

148th WPI-IIIS Seminar

~Commemorating Inauguration of New IIIS Human Sleep Labs~

Mechanisms of Current and Emerging OSA Therapy

Obstructive sleep apnea (OSA) is the appearance of recurrent apneas and hypopneas during sleep. It is a complex syndrome with a causal mechanism of airway closure or near closure, due to a reduced muscle tone during sleep. A second element is the gain of the system, when at termination there occurs an excessive ventilatory overshoot (a high gain), and then recovery leads to a fall back below a threshold for keeping the airway open. Another contribution is poor recruitment of drive to muscles involved in reopening an obstructed airway, and sleep itself, i.e. a tendency for early arousal from sleep. Treatment can bypass any obstruction with a tracheostomy or, if it is nasopharyngeal obstruction, place a flexible tube through one nasal passage with Nasent (Seven Dreamers). Continuous positive airway pressure (CPAP) or oral appliances stent the airway open. Surgery on the anatomy or weight loss also lower the tendency for airway closure. A new approach is to directly stimulate the hypoglossal nerve and actively open the airway, leaving anatomy and loop gain alone. Future directions being studied are pharmacologic approaches that can prevent the loss of muscle tone with sleep, lower loop gain, and/or prevent early arousals, while promoting sleep; however, no drugs have reached a regulatory threshold.



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Date: **Monday, April 15, 2019**

Time: **14:05 – 14:50**

Venue: **1F Auditorium, IIIS Building**



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