



Sleep for Science

Brown University

Bradley Hospital

William C. Dement

**Sleep and Chronobiology Behavioral
Science Research Apprenticeship**

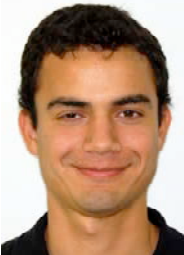
Retreat Colloquium

21-23 August 2006

Whispering Pines Conference Center

URI Alton-Jones Campus

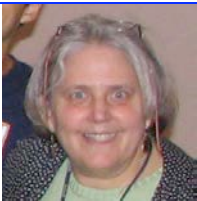
West Greenwich, RI

Monday	Event	Speaker	Topic
1200-1300	Lunch		
1330		David M. Raizen, Ph.D., Young Investigator	Worms, Flies, and Videotapes: What Can the Spineless Teach Us about Sleep?
1430	Break		
1500		Erik Herron	Sleep and the Progression of Alzheimer's Disease
1515		William Coon	Learning While You Sleep
1530		M. Kinneret Friedman	The Importance of Sleep Disturbances in the Understanding & Treatment of ADHD
1545		George Myers	hPer2: One of the Possible Genetic Bases of the Circadian Clock
1600	Break		

Monday	Event	Speaker	Topic
1630		KC Schierberl	Sleep & Epilepsy: Connections and Clinical Applications
1645		Albert Lin	Sleep Deprivation & Its Genetic Significance on Synaptic Plasticity
1715	Hors d'oeuvres		
1800-1900	Dinner		
1930 Special Event		Thomas F. Anders, M.D., Senior Investigator	Serendipity and Academia

Tuesday	Event	Speaker	Topic
0800-0900	Breakfast		
0930		Mariana G. Figueiro, Ph.D., Young Investigator	Light as a Stimulus for the Circadian System...but What is Light?
1030	Break		
1100		Allison Brager	An Antagonistic Combination? The Effects of Caffeine and Alcohol on Normal Sleep in Healthy Adults
1115		Jake Williams	Sleep and the Adaptive Response in Vaccination
1130		António Fidalgo	Effects of Processes C & S on PVT Performance
1145		Nate Bowling	RBD: Neuropathological Implications
1200		Jared Saletin	Individual Differences: Sleep and Its Correlates in Personality

Tuesday	Event	Speaker	Topic
1215	Break		Change into play clothes!!
1300-1400	Lunch		
1400		Jeffrey S. Durmer, M.D., Ph.D., Young Investigator	Identification of Restless Legs Syndrome in Children
1500	Break		Change into play clothes!!!
1515	Special Event	All	Woodland Chat with Faculty: Considering a Career... (Return by 1630 to prep for F&G)
1640	Fun & Games	All	Meet in the Field in “Play Clothes”
1745	Hors d’oeuvres		
1800-1900	Dinner		
1930	FUN NIGHT	All	Conference room off-limits until 1930.

Wednesday	Event	Speaker	Topic
0800-0900	Breakfast		
0915		Nayantara Santhi, Ph.D., Young Investigator	Moderate Intensity Light in Combination with Scheduled Sleep Facilitates Adaptation to Night Work
1015	Break		
1045		Katherine Garlo	Potential Associations Between the Hypocretin System and the Sleep Abnormalities of Aging
1100		Eliza Van Reen, M.S.	Sleep and Alcohol During Forced Desynchrony
1115		Stephanie J. Crowley, M.S.	Teen Weekend Sleep: Circadian Timing, Performance, Mood
1130		Mary A. Carskadon, Ph.D.	Farewell
1200-1300	Lunch		

Young Investigator Presentations

David M. Raizen, M.D., Ph.D., Instructor of Neurology, University of Pennsylvania School of Medicine, Philadelphia, PA

Worms, Flies, and Videotapes: What Can the Spineless Teach Us about Sleep?

Recent work establishes that fruit flies have a sleep-like state that shares fundamental similarities with human sleep. My own research is aimed at extending the universality of sleep to a yet simpler animal, the round worm. I will demonstrate how these model organisms can be used to identify sleep regulatory pathways. I end by speculating from my observations in worms about the purpose for the evolution of a sleep-like state, one of the key outstanding biological questions.

Mariana G. Figueiro, Ph.D., Assistant Professor, Lighting Research Center, Rensselaer Polytechnic Institute, Troy, NY

Light as a stimulus for the circadian system....but what is light?

It is now widely acceptable that environmental lighting exerts a powerful influence on the circadian system in humans. The most obvious circadian behavior by humans is the sleep-wake cycle. However, a significant portion of the population in the United States suffers from some form of sleep disorder. Light is the primary regulator of the circadian system. Indeed, a regular light-dark cycle is essential for diurnal entrainment to a pattern of activity during the day and sleep during the night. Despite the fundamental importance of light (and dark) for circadian regulation and, therefore, for proper entrainment and sleep, our collective understanding of light as it impacts the circadian system is quite limited. This short presentation will discuss the definition of light, the phototransduction mechanisms underlying the circadian system (and how they differ from those underlying the visual system), and demonstrate an instrument that appropriately measures light for the circadian system. Finally, results from a pilot study using blue light to improve sleep efficiency in older adults, including those with Alzheimer's disease, will be presented.

Jeffrey S. Durmer, M.D, Ph.D., Medical Director, Fusion Sleep Center, Suwanee, GA

Identification of Restless Legs Syndrome in Children

This is a talk which is largely human based and begins with a discussion of the human problem of RLS and the particulars regarding children. I cover the anatomy/physiology of RLS and the association of RLS with ADHD. I discuss my ongoing study of RLS identification in children and the phenotype/genotype concept that we are working on.

Nayantara Santhi, Ph.D., Postdoctoral Fellow, Division of Sleep Medicine, Harvard Medical School, Brigham and Women's Hospital, Boston, MA

Moderate Intensity Light in Combination with Scheduled Sleep Facilitates Adaptation to Night Work

A large number of studies have shown that appropriately timed bright light, in conjunction with a fixed sleep schedule, can facilitate adaptation to night work. However, much less is known about how light of moderate intensity can aid in adaptation to night work. To examine this issue we designed a 10-day simulated shift-work study, which included four day shifts followed by three night shifts. Subjects were in the laboratory during work and sleep episodes. In between work and sleep subjects left the laboratory and were free to engage in normal activity, provided they did not nap. The key manipulations in this study were the timing of the sleep episode, timing of the bright light exposure during the night shifts and the intensity of the bright light exposure. Our goal was to examine the effect of these manipulations on circadian phase (Dim Light Salivary Melatonin Onset), cognitive performance (Simple Response Time) and subjective sleepiness. Our data demonstrated that that light of more moderate intensity, in combination with appropriately scheduled sleep, can be effective in facilitating physiological and cognitive adaptation to night work.

2006 Research Apprenticeship Faculty, Teaching Assistants, and Laboratory Staff

APPRENTICESHIP FACULTY

**Brown Medical School, Department of
Psychiatry and Human Behavior**

Christine Acebo, Ph.D.
Mary A. Carskadon, Ph.D., Apprenticeship
Director
Ron Seifer, Ph.D.

TEACHING ASSISTANTS

Brown University, Department of Psychology

Stephanie Crowley
Eliza Van Reen

RETREAT VISITING FACULTY

Brown University, Department of Psychology

Rachel Herz, Ph.D.

Brown University, Human Development Center

Monique LeBourgeois, Ph.D.

CONSULTING PHYSICIANS

Brown Medical School, Pediatrics Department

Elizabeth Forbes, M.D.
Judith Owens, M.D.

Brown Medical School, Department of Medicine

Michael L. Stanchina, M.D.

E.P. BRADLEY HOSPITAL SLEEP LABORATORY, RESEARCH STAFF

Henry Arantes, Research Technologist
David Bushnell, Research Assistant
Max Elliott, Administrative Secretary
Janet Foster, Research & Data Assistant
Denise Maceroni, Assay Technologist
Jennifer Maxwell, Data Coordinator
Erin McInrue, Research Technologist
Jen Norton, Research Assistant
Dawn Roux, Sr. Research Assistant
Ellen Sweeney, Research Technologist
Amanda Tow, Research Technologist
Shawn Vieira, Research Assistant

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2006 William C. Dement Fellows

Nathaniel Bowling

Rising Junior, Brown University

Allison Brager

Rising Senior, Brown University

William "Will" Coon

Rising Senior, McGill University

António Fidalgo

Rising 6th Year, University of Minho

M. Kinneret Friedman

Rising Senior, Queen's University

Katherine Garlo

December 2005 Graduate, Wellesley
College

Erik Herron

Rising Senior, Fordham University

Albert Lin

Rising Senior, Brown University

George Myers

Rising Junior, Kapi'olani Community
College, University of Hawai'i

Jared Saletin

Rising Sophomore, Johns Hopkins
University

Kathryn "KC" Shierberl

Rising Junior, Bates College

Jacob "Jake" Williams

Rising Junior, University of North Texas