow part II: tracer bolus experiments. *J Appl Physiol* 1992; 72(1): 321-331.
3. Hershenson MB, Wylam ME, **Punjabi NM**, Umans JG, Schumaker PT, Mitchell RW, and Solway J. Exposure to immature rats to hyperoxia increases tracheal smooth muscle stress generation in vitro. *J Appl Physiol* 1994; 76(2): 743-749.
4. **Punjabi NM**, Shade D, Wise RA. Correction of single-breath helium lung volumes in patients with airflow obstruction. *Chest* 1998; 114: 907-918.
5. **Punjabi NM**, O'Hearn DJ, Schwartz AR, Smith PL, Bandeen-Roche KJ. Modeling Hypersomnolence in Obstructive Sleep Apnea: A Novel Approach using Survival Analysis. *Am J Resp Crit Care Med* 1999; 159: 1703-1709.
6. **Punjabi NM**. Analysis of Failure Time Data: An Introduction of Survival Analysis. *Resp Care* 1999; 44(10): 1198-1202.
7. **Punjabi NM**, Welch D, Strohl KP. Sleep disorders in regional sleep centers: A national cooperative study. *Sleep* 2000; 23(4): 471-80.
8. Boudewyns A, **Punjabi NM**, Van de Heyning P, De Backer W, O'Donnell CP, Schneider H, Smith PL, Schwartz AR. An abbreviated method for assessing upper airway function in obstructive sleep apnea. *Chest* 2000; 118(4): 1031-1041.
9. **Punjabi NM**, Sorkin JD, Katznel KI, Goldberg AP, Schwartz AR, Smith PL. Sleep-disordered breathing and insulin resistance in middle-aged and overweight men. *Am J Resp Crit Care Med* 2002; 165: 677-682.

10. **Punjabi NM**, Bandeen-Roche K, Marx JJ, Neubauer DN, Smith PL, Schwartz AR. The association between daytime sleepiness and sleep-disordered breathing in NREM and REM sleep. *Sleep* 2002; 25(3): 1-9.
11. Rose P, **Punjabi NM**, Pearse D. Treatment of right heart thromboemboli. *Chest* 2002; 121: 806-814.
12. Sanders MH, Newman AB, Haggerty CL, Redline S, Lebowitz M, Samet J, O'Connor GT, **Punjabi NM**, Shahar E. Sleep and sleep-disordered breathing in adults with predominantly mild obstructive airway disease. *Am J Respir Crit Care Med* 2003; 167(1): 7-14.
13. Resnick HE, Redline S, Shahar E, Gilpin A, Newman A, Walter R, Ewy GA, Howard BV, **Punjabi NM**. Diabetes and sleep disturbances: findings from the Sleep Heart Health Study. *Diabetes Care* 2003; 26(3): 702-709.
14. **Punjabi NM**, Shade D, Patel A, Wise RA. Measurement variability in single breathing diffusing capacity of the lung. *Chest* 2003; 123(4): 1082-1089.
15. **Punjabi NM**, Ahmed MM, Polotsky VY, Beamer BA, O'Donnell CP. Sleep-disordered Breathing and Insulin Resistance. *Respir Physiol Neurobiol.* 2003; 136(2-3): 167-78.
16. Polotsky VY, Li J, **Punjabi NM**, Rubin AE, Smith PL, Schwartz AR, O'Donnell CP. Intermittent hypoxia increases insulin resistance in genetically obese mice. *J Physiol.* 2003; 552 (Pt 1): 253-64.
17. **Punjabi NM**, Bandeen-Roche K, Young TB. Predictors of objective sleep tendency in the general population. *Sleep* 2003; 26(6): 678-683.
18. Boland LL, Shahar E, Wong TY, Klein R, **Punjabi NM**, Robbins JA, Newman AB. Is sleep-disordered breathing associated with the presence of retinal microvascular abnormalities? *Sleep* 2004; 27(3): 467-73.
19. Patil S, **Punjabi NM**, Schneider H, O' Donnell CP, Smith PL, Schwartz AR. A simplified method for measuring critical pressures during sleep in the clinical setting. *Am J Respir Crit Care Med* 2004; 170(1): 86-93.
20. Breugelmans JG, Ford DE, Smith PL, **Punjabi NM**. Differences in patient and bed-partner assessed quality of life in sleep-disordered breathing. *Am J Respir Crit Care Med* 2004; 170 (5):547-52.
21. **Punjabi NM**, Shahar E, Redline S, Gottlieb DJ, Givelber R, Resnick HE. Sleep-disordered breathing, glucose intolerance, and insulin resistance: The Sleep Heart Health Study. *Am J Epidemiol* 2004; 160(6): 521-30.
22. **Punjabi NM**, Polotsky VY. Disorders of glucose metabolism in sleep apnea. *J Appl Physiol* 2005; 99(5): 1998-2007.
23. Simpson CF, **Punjabi NM**, Wolfenden L, Shardell M, Shade DM, Fried LP. Relationship between lung function and physical performance. *J Gerontol A Biol Sci Med Sci.* 2005; 60(3): 350-4.
24. Gottlieb, DJ, **Punjabi NM**, Newman AB, Resnick HE, Redline S, Baldwin CM, Nieto FJ. Association of sleep time is associated with diabetes mellitus and impaired glucose tolerance. *Arch Intern Med* 2005; 165(8): 863-7.
25. Yeh HC, **Punjabi NM**, Wang NY, Pankow JS, Duncan BB, Brancati FL. Vital capacity as a predictor of incident type 2 diabetes: the Atherosclerosis Risk in Communities study. *Diabetes Care.* 2005; 28(6): 1472-9.
26. Schanen JG, Iribarren C, Shahar E, **Punjabi NM**, Rich SS, Sorlie PD, Folsom AR. Asthma and incident cardiovascular disease: the Atherosclerosis Risk in Communities Study. *Thorax* 2005; 60(8): 633-8.

27. Li J, Thorne LN, **Punjabi NM**, Sun CK, Schwartz AR, Smith PL, Marino RL, Rodriguez A, Hubbard WC, O'Donnell CP, Polotsky VY. Intermittent hypoxia induces hyperlipidemia in lean mice. *Circ Res* 2005; 97(7): 698-706.
28. Stierer T, **Punjabi NM**. Demographics and diagnosis of obstructive sleep apnea. *Anesthesiol Clin North America* 2005: 405-20.
29. Zhang L, Samet J, Caffo B, **Punjabi NM**. Cigarette smoking and nocturnal sleep architecture. *Am J Epidemiol* 2006; 164(6): 529-37.
30. Gottlieb DJ, Redline S, Nieto FJ, Baldwin CM, Newman AB, Resnick HE, **Punjabi NM**. Association of usual sleep duration with hypertension: the Sleep Heart Health Study. *Sleep* 2006; 29(8): 1009-14.
31. Unruh ML, Sanders MH, Redline S, Piraino BM, Umans JG, Hammond TC, Sharief I, **Punjabi NM**, Newman AB. Sleep apnea in patients on conventional thrice-weekly hemodialysis: comparison with matched controls from the Sleep Heart Health Study. *J Am Soc Nephrol* 2006; 17(12): 3503-9.
32. **Punjabi NM**, Beamer B. C-reactive protein is associated with sleep-disordered breathing independent of adiposity. *Sleep* 2007; 30(1): 29-34.
33. Aurora RN and **Punjabi NM**. Sleep apnea and metabolic dysfunction: Cause or Co-relation. *Sleep Med Clin* 2007; 2(2): 237-250.
34. **Punjabi NM**, Beamer B, Jain A, Spencer ME, Fedarko N. Elevated Levels of neopterin in sleep-disordered breathing. *Chest* 2007; 132(4): 1124-30.
35. Wattanakit K, Boland L, **Punjabi NM**, Shahar E. Relation of sleep-disordered breathing to carotid plaque and intima-media thickness. *Atherosclerosis* 2008; 197(1): 125-31.
36. Zhang L, Samet J, Caffo B, Bankman I, **Punjabi NM**. Power Spectral Analysis of Electroencephalographic Activity during Sleep in Cigarette Smokers. *Chest* 2008; 133(2): 427-32.
37. Burke CK, Peirce JM, Kidorf MS, Neubauer D, **Punjabi NM**, Stoller KB, Hursh S, Brooner RK. Sleep problems reported by patients entering opioid agonist treatment. *J Subst Abuse Treat* 2008; 35(3): 328-33.
38. Yeh HC, **Punjabi NM**, Wang NY, Pankow JS, Duncan BB, Cox CE, Selvin E, Brancati FL. Cross-Sectional and Prospective Study of Lung Function in Adults with Type 2 Diabetes Mellitus: The Atherosclerosis Risk in Communities (ARIC) Study. *Diabetes Care* 2008; 31(4): 741-6
39. Seicean S, Kirchner HL, Gottlieb DJ, **Punjabi NM**, Resnick H, Sanders M, Budhiraja R, Singer M, Redline S. Sleep-disordered Breathing and impaired glucose metabolism in normal weight and overweight/obese Individuals: The Sleep Heart Health Study. *Diabetes Care* 2008 31(5):1001-6
40. **Punjabi NM**, Newman A, Young T, Resnick HE, Sanders M. Sleep-disordered Breathing and Cardiovascular Disease: An Outcome-based Definition of Hypopneas. *Am J Respir Crit Care Med* 2008; 177(10): 1150-5.
41. Kirkness JP, Schwartz AR, Schneider H, **Punjabi NM**, Maly JJ, Laffan AM, McGinley BM, Magnuson T, Schweitzer M, Smith PL, Patil SP. Contribution of male sex, age, and obesity to mechanical instability of the upper airway during sleep. *J Appl Physiol* 2008; 104(6): 1618-24.

42. Shaw JE, **Punjabi NM**, Wilding JP, Alberti KG, Zimmet PZ; International Diabetes Federation Taskforce on Epidemiology and Prevention. Sleep-disordered breathing and type 2 diabetes: a report from the International Diabetes Federation Taskforce on Epidemiology and Prevention. *Diabetes Res Clin Pract* 2008; 81(1): 2-12.
43. Unruh ML, Sanders MH, Redline S, Piraino BM, Umans JG, Chami H, Budhiraja R, **Punjabi NM**, Buysse D, Newman AB. Subjective and objective sleep quality in patients on conventional thrice-weekly hemodialysis: comparison with matched controls from the sleep heart health study. *Am J Kidney Dis* 2008; 52(2): 305-13.
44. Stamatakis K, Sanders MH, Caffo B, Resnick HE, Gottlieb DJ, Mehra R, **Punjabi NM**. Fasting glycemia in sleep disordered breathing: lowering the threshold on oxyhemoglobin desaturation. *Sleep* 2008; 31(7): 1018-24.
45. Swihart BJ, Caffo B, Bandeen-Roche K, **Punjabi NM**. Characterizing sleep structure using the hypnogram. *J Clin Sleep Med* 2008; 4(4): 349-55.
46. **Punjabi NM**. The epidemiology of adult obstructive sleep apnea. *Proc Am Thorac Soc* 2008; 5(2): 136-43.
47. **Punjabi NM**, Beamer BA. Alterations in Glucose Disposal in Sleep-disordered Breathing. *Am J Respir Crit Care Med* 2009; 179(3): 235-40.
48. Louis M, **Punjabi NM**. Effects of Acute Intermittent Hypoxia on Glucose Metabolism in Awake Health Volunteers. *J Appl Physiol* 2009;106(5):1538-44
49. Di C, Crainiceanu CM, Caffo BS, **Punjabi NM**. Multilevel Functional Principal Component Analysis. *The Annals of Applied Statistics*, 2009; 3(1): 458-488.
50. **Punjabi NM**, Caffo BS, Goodwin JL, Gottlieb DJ, Newman AB, O'Connor GT, Rapoport DM, Redline S, Resnick HE, Robbins JA, Shahar E, Unruh ML, Samet JM. Sleep-disordered breathing and mortality: a prospective cohort study. *PLoS Med*. 2009; 6(8): e1000132.
51. Gottlieb JD, Schwartz AR, Marshall J, Ouyang P, Kern L, Shetty V, Trois M, **Punjabi NM**, Brown C, Najjar SS, Gottlieb SS. Hypoxia, not the frequency of sleep apnea, induces acute hemodynamic stress in patients with chronic heart failure. *J Am Coll Cardiol*. 2009; 54(18): 1706-12.
52. Crainiceanu CM, Caffo BS, Di C, **Punjabi NM**. Nonparametric Signal Extraction and Measurement Error in the Analysis of Electroencephalographic Data. *J Am Stat Assoc* 2009; 104(486): 541-555.
53. Caffo BS, Swihart B, Laffan A, Crainiceanu CM, **Punjabi NM**. An Overview of Observational Sleep Research with Application to Sleep Transitioning. *Chance* 22 (1), 10-15, 2009.
54. Monahan K, Storer-Isser A, Mehra R, Shahar E, Mittleman M, Rottman J, **Punjabi N**, Sanders M, Quan SF, Resnick H, Redline S. Triggering of nocturnal arrhythmias by sleep-disordered breathing events. *J Am Coll Cardiol* 2009; 54(19): 1797-804.
55. **Punjabi NM**. Do sleep disorders and associated treatments impact glucose metabolism? *Drugs* 2009; 69 Suppl 2:13-27.
56. Budhiraja R, Quan SF, **Punjabi NM**, Drake CL, Dickman R, Fass R. Power spectral analysis of the sleep electroencephalogram in heartburn patients with or without gastroesophageal reflux disease: a feasibility study. *J Clin Gastroentero*. 2010; 44(2): 91-6.
57. Hancock DB, Eijgelsheim M, Wilk JB, Gharib SA, Loehr LR, Marcianti KD, Franceschini N, van Durme YM, Chen TH, Barr RG, Schabath MB, Couper DJ, Brusselle GG, Psaty BM, van Duijn CM, Rotter JI,

Uitterlinden AG, Hofman A, **Punjabi NM**, Rivadeneira F, Morrison AC, Enright PL, North KE, Heckbert SR, Lumley T, Stricker BH, O'Connor GT, London SJ. Meta-analyses of genome-wide association studies identify multiple loci associated with pulmonary function. *Nat Genet.* 2010; 42(1): 45-52.

58. Stamatakis KA, **Punjabi NM**. Effects of sleep fragmentation on glucose metabolism in normal subjects. *Chest* 2010; 137(1): 95-101.
59. Manconi M, Ferri R, Sagrada C, **Punjabi NM**, Tettamanzi E, Zucconi M, Oldani A, Castronovo V, Ferini-Strambi L. Measuring the error in sleep estimation in normal subjects and in patients with insomnia. *J Sleep Res* 2010; 19(3):478-86.
60. Ferri R, Drago V, Aricò D, Bruni O, Remington RW, Stamatakis K, **Punjabi NM**. The effects of experimental sleep fragmentation on cognitive processing. *Sleep Medicine.* 2010; 11(4):378-85
61. Chami AH, Baldwin CM, Silverman A, Zhang Y, Rapoport D, **Punjabi NM**, Gottlieb DJ. Sleepiness, Quality of Life and Sleep Maintenance in REM vs. NREM Sleep-Disordered Breathing. *Am J Respir Crit Care Med* 2010; 181(9):997-1002.
62. Redline S, Yenokyan G, Gottlieb DJ, Shahar E, O'Connor GT, Resnick HE, Diener-West M, Sanders MH, Wolf PA, Geraghty EM, Ali T, Lebowitz M, **Punjabi NM**. Obstructive Sleep Apnea Hypopnea and Incident Stroke: The Sleep Heart Health Study. *Am J Respir Crit Care Med* 2010; 182(2): 269-77.
63. Spencer ME, Jain A, Matteini A, Beamer BA, Wang NY, Leng SX, **Punjabi NM**, Walston JD, Fedarko NS. Serum Levels of the Immune Activation Marker Neopterin Change With Age and Gender and Are Modified by Race, BMI, and Percentage of Body Fat. *J Gerontol A Biol Sci Med Sci.* 2010; 65(8):858-65.
64. Gottlieb DJ, Yenokyan G, Newman AB, O'Connor GT, **Punjabi NM**, Quan SF, Redline S, Resnick HE, Tong EK, Diener-West M, Shahar E. Prospective study of obstructive sleep apnea and incident coronary heart disease and heart failure: the sleep heart health study. *Circulation* 2010; 122(4):352-60.
65. Swihart BJ, Caffo B, James BD, Strand M, Schwartz BS, **Punjabi NM**. Lasagna plots: a saucy alternative to spaghetti plots. *Epidemiology* 2010; 21(5):621-5.
66. Caffo B, Diener-West M, **Punjabi NM**, Samet J. A novel approach to prediction of mild sleep disorders in a population-based sample: the Sleep Heart Health Study. *Sleep* 2010; 33(12):1641-8.
67. Laffan A, Caffo B, Swihart B, and **Punjabi NM**. Utility of sleep stage transitions in assessing sleep continuity. *Sleep* 2010; 33(12):1681-6.
68. Liu Y, Patel S, Nibbe R, Maxwell S, Chowdhury SA, Koyuturk M, Zhu X, Larkin EK, Buxbaum SG, **Punjabi NM**, Gharib SA, Redline S, Chance MR. Systems biology analyses of gene expression and genome wide association study data in obstructive sleep apnea. *Pac Symp Biocomput.* 2011:14-25.
69. Crainiceanu CM, Caffo BS, Luo S, Zipunnikov V, **Punjabi NM**. Population value decomposition, a framework for the analysis of images. *Journal of the American Statistical Association* 2011; 106(495):775–790
70. Aurora RN, Caffo BS, Crainiceanu CM, **Punjabi NM**. Correlating Subjective and Objective Sleepiness: Revisiting the Association Using Survival Analysis. *Sleep* 2011; 34(12):1707-14.
71. Pogach MS, **Punjabi NM**, Thomas N, Thomas RJ. Electrocardiogram-based sleep spectrogram measures of sleep stability and glucose disposal in sleep disordered breathing. *Sleep* 2012; 35(1):139-48.

72. Swihart BJ, Caffo BS, Crainiceanu CM, **Punjabi NM**. Mixed effect Poisson log-linear models for clinical and epidemiological sleep hypnogram data. *Stat Med*. 2012; 31(9):855-70
73. Brown MA, Goodwin JL, Silva GE, Behari A, Newman AB, **Punjabi NM**, Resnick HE, Robbins JA, Quan SF. The Impact of Sleep-Disordered Breathing on Body Mass Index (BMI): The Sleep Heart Health Study (SHHS). *Southwest J Pulm Crit Care*. 2011; 3:159-168.
74. Aurora RN, Crainiceanu C, Caffo B, **Punjabi NM**. Sleep-disordered breathing and caffeine consumption: results of a community-based study. *Chest* 2012; 142(3):631-8.
75. Spira AP, Covinsky K, Rebok GW, **Punjabi NM**, Stone KL, Hillier TA, Ensrud KE, Yaffe K. Poor sleep quality and functional decline in older women. *J Am Geriatr Soc*. 2012; 60(6):1092-8
76. Kahn JM, Palmer SM, Spruit MA, **Punjabi NM**, Sutherland ER. Clinical year in review I: quality improvement for pulmonary and critical care medicine, lung transplantation, rehabilitation for pulmonary and critically ill patients, and sleep medicine. *Proc Am Thorac Soc*. 2012; 9(4):183-9.
77. Ferri R, Manconi M, Aricò D, **Punjabi NM**, Zucconi M. Experimentally induced arousals do not elicit periodic leg motor activity during sleep in normal subjects. *Sleep Med*. 2013; 14(1):85-90.
78. Seif F, Patel SR, Walia H, Rueschman M, Bhatt DL, Gottlieb DJ, Lewis EF, Patil SP, **Punjabi NM**, Babineau DC, Redline S, Mehra R. Association between obstructive sleep apnoea severity and endothelial dysfunction in an increased background of cardiovascular burden. *J Sleep Res*. 2013; 22(4):443-51.
79. Langrock R, Swihart BJ, Caffo BS, **Punjabi NM**, Crainiceanu CM. Combining hidden Markov models for comparing the dynamics of multiple sleep electroencephalograms. *Stat Med*. 2013.
80. Powell R, Davidson D, Divers J, Manichaikul A, Carr JJ, Detrano R, Hoffman EA, Jiang R, Kronmal RA, Liu K, **Punjabi NM**, Shahar E, Watson KE, Rotter JI, Taylor KD, Rich SS, Barr RG. Genetic ancestry and the relationship of cigarette smoking to lung function and per cent emphysema in four race/ethnic groups: a cross-sectional study. *Thorax*. 2013; 68(7):634-42.
81. Ramanathan R, Kohli A, Ingaramo MC, Jain A, Leng SX, **Punjabi NM**, Walston JD, Fedarko NS. Serum chitotriosidase, a putative marker of chronically activated macrophages, increases with normal aging. *J Gerontol A Biol Sci Med Sci*. 2013
82. Lane JM, Tare A, Cade BE, Chen TH, **Punjabi NM**, Gottlieb DJ, Scheer FA, Redline S, Saxena R. Common variants in CLOCK are not associated with measures of sleep duration in people of European ancestry from the sleep heart health study. *Biol Psychiatry* 2013; 74(12):e33-5
83. Polak J, Shimoda LA, Drager LF, Udem C, McHugh H, Polotsky VY, **Punjabi NM**. Intermittent hypoxia impairs glucose homeostasis in C57BL/6/J mice: partial improvement with cessation of the exposure. *Sleep* 2013; 36(10):1483-90;
84. Rao MN, Blackwell T, Redline S, **Punjabi NM**, Barrett-Connor E, Neylan TC, Stone KL; Osteoporotic Fractures in Men (MrOS) Study Group. Association between sleep duration and 24-hour urine free cortisol in the MrOS Sleep Study. *PLoS One*. 2013;8(9):e75205
85. Querejeta Roca G, Redline S, **Punjabi N**, Claggett B, Ballantyne CM, Solomon SD, Shah AM. Sleep apnea is associated with subclinical myocardial injury in the community. The ARIC-SHHS study. *Am J Respir Crit Care Med*. 2013; 188(12):1460-5.
86. Kudchadkar SR, Aljohani OA, **Punjabi NM**. Sleep of critically ill children in the pediatric intensive care unit: a systematic review. *Sleep Med Rev*. 2014; 18(2):103-10.

87. Tare A, Lane JM, Cade BE, Grant SF, Chen TH, **Punjabi NM**, Lauderdale DS, Zee PC, Gharib SA, Gottlieb DJ, Scheer FA, Redline S, Saxena R. Sleep duration does not mediate or modify association of common genetic variants with type 2 diabetes. *Diabetologia*. 2014; 57(2):339-46.
88. Seif F, Patel SR, Walia HK, Rueschman M, Bhatt DL, Blumenthal RS, Quan SF, Gottlieb DJ, Lewis EF, Patil SP, **Punjabi NM**, Babineau DC, Redline S, Mehra R. Obstructive sleep apnea and diurnal nondipping hemodynamic indices in patients at increased cardiovascular risk. *J Hypertens*. 2014;32(2):267-75
89. Aurora RN, **Punjabi NM**. Obstructive sleep apnoea and type 2 diabetes mellitus: a bidirectional association. *Lancet Respir Med*. 2013;1(4):329-38
90. Kudchadkar SR, Yaster M, **Punjabi NM**. Sedation, sleep promotion, and delirium screening practices in the care of mechanically ventilated children: a wake-up call for the pediatric critical care community. *Crit Care Med*. 2014;42(7):1592-600
91. Gottlieb DJ, **Punjabi NM**, Mehra R, Patel SR, Quan SF, Babineau DC, Tracy RP, Rueschman M, Blumenthal RS, Lewis EF, Bhatt DL, Redline S. CPAP versus oxygen in obstructive sleep apnea. *N Engl J Med*. 2014; 370(24):2276-85.
92. Shin MK, Han W, Bevans-Fonti S, Jun JC, **Punjabi NM**, Polotsky VY. The effect of adrenal medullectomy on metabolic responses to chronic intermittent hypoxia. *Respir Physiol Neurobiol*. 2014; 203:60-7
93. Tanno S, Tanigawa T, Saito I, Nishida W, Maruyama K, Eguchi E, Sakurai S, Osawa H, **Punjabi NM**. Sleep-related intermittent hypoxemia and glucose intolerance: a community-based study. *Sleep Med*. 2014; 15(10):1212-8.
94. Walia HK, Li H, Rueschman M, Bhatt DL, Patel SR, Quan SF, Gottlieb DJ, **Punjabi NM**, Redline S, Mehra R. Association of severe obstructive sleep apnea and elevated blood pressure despite antihypertensive medication use. *J Clin Sleep Med*. 2014; 10(8):835-43.
95. Spira AP, Stone KL, Rebok GW, **Punjabi NM**, Redline S, Ancoli-Israel S, Yaffe K. Sleep-disordered breathing and functional decline in older women. *J Am Geriatr Soc*. 2014; 62(11):2040-6.
96. Dean DA, Wang R, Jacobs DR, Duprez D, **Punjabi NM**, Zee PC, Shea S, Watson K, Redline S. A Systematic Assessment of the Association of Polysomnographic Indices with Blood Pressure: The Multi-Ethnic Study of Atherosclerosis (MESA). *Sleep* 2015; 38(4):587-96.
97. Aurora RN, Swartz R, **Punjabi NM**. Misclassification of Obstructive Sleep Apnea Severity with Automated Scoring of Home Sleep Recordings. *Chest* 2015; 147(3):719-27.
98. McCarty DE, **Punjabi NM**, Kim PY, Frilot C 2nd, Marino AA. Recurrence analysis of the EEG during sleep accurately identifies subjects with mental health symptoms. *Psychiatry Res*. 2014; 224(3):335-40.
99. Moon K, **Punjabi NM**, Aurora RN. Obstructive Sleep Apnea and Type 2 Diabetes in Older Adults. *Clin Geriatr Med*. 2015; 31(1):139-147.
100. Hajat A, Moore K, Phuong Do D, Stein Merkin S, **Punjabi NM**, Sánchez BN, Seeman T, Diez-Roux AV. Examining the cross-sectional and longitudinal association between diurnal cortisol and neighborhood characteristics: Evidence from the multi-ethnic study of atherosclerosis. *Health Place*. 2015; 34:199-206.
101. Lin GM, Colangelo LA, Lloyd-Jones DM, Redline S, Yeboah J, Heckbert SR, Nazarian S, Alonso A, Bluemke DA, **Punjabi NM**, Szklo M, Liu K. Association of Sleep Apnea and Snoring With Incident Atrial Fibrillation in the Multi-Ethnic Study of Atherosclerosis. *Am J Epidemiol*. 2015; 182(1):49-57.

102. Bakker JP, Weng J, Wang R, Redline S, **Punjabi NM**, Patel SR. Associations Between Obstructive Sleep Apnea, Sleep Duration, and Abnormal Fasting Glucose: The Multi-Ethnic Study of Atherosclerosis. *Am J Respir Crit Care Med*. 2015; 192(6):745-53.
103. Gottlieb DJ, Hek K, Chen TH, Watson NF, Eiriksdottir G, Byrne EM, Cornelis M, Warby SC, Bandinelli S, Cherkas L, Evans DS, Grabe HJ, Lahti J, Li M, Lehtimäki T, Lumley T, Marciante KD, Pérusse L, Psaty BM, Robbins J, Tranah GJ, Vink JM, Wilk JB, Stafford JM, Bellis C, Biffar R, Bouchard C, Cade B, Curhan GC, Eriksson JG, Ewert R, Ferrucci L, Fülöp T, Gehrman PR, Goodloe R, Harris TB, Heath AC, Hernandez D, Hofman A, Hottenga JJ, Hunter DJ, Jensen MK, Johnson AD, Kähönen M, Kao L, Kraft P, Larkin EK, Lauderdale DS, Luik AI, Medici M, Montgomery GW, Palotie A, Patel SR, Pistis G, Porcu E, Quaye L, Raitakari O, Redline S, Rimm EB, Rotter JI, Smith AV, Spector TD, Teumer A, Uitterlinden AG, Vohl MC, Widen E, Willemsen G, Young T, Zhang X, Liu Y, Blangero J, Boomsma DI, Gudnason V, Hu F, Mangino M, Martin NG, O'Connor GT, Stone KL, Tanaka T, Viikari J, Gharib SA, **Punjabi NM**, Räikkönen K, Völzke H, Mignot E, Tiemeier H. Novel loci associated with usual sleep duration: the CHARGE Consortium Genome-Wide Association Study. *Mol Psychiatry*. 2015; 20(10):1232-9.
104. **Punjabi NM**, Shifa N, Doffner G, Patil S, Pien G, Aurora RN. Computer-Assisted Automated Scoring of Polysomnograms Using the Somnolyzer System. *Sleep*. 2015 Oct 1;38(10):1555-66.
105. Kudchadkar SR, Yaster M, Punjabi AN, Quan SF, Goodwin JL, Easley RB, **Punjabi NM**. Temporal Characteristics of the Sleep EEG Power Spectrum in Critically Ill Children. *J Clin Sleep Med*. 2015; 11(12):1449-54.
106. Chami HA, Gottlieb DJ, Redline S, **Punjabi NM**. Association between Glucose Metabolism and Sleep-disordered Breathing during REM Sleep. *Am J Respir Crit Care Med*. 2015; 192(9):1118-26
107. Ho V, Crainiceanu CM, **Punjabi NM**, Redline S, Gottlieb DJ. Calibration Model for Apnea-Hypopnea Indices: Impact of Alternative Criteria for Hypopneas. *Sleep*. 2015; 38(12):1887-92.
108. Swihart BJ, **Punjabi NM**, Crainiceanu CM. Modeling sleep fragmentation in sleep hypnograms: An instance of fast, scalable discrete-state, discrete-time analyses. *Comput Stat Data Anal*. 2015 Sep;89:1-11.
109. Arble DM, Bass J, Behn CD, Butler MP, Challet E, Czeisler C, Depner CM, Elmquist J, Franken P, Grandner MA, Hanlon EC, Keene AC, Joyner MJ, Karatsoreos I, Kern PA, Klein S, Morris CJ, Pack AI, Panda S, Ptacek LJ, **Punjabi NM**, Sassone-Corsi P, Scheer FA, Saxena R, Seaquest ER, Thimman MS, Van Cauter E, Wright KP. Impact of Sleep and Circadian Disruption on Energy Balance and Diabetes: A Summary of Workshop Discussions. *Sleep*. 2015; 38(12):1849-60.
110. Cade BE, Gottlieb DJ, Lauderdale DS, Bennett DA, Buchman AS, Buxbaum SG, De Jager PL, Evans DS, Fülöp T, Gharib SA, Johnson WC, Kim H, Larkin EK, Lee SK, Lim AS, **Punjabi NM**, Shin C, Stone KL, Tranah GJ, Weng J, Yaffe K, Zee PC, Patel SR, Zhu X, Redline S, Saxena R. Common variants in DRD2 are associated with sleep duration: the CARE consortium. *Hum Mol Genet*. 2016; 25(1):167-79.
111. Polotsky VY, Bevan-Fonti S, Grigoryev DN, **Punjabi NM**. Intermittent Hypoxia Alters Gene Expression in Peripheral Blood Mononuclear Cells of Healthy Volunteers. *PLoS One*. 2015; 10(12):e0144725.
112. Lutsey PL, Bengtson LG, **Punjabi NM**, Shahar E, Mosley TH, Gottesman RF, Wruck LM, MacLehose RF, Alonso A. Obstructive Sleep Apnea and 15-Year Cognitive Decline: The Atherosclerosis Risk in Communities (ARIC) Study. *Sleep*. 2016 (n press)
113. Shaw JE, **Punjabi NM**, Naughton MT, Willes L, Bergenstal RM, Cistulli PA, Fulcher GR, Richards GN, Zimmet PZ. The Effect of Treatment of Obstructive Sleep Apnea on Glycemic Control in Type 2 Diabetes. *Am J Respir Crit Care Med*. 2016;194(4):486-92

114. Aurora RN, Putcha N, Swartz R, **Punjabi NM**. Agreement between Results of Home Sleep Testing for Obstructive Sleep Apnea with and without a Sleep Specialist. *Am J Med.* 2016; 129(7):725-30.
115. Lane JM, Chang AM, Bjornes AC, Aeschbach D, Anderson C, Cade BE, Cain SW, Czeisler CA, Gharib SA, Gooley JJ, Gottlieb DJ, Grant SF, Klerman EB, Lauderdale DS, Lockley SW, Munch M, Patel S, **Punjabi NM**, Rajaratnam SM, Rueger M, St Hilaire MA, Santhi N, Scheuermaier K, Van Reen E, Zee PC, Shea SA, Duffy JF, Buxton OM, Redline S, Scheer FA, Saxena R. Impact of Common Diabetes Risk Variant in MTNR1B on Sleep, Circadian, and Melatonin Physiology. *Diabetes.* 2016;65(6):1741-51.
116. Lutsey PL, Norby FL, Gottesman RF, Mosley T, MacLehose RF, **Punjabi NM**, Shahar E, Jack CR Jr, Alonso A. Sleep Apnea, Sleep Duration and Brain MRI Markers of Cerebral Vascular Disease and Alzheimer's Disease: The Atherosclerosis Risk in Communities Study (ARIC). *PLoS One.* 2016; 11(7):e0158758.
117. Fiuzat M, Oldenberg O, Whellan DJ, Woehrle H, **Punjabi NM**, Anstrom KJ, Blase AB, Benjafield AV, Lindenfeld J, O'Connor CM. Lessons learned from a clinical trial: Design, rationale, and insights from The Cardiovascular Improvements with Minute Ventilation-targeted Adaptive Sero-Ventilation (ASV) Therapy in Heart Failure (CAT-HF) Study. *Contemp Clin Trials.* 2016; 47:158-64.
118. Putcha N, Crainiceanu C, Norato G, Samet J, Quan S, Gottlieb DJ, Redline S, **Punjabi NM**. Influence of Lung Function and Sleep-Disordered Breathing on All-Cause Mortality: A Community Based Study. *Am J Respir Crit Care Med.* 2016; 197(6): 1007-1014.
119. Kudchadkar SR, Beers MC, Ascenzi JA, Jastaniah E, **Punjabi NM**. Nurses' Perceptions of Pediatric Intensive Care Unit Environment and Work Experience After Transition to Single-Patient Rooms. *Am J Crit Care.* 2016 25(5) e98-e107.
120. Amin N, Allebrandt KV, van der Spek A, Müller-Myhsok B, Hek K, Teder-Laving M, Hayward C, Esko T, van Mill JG, Mbarek H, Watson NF, Melville SA, Del Greco FM, Byrne EM, Oole E, Kolcic I, Chen TH, Evans DS, Coresh J, Vogelzangs N, Karjalainen J, Willemsen G, Gharib SA, Zgaga L, Mihailov E, Stone KL, Campbell H, Brouwer RW, Demirkan A, Isaacs A, Dogas Z, Marcianti KD, Campbell S, Borovecki F, Luik AI, Li M, Hottenga JJ, Huffman JE, van den Hout MC, Cummings SR, Aulchenko YS, Gehrman PR, Uitterlinden AG, Wichmann HE, Müller-Nurasyid M, Fehrmann RS, Montgomery GW, Hofman A, Kao WH, Oostra BA, Wright AF, Vink JM, Wilson JF, Pramstaller PP, Hicks AA, Polasek O, **Punjabi NM**, Redline S, Psaty BM, Heath AC, Morrow M, Tranah GJ, Gottlieb DJ, Boomsma DI, Martin NG, Rudan I, Tiemeier H, van IJcken WF, Penninx BW, Metspalu A, Meitinger T, Franke L, Roenneberg T, van Duijn CM. Genetic variants in RBFOX3 are associated with sleep latency. *Eur J Hum Genet.* 2016;24(10):1488-95.
121. Aurora RN, Kim JS, Crainiceanu C, O'Hearn D, **Punjabi NM**. Habitual Sleep Duration and All-Cause Mortality in a General Community Sample. *Sleep.* 2016; 39(110L 1903-1909).
122. Nagayoshi M, **Punjabi NM**, Selvin E, Pankow JS, Shahar E, Iso H, Folsom AR, Lutsey PL. Obstructive sleep apnea and incident type 2 diabetes. *Sleep Med.* 2016; 25:156-161.
123. Lutsey PL, Norby FL, Gottesman RF, Mosley T, MacLehose RF, **Punjabi NM**, Shahar E, Jack CR Jr, Alonso A. Sleep Apnea, Sleep Duration and Brain MRI Markers of Cerebral Vascular Disease and Alzheimer's Disease: The Atherosclerosis Risk in Communities Study (ARIC). *PLoS One.* 2016 Jul 14; 11(7):e0158758.
124. Campos-Rodriguez F, Martínez-García MA, Reyes-Nuñez N, Selma-Ferrer MJ, **Punjabi NM**, Farre R. Impact of different hypopnea definitions on obstructive sleep apnea severity and cardiovascular mortality risk in women and elderly individuals. *Sleep Med.* 2016 Nov-Dec 27-28:54-58

125. Gottlieb DJ, Somers VK, **Punjabi NM**, Winkelman JW. Restless legs syndrome and cardiovascular disease: a research roadmap. *Sleep Med.* 2016 Oct 27. pii: S1389-9457(16)30147-2.
126. O'Connor CM, Whellan DJ, Fiuzat M, **Punjabi NM**, Tasissa G, Anstrom KJ, Benjafield AV, Woehrle H, Blase AB, Lindenfeld J, Oldenberg O. Cardiovascular Outcomes With Minute Ventilation-Targeted Adaptive Servo-Ventilation Therapy in Heart Failure: The CAT-HF Trial. *J Am Coll Cardiol.* 2017
127. Warren B, Pankow JS, Matsushita K, **Punjabi NM**, Daya NR, Grams M, Woodward M, Selvin E. Comparative prognostic performance of definitions of prediabetes: a prospective cohort analysis of the Atherosclerosis Risk in Communities (ARIC) study. *Lancet Diabetes Endocrinol.* 2017; 5(1):34-42
128. Gottlieb DJ, Somers VK, **Punjabi NM**, Winkelman JW. Restless legs syndrome and cardiovascular disease: a research roadmap. *Sleep Med.* 2017; 31: 10-17.
129. Türoff A, Thiem U, Fox H, Spießhöfer J, Bitter T, Tamisier R, **Punjabi NM**, Horstkotte D, Oldenburg O. Sleep duration and quality in heart failure patients. *Sleep Breath.* 2017 (In Press)
130. Lewis EF, Wang R, **Punjabi N**, Gottlieb DJ, Quan SF, Bhatt DL, Patel SR, Mehra R, Blumenthal RS, Weng J, Rueschman M, Redline S. Impact of continuous positive airway pressure and oxygen on health status in patients with coronary heart disease, cardiovascular risk factors, and obstructive sleep apnea: A Heart Biomarker Evaluation in Apnea Treatment (HEARTBEAT) analysis. *Am Heart J.* 2017;189:59-67
131. Tung P, Levitzky YS, Wang R, Weng J, Quan SF, Gottlieb DJ, Rueschman M, **Punjabi NM**, Mehra R, Bertisch S, Benjamin EJ, Redline S. Obstructive and Central Sleep Apnea and the Risk of Incident Atrial Fibrillation in a Community Cohort of Men and Women. *J Am Heart Assoc.* 2017 July 1; 6(7).
132. Lutsey PL, Misialek JR, Mosley TH, Gottesman RF, **Punjabi NM**, Shahar E, MacLehose R, Ogilvie RP, Knopman D, Alonso A. Sleep characteristics and risk of dementia and Alzheimer's disease: The Atherosclerosis Risk in Communities Study. *Alzheimers Dement.* 2017 (In Press)
133. Sumida K, Kwak L, Grams ME, Yamagata K, **Punjabi NM**, Kovesdy CP, Coresh J, Matsushita K. Lung Function and Incident Kidney Disease: The Atherosclerosis Risk in Communities (ARIC) Study. *Am J Kidney Dis.* 2017; 70(5):675-685.
134. Lecube A, Simó R, Pallayova M, **Punjabi NM**, López-Cano C, Turino C, Hernández C, Barbé F. Pulmonary function and sleep breathing: two new targets for type 2 diabetes care. *Endocr Rev.* 2017; 38(6):550-573
135. Javaheri S, Zhao YY, **Punjabi NM**, Quan SF, Gottlieb DJ, Redline S. Slow wave sleep is associated with incident hypertension: The sleep heart health study. *Sleep.* 2018; 41(1).
136. Aurora RN, Crainiceanu C, Gottlieb DJ, Kim JS, **Punjabi NM**. Obstructive sleep apnea during rapid eye movement sleep and cardiovascular disease. *Am J Respir Crit Care Med.* 2018; 197(5):653-660.
137. Aurora RN, Patil SP, **Punjabi NM**. Portable Sleep monitoring for diagnosing sleep apnea in hospitalized patients with heart failure. *Chest.* 2018 (in press).

Editorials:

1. Marx JJ, **Punjabi NM**, Scharz AR. Preoperative Pulmonary Evaluation. *N Engl J Med* 1999; 341(8): 613.
2. **Punjabi NM**, Haponik E. Ask about daytime sleepiness! *J Am Geriatr Soc* 2000; 48(2): 228-229.

3. Samet J, Nieto FJ, **Punjabi NM**. Sleep-disordered breathing and hypertension: More research is *still* needed. *Am Rev Respir Crit Care Med*. 2000; 161(5): 1409-11.
4. **Punjabi NM**. Improvement of metabolic function in sleep apnea: The power of positive pressure. *Am Rev Respir Crit Care Med*. 2004; 169(2):139-40.
5. Stamatakis KA, **Punjabi NM**. Long sleep duration: a risk to health or a marker of risk? *Sleep Med Rev* 2007; 11(5):337-9.
6. Laffan AM, **Punjabi NM**. Sleep: a nourisher in life's feast? *Sleep Med Rev* 2008; 12(4): 253-5.
7. McGinley B, **Punjabi NM**. Obesity, metabolic abnormalities, and asthma: establishing causal links. *Am J Respir Crit Care Med*. 2011; 183(4):424-5.
8. Mokhlesi B, **Punjabi NM**. "REM-related" obstructive sleep apnea: an epiphenomenon or a clinically important entity? *Sleep* 2012; 35(1):5-7
9. Home sleep testing for obstructive sleep apnea: one night is enough! **Punjabi NM**, Aurora RN, Patil SP. *Chest* 2013; 143(2):291-4.
10. **Punjabi NM**. Counterpoint: Is the AHI the best way to quantify the severity of sleep disordered breathing? No. *Chest* 2015. (In press)
11. Bakker JP, Weng J, Wang R, Redline S, **Punjabi NM**, Patel SR. Reply: "Obstructive Sleep Apnea, Sleep Duration, and Fasting Glucose" and "The Impact of Obesity on the Association between Obstructive Sleep Apnea and Glucose Metabolism". *Am J Respir Crit Care Med*. 2016 Mar 1;193(5):580-1
12. Selvin E, Warren B, Matsushita K, **Punjabi NM**. Prediabetes definitions and clinical outcomes - Authors' reply. *Lancet Diabetes Endocrinol*. 2017; 5(2):94.
13. Taylor HA, **Punjabi NM**. Can We Breathe Easy If PAP Therapy Is Withheld? *Am J Bioeth*. 2017; 17(10):78-79.
14. Gaynanova I, Urbanek J, **Punjabi NM**. Corrections of Equations on Glycemic Variability and Quality of Glycemic Control. *Diabetes Technol Ther*. 2018 Apr;20(4):317

Book Chapters:

1. **Punjabi NM** and Beamer BA. Sleep apnea and glucose metabolism. Eds: Kryger MH, Roth T, and Dement WC. Principles and Practice of Sleep Medicine 4th edition. W.B. Saunders 2005. pp 1034-1042.
2. Stamatakis KA, **Punjabi NM**. Endocrine Function and Glucose Metabolism. Ed: Kushida C. Obstructive Sleep Apnea: Pathophysiology, Comorbidities and Consequences. New York: Informa Healthcare. 2007. pp. 337-354.
3. **Punjabi NM**. Patient versus proxy ratings of quality of life. Eds: Verster JC, Pandi-Perumal SR and Streiner DL. Sleep and Quality of Life in Clinical Medicine. Humana Press 2008. pp 11-17.
4. **Punjabi NM**. Eds: Sleep Apnea and Alterations in Glucose Metabolism. Eds: Bradley TB and Floras JS. Sleep Apnea: Implications in Cardiovascular and Cerebrovascular Disease. Series: Lung Biology in Health and Disease. CRC Press 2009. pp 93-109.

5. Polotsky VY, Jun CC, **Punjabi NM**. Obstructive sleep apnea and metabolic dysfunction. Eds: Kryger MH, Roth T, and Dement WC. Principles and Practice of Sleep Medicine 5th edition. W.B. Saunders 2011. pp 1331-1338.
6. Polak J, Beamer BA, **Punjabi NM**. Obstructive sleep apnea and glucose metabolism. Ed: Pack A. Sleep Apnea: Pathogenesis, Diagnosis and Treatment 2nd edition. Informa Healthcare 2011. pp 300-316.

Extramural Sponsorship – Current:

- 04/01/2014 – 03/30/2019 Treating Sleep Apnea in Type 2 Diabetes Mellitus: A Randomized Clinical Trial
National Institutes of Health/NHLBI
1 R01HL117167
PI: Naresh M. Punjabi, MD, PhD; Effort: 25%
- 08/01/2015 – 07/30/2019 Clinical Utility of Heart Rate in Mental Health
MediBio (Sydney, Australia)
PI: Naresh M. Punjabi, MD, PhD; Effort: 10%
- 07/01/2017 – 06/30/2019 Sleep Reading Center for the Multi-Center Aids Cohort Study
National Institutes of Health Grant Supplement
PI: Naresh M. Punjabi, MD, PhD; Effort 10%
- 06/01/2016 – 05/31/2021 The ARIC Study of Midlife Sleep and Life-Time Brain Amyloid
National Institute of Aging
PI: Adam Spira, PhD (Role: Coinvestigator; Effort 10%)
- 09/01/2015 – 05/31/2020 Poor Sleep Altered Circadian Rhythms and Alzheimers Disease
National Institute of Aging
PI: Adam Spira, PhD (Role: Coinvestigator; Effort 10%)

Extramural Sponsorship – Previous:

- 03/01/2015 – 08/03/2018 Diagnosing and Managing Sleep-Disordered Breathing in Patients with
Decompensated Congestive Heart Failure
American Sleep Medicine Foundation
PI: Naresh M. Punjabi, MD, PhD; Effort: 5%
- 09/01/2008 - 12/31/2015 The GLYCOSA Study
CA-09-06-01 Clinical Trial
ResMed Corporation (San Diego, CA)
PI: Naresh M. Punjabi, MD, PhD; Effort: 10%
- 07/01/2010 – 06/30/2014 Mechanisms of Altered Glucose Metabolism in Sleep-Disordered Breathing
National Institutes of Health/NHLBI
5R01HL075078
\$1,616,977
PI: Naresh M. Punjabi, MD, PhD; Effort: 20%
- 07/01/2010 – 06/30/2014 Association of Sleep Disorders with Cardiovascular Health Across Ethnic Groups
National Institutes of Health/NHLBI
1R01HL098433-01A1
\$793,556 (Subcontract direct costs; Brigham and Women’s Hospital)
PI: Naresh M. Punjabi, MD, PhD; Effort: 5%

- 06/15/2008 – 05/31/2013 Sleep Apnea and Longitudinal Changes in Glycemia and Inflammation in Older Men
National Institutes of Health/NHLBI
5R01HL089467
\$1,000,000
PI: Naresh M. Punjabi, MD, PhD; Effort: 15%
- 07/05/2007 – 06/30/2011 Longitudinal Changes in Sleep Structure: Implications for Health Outcomes
National Institutes of Health/NHLBI
5R01HL086862
\$900,000
PI: Naresh M. Punjabi, MD, PhD; Effort: 20%
- 08/01/2009 – 07/31/2011 Mechanisms Linking Sleep-Disordered Breathing and Cardiovascular Disease
National Institutes of Health/NHLBI
5RC1HL099952
\$1,000,000
PI: Naresh M. Punjabi, MD, PhD; Effort: 5%
- 09/30/2009 – 08/31/2011 Phase II Trial of Sleep Apnea Treatment to Reduce Cardiovascular Morbidity
National Institutes of Health/NHLBI
1RC2HL101417
\$617,783 (Subcontract direct costs; Case Western Research University)
PI: Naresh M. Punjabi, MD, PhD; Effort: 5%
- 07/01/2009 – 06/30/2011 Effects of Sex and Fat distribution on Sleep-Disordered Breathing
National Institutes of Health/NHLBI
2R01HL037379
\$407,330
PI: Philip L. Smith, MD
Role: Co-Investigator; Effort: 5%
- 09/03/2003 – 07/31/2007 The Effects of Sleep Apnea on Metabolic Function
National Institutes of Health/NHLBI
5R01HL075078
\$1,000,000
PI: Naresh M. Punjabi, MD, PhD; Effort: 35%
- 09/01/2004 – 08/31/2009 The Sleep Heart Health Study III
National Institutes of Health/NHLBI
5U01HL053937
\$333,202
PI: Naresh M. Punjabi, MD, PhD; Effort: 15%
- 08/15/2005 – 07/31/2007 Effects of Aging on Sleep Architecture
National Institutes of Aging/NIA
1R21AG02553
\$275,000
PI: Naresh M. Punjabi, MD, PhD; Effort: 25%
- 09/01/1999 – 08/30/2004 The Sleep Heart Health Study II
National Institutes of Health/NHLBI
5U01HL053937
\$1,372,257
PI: Naresh M. Punjabi, MD, PhD; Effort: 30%

- 08/01/1999 – 07/31/2004 Early Identification and Treatment of Sleep Apnea
National Institutes of Health/NHLBI
5K23HL04065
\$678,382
PI: Naresh M. Punjabi, MD, PhD; Effort: 80%
- 07/01/1998 – 06/30/1999 Validation of a Screening Instrument for Sleep Apnea
Agency for Health Care Research and Policy
F32HS000129
\$32,456
PI: Naresh M. Punjabi, MD, PhD; Effort: 100%

EDUCATIONAL ACTIVITIES

Teaching

Classroom Instruction

- 2002 – Present Course Director, “Database Design and Implementation in Clinical Research”
Graduate Training Program in Clinical Investigation
Johns Hopkins University, Bloomberg School of Public Health
- 2007 – Present Course Director, Planning and Funding Clinical Research
Graduate Training Program in Clinical Investigation
Johns Hopkins University, Bloomberg School of Public Health

National Course Offerings

- 2007 – 2008 Course Director, “National Sleep Medicine Course”
Sponsor: American Academy of Sleep Medicine

Clinical Instruction

- 1999 – Present Inpatient service, Pulmonary Consults and Medical Intensive Care Unit
Johns Hopkins Bayview Medical Center
- 1999 – Present Johns Hopkins Bayview Multidisciplinary Clinic on Sleep Disorders

Mentoring

Advisees, Pre-Doctoral:

- 1999 – 2001 J. Gabrielle Breugelmans, MPH
Research Advisor, PhD program (Department of Epidemiology)
Johns Hopkins Bloomberg School of Public Health
- 2001 – 2004 Clara A. Chen, BA
Research Advisor, MHS program (Department of Epidemiology)
Johns Hopkins Bloomberg School of Public Health
- 2002 – 2004 Lin Zhang, MD
Research Advisor, PhD Program (Department of Epidemiology)
Johns Hopkins Bloomberg School of Public Health
- 2005 – 2007 Suzanne Lesage, MD (Pre-doctoral Fellow, Epidemiology)
Research Advisor, MHS program (Department of Epidemiology)
Johns Hopkins Bloomberg School of Public Health
- 2005 – 2009 Allison Laffan, MHS (Pre-doctoral Fellow, Epidemiology)
Research Advisor, PhD Program (Department of Epidemiology)
Johns Hopkins Bloomberg School of Public Health

- 2008 – 2009 Stephen Fernandez (MPH Student)
Capstone Advisor, Johns Hopkins Bloomberg School of Public Health
- 2015 – 2017 Gina Norato (MHS Student)
Research Advisor, MHS program (Department of Biostatistics)
- 2015 – 2017 Ji Soo Kim (MHS Student)
Research Advisor, MHS program (Department of Biostatistics)

Advisees, Post-Doctoral:

- 1998 – 2001 Jason J. Marx, M.D. (Postdoctoral Fellow, Pulmonary & Critical Care Medicine) Johns Hopkins University, Baltimore, MD
- 2000 – 2004 Susheel Patil, M.D. (Postdoctoral Fellow, Pulmonary & Critical Care Medicine) Johns Hopkins University, Baltimore, MD
- 2004 – 2008 Katie Stamatakis, Ph.D. (Postdoctoral Fellow, Department of Epidemiology) Johns Hopkins University, Baltimore, MD
- 2005 – 2008 Mariam Louis, MD (Postdoctoral Fellow, Sleep Medicine) Johns Hopkins University, Baltimore, MD
Johns Hopkins Bloomberg School of Public Health
- 2009 – 2010 Stacey Ishman, MD (MPH Student)
Capstone Advisor
Johns Hopkins Bloomberg School of Public Health
- 2010 – 2013 Jan Polak, MD (Postdoctoral Fellow, Sleep and Metabolism)
Post-doctoral Fellowship Advisor, Johns Hopkins University, Baltimore, MD
- 2014 – 2015 Rashmi N Aurora, MD (MHS Degree)
Associate Professor of Medicine
Johns Hopkins University School of Medicine
- 2012 – 2018 Sapna Khuchadkur, MD (PhD Candidate)
Associate Professor of Anesthesia and Critical Care Medicine
Johns Hopkins University School of Medicine
- 2015 – Present Sarah Bertrand, PhD
Basic Science Post-Doctoral Fellow, Johns Hopkins University School of Medicine
- 2017 – Present Jan Griffin, MD
Cardiology Post-Doctoral Fellow, Johns Hopkins University School of Medicine
- 2018 – Present Stanley Chen Cardenas, MD
Endocrinology Post-Doctoral Fellow, Johns Hopkins University School of Medicine
- 2018 – Present Nik Samatani, MD
Sleep Medicine Post-Doctoral Fellow, Johns Hopkins University School of Medicine

Thesis Committee

- 2004 Master's of Health Science Thesis, Clara Chen (Role: Primary Advisor)
(Johns Hopkins University Bloomberg School of Public Health)
- 2004 Doctor of Philosophy in Epidemiology, Lin Zhang, MD (Role: Primary Advisor)
(Johns Hopkins University Bloomberg School of Public Health)
- 2006 Master's of Science (Biostatistics), Bruce Swihart (Role: Co-Primary Advisor)
University of Colorado (Department of Biostatistics)
- 2009 Doctor of Philosophy in Epidemiology, Alison Laffan, (Role: Primary Advisor)
(Johns Hopkins University Bloomberg School of Public Health)
- 2010 Master's of Biostatistics, Yaping Wang, (Role: Co-Primary Advisor)
(Johns Hopkins University Bloomberg School of Public Health)
- 2016 Doctorate in Graduate Training Program in Clinical Investigation
Doris Leung, MD; Johns Hopkins Bloomberg School of Public Health
- 2017 Doctorate in Graduate Training Program in Clinical Investigation
Alicia Arbaje, MD; Johns Hopkins Bloomberg School of Public Health

Examination Committee Member:

Graduate Training Program in Clinical Investigation, Doctoral Preliminary Exam Committee Member

04/23/2018	Julia Johnson, MD
10/14/2014	Doris Leung, MD
08/26/2013	Sapna Kudchadkar, MD
07/11/2011	Tammy Brady, MD
12/22/2006	Susheel Patil, MD
03/24/2006	Laura Hummers, MD
11/04/2005	Laura Herpel, MD
09/10/2001	Susheel Patil, MD

CLINICAL ACTIVITIES:**Medical Licensure:**

1994 – Present Maryland Medical License (#D46132)

Board and Specialty Certification:

1991	National Board of Medical Examiners I, II, and III [#398288]
1994, 2005	American Board of Internal Medicine [#155124]
1998, 2005	Subspecialty of Pulmonary Medicine, American Board of Internal Medicine
1999, 2005	Subspecialty of Critical Care Medicine, American Board of Internal Medicine
2002	Diplomate, American Board of Sleep Medicine
2009	Subspecialty of Sleep Medicine, American Board of Internal Medicine

Clinical Service Responsibilities:

Johns Hopkins Bayview Sleep Disorders Clinic
 Multi-disciplinary polysomnography case-review conference
 Pulmonary Consult and Critical Care Medicine Inpatient Services

ORGANIZATIONAL ACTIVITIES**Editorial Activities**

2016 – Present	Deputy Editor-in-Chief, <i>Sleep</i>
2005 – Present	Editorial Board, <i>Chest</i>
2006 – Present	Editorial Board, <i>Journal of Clinical Sleep Medicine</i>
2006 – Present	Editorial Board, <i>Sleep</i>
2009 – Present	Editorial Board, <i>Sleep Medicine</i>
2010 – 2015	Associate Editor, <i>Sleep</i>
2005 – 2007	Editorial Board, <i>American Journal of Respiratory Critical Care Medicine</i>

Peer Reviewer for:

American Journal of Respiratory Critical Care Medicine, New England Journal of Medicine, Chest, Sleep, Sleep Medicine, European Respiratory Journal, Diabetes Care, Diabetologia

National and International Scientific Review Groups, Study Sections

2010 – 2014	Grant Review Committee, American Sleep Medicine Foundation
2008 – 2012	Permanent Member, NIH Study Section Respiratory Integrative Biology and Translational Research
2012 – 2013	Chair, Grant Review Committee, American Sleep Medicine Foundation
Feb 2011	<i>Ad hoc</i> reviewer, Research Grants Council, Hong Kong, China
Feb 2010	<i>Ad hoc</i> reviewer, Research Grants Council, Hong Kong, China

Sep 2009 *Ad hoc* reviewer, Diabetes UK Scientific Grant Reviewer
 Feb 2009 *Ad hoc* reviewer, Research Grants Council, Hong Kong, China
 Nov 2005 *Ad hoc* reviewer, The Wellcome Trust (London, UK) Grant Review Committee
 Oct 2005 *Ad hoc* reviewer, National Institutes of Aging (Program Project Review Committee)
 Oct 2005 *Ad hoc* reviewer, Respiratory Integrative Biology and Translational Research Study Section
 Oct 2004 *Ad hoc* reviewer, Respiratory Integrative Biology and Translational Research Study Section
 Aug 2004 *Ad hoc* reviewer, The Wellcome Trust (London, UK) Grant Review Committee
 July 2002 National Institutes of Aging (Program Project Review Committee).

National and Local Advisory Committees

2015 – Present National Institutes of Heart, Lung, and Blood Institute
 Sleep Disorders Research Advisory Board
 2009 – 2014 External Advisory Committee, Center for Research on the Management of Sleep Disorders
 University of Washington, School of Nursing
 2016 – Present Publication Policy Committee, Sleep Research Society
 2008 – Present Advisory Council, Graduate Training Program in Clinical Investigation,
 Johns Hopkins Bloomberg School of Public Health.
 2001 – 2012 Steering and Executive Committee, The Sleep Heart Health Study

Scientific Conference Organizer, Session or Symposium Chair:

2004 – 2010 National Scientific Program Committee (Associated Professional Sleep Societies)
 2004 – 2010 Organizer, Meet the Professors Seminars (Associated Professional Sleep Societies)
 May 17, 2010 Invited Chair, Symposium “Metabolic Aspects of Sleep Apnea: From Mice to Men”
 American Thoracic Society Meeting, New Orleans
 June 07, 2009 Chair: “Year in Review”
 Associated Professional Sleep Societies Meeting, Seattle
 June 9, 2009 Chair, Symposium on “Metabolic Consequences of Obstructive Sleep Apnea”
 Associated Professional Sleep Societies Meeting, Seattle
 March 28, 2009 9th World Congress of Sleep Apnea, Seoul Korea
 Chair: “Sleep deprivation, immunology, and metabolic change”
 May 23, 2004 Co-Chair/Moderator: “Pleiotropic Effects of Obesity Genes and Relevance to Sleep Apnea”
 American Thoracic Society, Orlando, Florida.
 June 2003 Chair/Moderator: “Vascular disease risk factors and outcomes in obstructive sleep apnea.”
 Associated Professional Sleep Societies Meeting, Chicago
 May, 2000 Chair/Moderator: “Sleep-disordered breathing through the ages.”
 American Thoracic Society, Toronto, Canada.
 May 1998 Committee Member: Positive Pressure Therapy in Sleep Apnea.
 American Thoracic Society: Treatment Alternatives for Sleep Apnea. Pittsburgh, PA.

Professional Societies:

1994 – Present American Thoracic Society
 1998 – Present Fellow, American College of Chest Physicians
 1999 – Present American Academy of Sleep Medicine
 2007 – Present Sleep Research Society

RECOGNITION

Awards and Honors

2018 William C. Dement Academic Achievement Award (American Academy of Sleep Medicine)
 2002 Fellow, American Academy of Sleep Medicine
 2002 Fellow, American College of Chest Physicians
 2001 Omega Delta Honor Society, Johns Hopkins University
 2001 Fellow, American College of Chest Physicians

- 1998 National Research Scholarship Award, Agency for Health Care Policy and Research
- 1998 American Lung Association, Research Fellowship Award
- 1991 Calvin Fentress Research Award, University of Chicago School of Medicine
- 1988 National Institutes of Health Research award, University of Chicago School of Medicine
- 1987 Honors in Biomedical Engineering, Northwestern University
- 1986 National Dean's List, Northwestern University
- 1985 Tau Beta Pi, National Engineering Society, Northwestern University
- 1984 Alpha Lamda Delta Honor Society, Northwestern University

Invited Talks

- 1999 National Meeting of the Associated Professional Sleep Societies, Orlando, FL
Title: *Sleep-Wake Disorders in Regional Sleep Centers: A National Cooperative Study* (June 06, 1999)

American Association for Respiratory Care National Meeting, Las Vegas, NV
Industry Round Table Conference.
Title: *The Burden of Sleep-Disordered Breathing* (December 08, 1999)
- 2000 Research Seminar, University of Calgary, Calgary, Canada
Title: *Does REM-apnea Contribute to Daytime Sleepiness?* (January 13, 2000)
- 2001 Conjoint Clinic, Johns Hopkins Hospital, Baltimore, MD
Title: *Snoring and Sleep Apnea: What's All the Noise About?* (March 01, 2001)

Medical Grand Rounds, Johns Hopkins Hospital, Baltimore, MD
Title: *Sleep Apnea: To Treat or Not to Treat.* (March 09, 2001)

Update in Pulmonary & Critical Care Medicine, Johns Hopkins University, Jackson Hole, WY
Title 1: *A Case from the Wards* (August 12, 2001)
Title 2: *Update in Sleep Disorders* (August 14, 2001)

Harbor Hospital Medical Grand Rounds, Baltimore, MD
Title: *The Clinical Burden of Sleep-Disordered Breathing* (September 28, 2001)
- 2002 Endocrinology Seminar, University of Chicago School of Medicine, Chicago, IL
Title: *Sleep-disordered breathing and cardiovascular disease* (April 01, 2002)

American Thoracic Society Meeting, Atlanta, GA
Title: *The association between sleep-disordered breathing and insulin resistance* (May 18, 2002)

Eight International Symposium of Sleep and Breathing, Reykjavik, Iceland
Title: *Sleep-disordered breathing and insulin resistance: From man to mouse* (June 01, 2002)

Department of Population Sciences, University of Chicago, Chicago, IL
Title: *The Clinical and Epidemiologic Identification of Sleep Apnea* (December 11, 2002)

Division of Sleep Medicine, University of Pennsylvania, Philadelphia, PA
Title: *Gender differences in the physiologic expression of sleep-disordered breathing* (February 21, 2002)
- 2003 National Meeting of the Associated Professional Sleep Societies, Chicago, IL
Title: *Insulin resistance and obstructive sleep apnea* (January 5, 2003)

Seventh World Congress on Sleep Apnea, Helsinki, Finland
Title 1: *Is sleep-disordered breathing a synergistic risk factor for cardiovascular disease?* (June 30, 2003)

Title 2: *Sleep-Disordered Breathing, Glucose Tolerance, and Insulin Resistance: Lessons from the Sleep Heart Health Study* (July 3, 2003).

Annual Meeting - North American Association for the Study of Obesity, Ft. Lauderdale, FL.

Title: *Effects of Obstructive Sleep Apnea on Glycemic Control* (October 11, 2003)

2004 American College of Physicians Meeting, San Juan, Puerto Rico

Title 1: *Predictors or Correlates of Excessive Sleepiness in Sleep Apnea* (February 6, 2004)

Title 2: *Metabolic Dysfunction in Sleep-Disordered Breathing: A Causal Relationship?* (February 07, 2003)

Advanced Course in Sleep Medicine - American Academy of Sleep Medicine

Title: *Breathing Disorders Predominately in REM Sleep: "REM Related Apnea"* (February 20, 2004)

Pulmonary and Critical Care Grand Rounds, University of Pittsburgh, Pittsburgh, PA

Title: *The Effects of Smoking on Sleep Architecture* (April 01, 2014)

National Meeting of the American Thoracic Society, Orlando, FL

Title 1: *Insulin Resistance, Obesity, and OSA: "Cause or Common Soil"* (May 23, 2004)

Title 2: *Arousals, Snoring, and Other PSG Abnormalities as they relate to Metabolic Dysfunction* (May 26, 2004)

National Meeting of the Endocrine Society, New Orleans, LA

Title: *Epidemiology of Sleep Disorders and Insulin Resistance* (June 19, 2004)

Ninth International Meeting on Sleep & Breathing, New Port, RI (October 14, 2004)

Title: *The relative contribution of apneas and hypopneas to prevalent cardiovascular disease*

Advanced Sleep Medicine Course – American Academy of Sleep Medicine, Miami, FL

Title: *Sleep Apnea, Insulin Resistance, and Metabolic Syndrome* (February 4, 2005)

National Meeting of the Associated Professional Sleep Societies, Denver, CO

Title 1: *Sleep and Glucose homeostasis as part of the Year in Review* (June 19, 2005)

Title 2: *The Relationship between Sleep Apnea and the Metabolic Syndrome* as part of a symposium entitled "Obesity and Sleep Apnea – A Progressive Epidemic" (June 23, 2005)

2006 National Sleep Foundation Conference 'Sleep and Obesity', Washington DC

Title: *Metabolic Derangements in Sleep Apnea and Implications for Obesity* (March 28, 2006)

Invited Lecture, American Diabetes Association, Washington DC

Title: *Pulmonary Disease and Diabetes* (June 10, 2006)

National Sleep Medicine Course – American Academy of Sleep Medicine, Chicago IL

Title: *Sleep and Endocrinology* (August 14, 2006)

Pulmonary Grand Rounds, Mount Sinai Medical Center, New York, NY

Title: *Cigarette Smoking: A Curse for a Good Night's Sleep* (December 4, 2006)

Keynote speaker, Annual Japanese Sleep Society Meeting, Tokyo, Japan

Title: *Sleep Apnea and Metabolic Dysfunction: Cause or Correlation?* (December 8, 2006)

2007 Consensus Conference on Sleep Apnea and Type 2 Diabetes, Sydney, Australia

Title 1: *Pathophysiology of Type 2 diabetes in Obstructive Sleep Apnea* (February 15, 2007)

Title 2: *Epidemiology of Cardiovascular Disease in Obstructive Sleep Apnea* (February 17, 2007)

American Professional Sleep Societies Meeting, Minneapolis, MN
Symposium: Clinical significance of REM-related obstructive sleep apnea: An epiphenomena
or a real disease
Title: *The Clinical Consequences of REM-related Obstructive Sleep Apnea: Evidence from
Clinical and Population cohorts* (June 11, 2007)

Invited Lecture, American Diabetes Association Annual Meeting, Chicago, IL
Title: *The Sleep Heart Health Study* (June 23, 2007)

Director, National Sleep Medicine Course, Chicago, IL
Title 1: *Sleep and Endocrinology* (August 4, 2007)
Title 2: *Consequences of Sleep Deprivation* (August 4, 2007)

Invited Lecture, World Sleep Conference, Cairns Australia
Title: *Sleep Heart Health Study: What Have We Learned?* (September 04, 2007)

Pro-Con Debate, World Sleep Conference, Cairns Australia
Title: *Does Sleep Apnea Cause Diabetes?* (September 05, 2007)

Heart Failure Society of America: 11th Annual Scientific Meeting, Washington DC
Title: *The Metabolic Burden of Sleep-disordered Breathing.* (September 18, 2007)

Emory University, Sleep Grand Rounds, Atlanta, GA
Title: *Highlights of the Sleep Heart Health Study* (September 19, 2007)

Penn State Milton S. Hershey Medical Center, Hershey, PA
Title: *Epidemiology of Sleep-Disordered Breathing* (November 2, 2007)

2008 Medical Grand Rounds, Tufts University Medical Center, Boston MA
Title: *Sleep Apnea and Metabolic Dysfunction* (February 21, 2008)

American Thoracic Society International Meeting, Toronto Canada
Post-graduate course: Cardiovascular Consequences of Sleep-disordered Breathing
Title: *Sleep-disordered breathing and Metabolic Syndrome* (May 16-18, 2008)

American Thoracic Society International Meeting, Toronto Canada
Symposium entitled "Sleep Heart Health Study: Morbidity and Mortality Outcomes Associated with
Sleep-disordered breathing"
Title: *The Relationship of Sleep-disordered Breathing and Total Mortality* (May 16-18, 2008)

Sleep Disorders Seminar, University of Regensburg, Germany
Title: *Effects of Sleep Apnea on Glucose Metabolism & Cardiovascular Disease: The Sleep
Heart Health Study* (July 28, 2008)

Director, National Sleep Medicine Course, Chicago IL
Title 1: *Sleep and Endocrinology* (August 7-10, 2008)
Title 2: *Consequences of Sleep Deprivation* (August 7-10, 2008)

Symposium on Sleep and Breathing Disorders, Cairo Egypt [Sponsor: Resmed] (October 17-20, 2008)
Title 1: *Pathogenesis of Obstructive Sleep Apnea*
Title 2: *Clinical Features, Diagnosis, and Treatment for Obstructive Sleep*
Title 3: *The Burden of Cardiovascular Disease in Sleep Apnea*
Title 4: *Pathophysiology of Diabetes in Obstructive Sleep Apnea*

Key Note Speaker: 10th Beijing / Hong Kong Medical Exchange
Update on Respiratory Medicine, Hong Kong
Title: *Pathogenesis of Metabolic Dysfunction in Sleep Apnea: The Role of Sleep Fragmentation and Intermittent Hypoxia* (November 8, 2008)

2009 American Heart Association Dinner, Pittsburgh, PA
Title: *Cardiovascular Consequences of Sleep Apnea* (January 29, 2009)

Keynote Speaker, Tokyo Respiratory Care Conference, Tokyo, Japan
Title: *Alterations in Glucose Disposal in Sleep Apnea* (March 7, 2009)

World Congress of Sleep Apnea, Seoul, Korea
Title: *Mechanisms of Altered Glucose Metabolism in Sleep Apnea* (March 28, 2009)

Update in Sleep Medicine (Sleep Apnea and its Relation to Diabetes and Heart Disease)
St Luke's Hospital, Chesterfield, MO
Title: *The Metabolic Consequences of Sleep Apnea* (April 16, 2009)

International Statistical Institute Meeting, Durban, South Africa
Invited Paper Meetings (Symposium)
Title: *Characterizing and Quantitating Normal and Abnormal Sleep* (August 18, 2009)

11th International Symposium on Sleep and Breathing, Pittsburgh, PA (September 11, 2009)
Title: *Effects of Experimental Sleep Fragmentation on Glucose Metabolism in Normal Subjects*

7th International Sleep Disorders Forum, Cannes, France (September 24, 2009)
Sponsor: Sanofi-Aventis
Title: *Assessing the Sleep Homeostat in a Large Community Sample and its Relation to Health Outcomes*

International Diabetes Federation Meeting, Montreal, Canada
Title: *Obstructive Sleep Apnea, Disease Definitions, and Metabolic Implications* (October 18, 2009)

Sleep Grand Rounds University of Toronto, Toronto Canada (November 13, 2009)
Title: *The Clinical Significance of Sleep Apnea for Glucose Metabolism and Type 2 Diabetes*

2010 American Thoracic Society State of the Art Course, Miami, FL (February 25, 2010)
Title 1: *Epidemiology and Diagnosis of Sleep Apnea*
Title 2: *Sleep Apnea and Abnormalities in Glucose Metabolism*

Department of Epidemiology Seminar, Johns Hopkins Bloomberg School of Public Health
Title: *Implications of Sleep for Health and Disease: The Sleep Heart Health Study* (March 19, 2010)

Grand Rounds, Department of Pediatrics, University of Chicago
Title: *Impaired metabolism in sleep apnea: What is all the fuss about?* (April 06, 2010)

Invited Lecturer, Symposium "Cardiac Consequences of Sleep-disordered Breathing"
'New perspectives in sleep medicine - sleep in cardiology', Berlin Germany
300 year anniversary (Charite University Hospital) / 200 year anniversary (Humboldt University)
Title: *Metabolic changes in patients with sleep-related breathing disorders* (May 14, 2010)

Featured Speaker, American Thoracic Society (New Orleans, Louisiana)
Symposium "Metabolic Aspects of Sleep Apnea: From Mice to Men" (May 17, 2010)
Title: *Metabolic effects of sleep disordered breathing: evidence from clinical and translational studies*

Keynote speaker, Symposium on Sleep Medicine
Iwate Medical University school of Medicine, Morioka, Japan
Title: *Sleep apnea and cardiometabolic disease* (August 28, 2010)

Pulmonary Grand Rounds, Mount Sinai Medical Center, New York, NY
Title: *The Sleep Heart Health Study* (September 24, 2010)

World Sleep 2011, International Meeting of the World Sleep Federation (October 16-20, 2010)
Symposium: The Burden of Sleep-Disordered Breathing Across the Globe (Chair)
Title: *The Sleep Heart Health Study: A look back at lessons learned* (October 17, 2010)

Keynote speaker, Congress of the French Sleep Research Society (November 19, 2010)
Title: *Impact of sleep disorders on mortality* (Keynote lecture)
Title: *What have we learned from the Sleep Heart Health Study*

2011 State-of-the-Art Course, American Thoracic Society (March 5, 2011)
Title: *The epidemiology of obstructive sleep apnea*
Title: *Effects of obstructive sleep apnea on endocrine function*

25th Anniversary Meeting of the Northeast Sleep Society, Newport, RI
Title: *Obstructive sleep apnea and diabetes* (April 1, 2011)

Breakfast Symposium, 4th Diabetes International Conference, New Delhi, India
Title: *Sleep apnea and diabetes: A bidirectional association* (April 15, 2011)

2011 Research Summit, American Association of Oral and Maxillofacial Surgeons, Chicago, IL
Title: *Morbidity and mortality associated with obstructive sleep apnea* (May 5, 2011)

Plenary Symposium, World Sleep Meeting 2011, Kyoto, Japan
Title: *The Sleep Heart Health Study: A look back at lessons learned* (October 16, 2011)

4th Annual Meeting Diabetes and Cardiovascular Disease EASD Study Group, Munich, Germany
Title: *Excessive daytime sleepiness is associated with higher HbA1c in type 2 diabetes:
The GLYCOSA Study* (October 28, 2011)

Inspire 2011, Resmed Sleep and Respiratory Medicine Conference, Sydney, Australia (November 17, 2011)
Title: *Pathophysiology of sleep apnea*
Title: *Sleep apnea and glucose metabolism*

2012 Endocrine Grand Rounds, Johns Hopkins University School of Medicine, Baltimore, MD
Title: *Can obstructive sleep apnea impact glucose homeostasis?* (January 18, 2012)

Medical Grand Rounds, Norwalk Hospital, Stamford, Connecticut
Title: *Sleep apnea and abnormalities in glucose metabolism* (March 15, 2012)

Keynote speaker, 1st Annual Pulmonary Update: Practical Topics for the Primary Care Provider
Thomas Jefferson University and Hospitals, Philadelphia, PA
Title: *Changing paradigm in sleep disorders* (April 27, 2012)

Invited Lecture, Maryland Sleep Society (Third Annual Conference), Baltimore, MD
Title: *Obstructive Sleep Apnea and Cardiovascular Disease:
Lessons from the Sleep Heart Health Study* (May 4, 2012)

- 2012 American Thoracic Society Meeting, San Francisco, CA
Title: *Clinical year in review: Sleep medicine* (May 20, 2012)
- American Thoracic Society Meeting, San Francisco, CA
Title: *New findings from the Sleep Heart Health Study: 11 year follow-up* (May 23, 2012)
- Invited Lecture, 72nd Scientific Sessions, American Diabetes Association, Philadelphia, PA
Title: *Sleep apnea and diabetes risk* (June 9, 201)
- Invited Lecture, 26th Annual Meeting of the Associated Professional Sleep Societies, Boston, MA
Title: *Obstructive sleep apnea and diabetes mellitus:
Does one disorder alter the development or progression of the other?* (June 12, 2012)
- Keynote Address, Inaugural Asean Sleep Congress & 4th Malaysian International ORL-HNS Congress, Kuala Lumpur, Malaysia (June 28, 201)
Title: *The global impact of sleep disorders*
- Plenary Lectures:
Assessing sleep disorders: A systematic approach
Assessing driving risk in obstructive sleep apnea: Who's safe and not safe to drive?
Basics of Managing Shift Work and Circadian Rhythm Disorders
Impact of sleep deprivation and obstructive sleep apnea on glucose metabolism
- Medicine Grand Rounds, Winthrop University-Hospital (September 12, 2012)
Title: *Relevance of obstructive sleep apnea for glucose metabolism*
- Pulmonary Grand Rounds: Winthrop University-Hospital (September 12, 2012)
Title: *The Sleep Heart Health Study: A Look Back at Two Decades of Epidemiological Research on Sleep Apnea*
- Resmed Sleep and Respiratory Medicine Conference (Inspire 2012), Sydney, Australia
Title: *Public Health Aspects of Obstructive Sleep Apnea* (November 21, 2012)
- Keynote Speaker, XXXV Congress of the Brazilian Thoracic Society, Belo Horizonte, Brazil (Nov 27, 2012)
Title 1: *Impact of Sleep Disorders on Mortality and Cardiovascular Health*
Title 2: *The Relationship Between Sleep Apnea and Cardiovascular Health*
Title 3: *Effects of Obstructive Sleep Apnea on Metabolic Syndrome*
- 2013 Center for Sleep and Circadian Neurobiology Seminary
University of Pennsylvania, Philadelphia, PA
Title: *Sleep apnea and glucose metabolism: Progress over the last decade* (January 23, 2013)
- Medicine Update 2013, All India Institute of Medical Sciences, Delhi, India
Title: *Cardiometabolic risk associated with obstructive sleep apnea* (February 09, 2013)
- Sleep Technology Conference of Greater Grand Rapids, Grand Rapids, Michigan
Title: *Cardiometabolic consequences of obstructive sleep apnea* (March 09, 2013)
- Medical Grand Rounds, University of Washington, Seattle
Title: *Cardiovascular and metabolic implications of obstructive sleep apnea* (April 04, 2013)
- American Thoracic Society Meeting, Philadelphia, PA (May 18, 2013)
Post Graduate Course: Measures of Sleep-Disordered Breathing Severity and Health-Related Outcomes
Title: *Metabolic and inflammatory markers in sleep-disordered breathing*

Advances in Pulmonary Medicine, Monongahela Valley Hospital, Monongahela, PA (October 13, 2013)
Title: *Sleep disorders in primary care*

British Sleep Society 25th Anniversary Meeting, Edinburgh Scotland
Title: *Obstructive sleep apnea and metabolic risk* (October 17, 2013)

Ehime University, Matsuyama Japan
Title: *Sleep-disordered breathing, glucose intolerance and insulin resistance* (October 29, 2013)

65th Annual Meeting of the JAPAN Broncho - Esophagological Society, Tokyo Japan
Title: *Recent advancements in sleep apnea* (October 30, 2013)

Yokohama City University, Tokyo Japan
Title: *Sleep-disordered breathing and health consequences including all-cause mortality* (October 30, 2013)

World Diabetes Congress 2013 and International Diabetes Federation Meeting, Melbourne, Australia
Symposium: Novel type 2 diabetes risk factors (December 4, 2013)
Title: *Can Disorders of Sleep Contribute to Diabetes Risk?*

2014 Irish Sleep Society Meeting, 10th Scientific & Annual General Meeting, Dublin, Ireland
Title: *Metabolic and cardiovascular effects of obstructive sleep apnea* (February 15, 2014)

Morning Report, Rajai Hospital, Tehran, Iran
Title: *Obstructive sleep apnea: Implications for cardiovascular medicine* (April 26, 2014)

Ghaem Hospital, Mashhad, Iran
Title: *Health consequences of obstructive sleep apnea* (April 27, 2014)

Emam Khomeini Hospital, Tehran, Iran
Title: *Obstructive Sleep Apnea and Cardiovascular Disease* (April 28, 2014)

Shriati Hospital, Department of Endocrinology, Tehran, Iran
Title: *Obstructive sleep apnea and diabetes mellitus:
Does one disorder alter the development or progression of the other?* (April 28, 2014)

Heart Center, Markaz Ghalb Hospital
Title: *Cardiovascular and Metabolic Consequences of Obstructive Sleep Apnea* (April 29, 2014)

ResMed Sleep and Respiratory Medicine Conference, Sydney, Australia (November 26-28 2014)
Title 1: *Screening and Diagnosing OSA: Role of Portable Sleep Monitoring*
Title 2: *Optimizing Adherence to PAP therapy in OSA*
Title 3: *Cardiovascular Consequences of OSA*

2015 Obesity Management Workshop
Endocrine Society's 97th Annual Meeting & Expo: ENDO 2015; San Diego, CA (March 04, 2015)
Title: *Clinical Significance of Obstructive Sleep Apnea*

Industry Product Theater 2015, Associated Professional Sleep Societies Meeting, Seattle, WA
Title: *Automated Scoring of Polysomnograms Using the Somnolyzer* (June 08, 2015)

2016 American Diabetes Association 63rd Annual Advanced Postgraduate Course
Title: *Sleep and Diabetes: More than Sleep Apnea* (March 04-05, 2016)

Nordic Master Class, Stockholm, Sweden (November 7-8, 2016)
Title 1: *Sleep-disordered breathing and alterations in glucose metabolism*

Title 2: *Computer assisted automated scoring of sleep studies using the Somnolyzer*

2017 Maryland Sleep Society (April 28, 2017)

Title: *Challenges in Diagnosis and Management of Sleep Disordered Breathing in Heart Failure*

American Thoracic Society (May 21, 2017)

Title: *What's in a number: How Diagnosis of OSA is determined by a 4% or 3% Desaturation*

31st Annual Meeting of the American Professional Sleep Societies (Boston, MA)

Title: *Sleep and Cardiovascular Health* (June 05, 2017)

Title: *Mild-to-Moderate Obstructive Sleep Apnea: Highly Prevalent, But of What Impact?* (June 06, 2017)

77th Scientific Sessions of the American Diabetes Association (June 10, 2017) (San Diego, US)

Title: *Treatment Options for Sleep—Continuous Positive Airway Pressure and Beyond*

9th Annual Conference of the Virginia Academy of Sleep Medicine & Dental Medicine (Nov 03 2017)

Title: *Sleep Duration, Obstructive Sleep Apnea and Type 2 Diabetes*

2018 FDA Workshop (April 16, 2018)

Study Design Considerations for Devices including Digital Health Technologies for Sleep Disordered Breathing (SDB) in Adults

Panelist on “Defining SDB Conditions for Clinical Trials”

Panelist on “Clinical Trial Design Considerations for therapeutic SDB Devices”

National Jewish, Clinical & Translational Research Forum (April 26, 2018) Colorado

Title: *Metabolic Implications of Sleep Apnea*

Yale University Sleep Research Symposium (April 27, 2018)

Title: *Clinical Relevance of Sleep Apnea for Metabolism*

Post-Graduate Course at the American Thoracic Society Meeting (May 19, 2018)

Title: *Epidemiology and Consequences of Obstructive Sleep Apnea.*

American Professionally Sleep Societies Annual Meeting (June 2, 2016)

Skills for Success in Academic Sleep Research and Clinical Practice (Post Graduate Course)

Title: *Developing a Statistical Analysis Plan*