



GENERAL STUDIES COURSE PROPOSAL COVER FORM

Course information:

Copy and paste current course information from Class Search/Course Catalog.

College/School College of Nursing and Health Innovation Department
Prefix HCR Number 294 Title The Science of Sleep Behavior Units: 3

Is this a cross-listed course? No If yes, please identify course(s)

Is this a shared course? No If so, list all academic units offering this course

Is this a permanent numbered course with topics? No

If yes, all topics under this permanent numbered course must be taught in a manner that meets the criteria for the approved designation(s). It is the responsibility of the chair/director to ensure that all faculty teaching the course are aware of the General Studies designation(s) and adhere to the above guidelines. Chair/Director Initials (Required)

Course description: This course focuses on the nature, organization, function, and biopsychosocial determinants of sleep and sleep disorders across the lifespan, emphasizing the social and behavioral processes that influence them.

Requested designation: Social-Behavioral Sciences-SB

Note- a separate proposal is required for each designation requested

Eligibility:

Permanent numbered courses must have completed the university's review and approval process. For the rules governing approval of omnibus courses, contact Phyllis.Lucie@asu.edu or Lauren.Leo@asu.edu.

Submission deadlines dates are as follow:

For Fall 2016 Effective Date: October 6, 2015

For Spring 2017 Effective Date: March 15, 2016

Area(s) proposed course will serve:

A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study.

Checklists for general studies designations:

- Complete and attach the appropriate checklist
Literacy and Critical Inquiry core courses (L)
Mathematics core courses (MA)
Computer/statistics/quantitative applications core courses (CS)
Humanities, Arts and Design core courses (HU)
Social-Behavioral Sciences core courses (SB)
Natural Sciences core courses (SQ/SG)
Cultural Diversity in the United States courses (C)
Global Awareness courses (G)
Historical Awareness courses (H)

A complete proposal should include:

- Signed course proposal cover form
Criteria checklist for General Studies designation(s) being requested
Course catalog description
Sample syllabus for the course
Copy of table of contents from the textbook and list of required readings/books

It is respectfully requested that proposals are submitted electronically with all files compiled into one PDF. If necessary, a hard copy of the proposal will be accepted.

Contact information:

Name Megan E. Petrov, PhD E-mail Megan.Petrov@asu.edu Phone 602-496-2297

Department Chair/Director approval: (Required)

Chair/Director name (Typed): Brenda Morris Date: 5/11/2015

Chair/Director (Signature): Brenda Morris, EdD, RN, CNE

Rev. 4/2015 CONHE assistant Dean, Undergrad Education

**Arizona State University Criteria Checklist for**  
**SOCIAL-BEHAVIORAL SCIENCES [SB]**

**Rationale and Objectives**

Social-behavioral sciences use distinctive scientific methods of inquiry and generate empirical knowledge about human behavior, within society and across cultural groups. Courses in this area address the challenge of understanding the diverse natures of individuals and cultural groups who live together in a complex and evolving world.

In both private and public sectors, people rely on social scientific findings to consider and assess the social consequences of both large-scale and group economic, technological, scientific, political, ecological and cultural change. Social scientists' observations about human interactions with the broader society and their unique perspectives on human events make an important contribution to civic dialogue.

Courses proposed for a General Studies designation in the Social-Behavioral Sciences area must demonstrate emphases on: (1) social scientific theories, perspectives and principles, (2) the use of social-behavioral methods to acquire knowledge about cultural or social events and processes, and (3) the impact of social scientific understanding on the world.

Revised April 2014

Proposer: Please complete the following section and attach appropriate documentation.

<b>ASU--[SB] CRITERIA</b>					
<b>A SOCIAL-BEHAVIORAL SCIENCES [SB] course should meet all of the following criteria. If not, a rationale for exclusion should be provided.</b>					
YES	NO		Identify Documentation Submitted		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Course is designed to advance basic understanding and knowledge about human interaction.	Syllabus		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Course content emphasizes the study of social behavior such as that found in: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <li>• ANTHROPOLOGY</li> <li>• ECONOMICS</li> <li>• CULTURAL GEOGRAPHY</li> <li>• HISTORY</li> </ul> </td> <td style="width: 50%; vertical-align: top; text-align: center;">Psychology</td> </tr> </table>	<ul style="list-style-type: none"> <li>• ANTHROPOLOGY</li> <li>• ECONOMICS</li> <li>• CULTURAL GEOGRAPHY</li> <li>• HISTORY</li> </ul>	Psychology	Syllabus
<ul style="list-style-type: none"> <li>• ANTHROPOLOGY</li> <li>• ECONOMICS</li> <li>• CULTURAL GEOGRAPHY</li> <li>• HISTORY</li> </ul>	Psychology				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Course emphasizes: <ul style="list-style-type: none"> <li>a. the distinct knowledge base of the social and behavioral sciences (e.g., sociological anthropological).</li> <li style="text-align: center;"><b>OR</b></li> <li>b. the distinct methods of inquiry of the social and behavioral sciences (e.g., ethnography, historical analysis).</li> </ul>	Syllabus		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Course illustrates use of social and behavioral science perspectives and data.	Syllabus		
		<b>THE FOLLOWING TYPES OF COURSES ARE EXCLUDED FROM THE [SB] AREA EVEN THOUGH THEY MIGHT GIVE SOME CONSIDERATION TO SOCIAL AND BEHAVIORAL SCIENCE CONCERNS:</b>			
		<ul style="list-style-type: none"> <li>• Courses with primarily arts, humanities, literary or philosophical content.</li> <li>• Courses with primarily natural or physical science content.</li> <li>• Courses with predominantly applied orientation for professional skills or training purposes.</li> <li>• Courses emphasizing primarily oral, quantitative, or written skills.</li> </ul>			

Course Prefix	Number	Title	General Studies Designation
HCR	294	The Science of Sleep Behavior	SB

Explain in detail which student activities correspond to the **specific** designation criteria. Please use the following organizer to explain how the criteria are being met.

Criteria (from checksheet)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)
C1/C2	The course is an introduction to the study of sleep as a human behavior that focuses on social, psychological, and behavioral theories and perspectives of sleep functionality and effects at the individual and community level.	see yellow highlights in syllabus and inserted comments
C3	The course assignments draw from the distinct knowledge base as well as the methods of inquiry of the social and behavioral sciences in the context of the sleep field	see blue highlights in syllabus and inserted comments
C4	The course readings and lectures draw from sociobehavioral scientific data on sleep behavior.	see green highlights in syllabus and inserted comments

**ARIZONA STATE UNIVERSITY  
COLLEGE OF NURSING & HEALTH INNOVATION**

**Course Prefix & Number:** HCR 294

**Course Title:** The Science of Sleep Behavior

**Course Title Abbreviation:** Science of Sleep

**Credits:** Three (3) credit hours, Elective

**Course Address:** <http://myasucourses.asu.edu>

**Faculty:** Megan E. Petrov, PhD  
Assistant Professor  
Room:  
Day:  
Time:  
Office Room: NHI-1 358J  
Office Telephone: 602-496-2297  
Email: [megan.petrov@asu.edu](mailto:megan.petrov@asu.edu)  
Office Hours: By appointment

**Prerequisites or Co-Requisites:** none

**Course Catalog Description:** Explore the biopsychosocial organization and determinants of sleep and sleep disorders across the lifespan.

**Course Description:** This course focuses on the nature, organization, function, and biopsychosocial determinants of sleep and sleep disorders across the lifespan, emphasizing the social and behavioral processes that influence them.

**Course Objectives:** Upon completion of this course, you should be able to:

1. Summarize the neurophysiology of sleep and circadian rhythms
2. Develop skills in assessing and interpreting sleep behavior
3. Describe social, psychological and behavioral theories and concepts relevant to the study of sleep, sleep disorders, and dreaming.
4. Identify short and long-term benefits and consequences of sleep
5. Apply principles of sleep regulation and treatments to improve your own sleep as well as the sleep of the greater community

## **Course Requirements (Assignments):**

### **Summary of Assignments:**

1. Participation/In-Class Exercises (10%)—students are expected to read all assigned materials prior to class and should be prepared to participate in-class exercises designed to supplement the assigned topic or previous topics. In essence, these exercises will demonstrate the students' learning. **In-class exercises may include writing assignments, group activities, class discussions and demonstrations, and quizzes. To receive full credit for this portion of your grade, you must be present and fully participate in 8 of 10 in-class exercises.** By “fully participate”, I mean that you were prepared for the exercise and gave thoughtful responses. Each exercise is worth 1¼% toward your final grade and it will be graded on a **pass/fail basis**. *If you complete more than 8 in-class exercises, the extras will count as bonus percentage points toward your final grade.*
2. **Experiential Exercise: Sleep Diaries and Rating Scales** (15%)—students will complete a 2 week-long standardized sleep diary and sleep-related daytime functioning questionnaires about their own sleep and experience. Upon completion, they will analyze their sleep diary and rating scale data. Students will then write a 3 – 4 double spaced paper summarizing their data and indicate clear and concrete improvements that can made for their sleep. Papers must be typed in 11 point, Arial font with 1 inch margins.
3. **Sleep Improvement Program** (15%) – Based upon the data gathered from the rating scales, sleep diaries, as well as course readings and discussions, students **will implement a sleep improvement program for one week, following evidence based parameters.** Students will then write a 3 - 4 page, double-spaced paper in which they evaluate and summarize the effectiveness and outcomes of the sleep improvement program, which will be submitted along with one additional week of sleep diaries. Papers must be typed in 11 point, Arial font with 1 inch margins. You must use at least three sources as reference materials to justify the choices made in the sleep improvement program. Citations and references must be in APA style. Wikipedia is NOT a source.
4. **Community Sleep Project** (20%) – This assignment recognizes the lack of understanding and value placed on sleep among Americans, particularly among college students. Students will design a project aimed at educating their peers, family members, or other persons in the community about sleep focused on a single issue, such as sleep hygiene, a particular sleep pathology of interest, a public policy that directly or indirectly impacts sleep, driving or other situations where drowsiness presents a hazard, alcohol and substance use, or a theme of the students' choosing. Students can work alone, in pairs, or in small groups of 3-4; all topics must be preapproved by the instructor. (Larger student groupings will be expected to produce more substantial projects.) Students are encouraged to

be creative in their presentations, some of which will be show-cased in class. Students may wish to consider a public service announcement, video or video essay, webcast, brochure, blog, or poster format for their project.

5. **Exams** (40%) – There will be 2 non-cumulative exams (mid-term and final exam given during finals week). **Any and all of the material covered in class lectures, class activities, and assigned readings** will be fair game for the exams. However, the majority of the exam questions will cover material that was discussed during class. (Yet another reason you should attend class!) Exams will consist of multiple-choice questions, and may include short answer questions. Each of the exams will be worth 20% of your total grade.

### **Policy on Late Assignments:**

Students are strongly encouraged to keep up with course readings and assignments. Students may submit assignments on or before due dates. *The Sleep Improvement Program* and the *Sleep Diary and Rating Scale Experiential Exercise* will not be accepted if they are more than seven days past due. Each day past due will result in a 2.5% reduction in the final grade of that particular assignment or exercise. Individual needs to extend due dates for course assignments must be negotiated with faculty at least 48 hours prior to the published due date.

The date for the mid-term exam will be noted on the class schedule. If you see that you have a conflict with this exam dates (i.e., you have had a longstanding commitment that occurs on that day), you must notify me and *place your request for a make-up exam by [Insert date]*. Requests for make-up exams will not be accepted after *[Insert date]* (except in extreme circumstances, such as a medical emergency or death in the family). Sudden out-of-town travel does not qualify for a make-up exam. To qualify for a make-up exam, your professor must be notified either prior to the exam (highly preferable) or as soon as possible afterward. In the case of a medical emergency, written proof from a physician will be required. Proper medical documentation includes (a) date and time of visit, (b) description of the medical problem, and (c) clear description of why the student could not take the exam, even with this problem. You must also provide the name and contact information of the physician. Further documentation may be requested. The make-up exam will be different from the original exam. If you miss an exam without an approved excuse, you will receive a score of 0 for that exam.

Exceptions to the above absence/late policies are below:

- Religious observances/practices that are in accord with ACD 304–04, “Accommodation for Religious Practices”
- University sanctioned events/activities that are in accord with ACD 304–02, “Missed Classes Due to University-Sanctioned Activities”

**Methods of Evaluation:** Students will be evaluated through participation/in-class exercises, assignments, and exams.

ASU's +/- grading will be used:

A+	99-100
A	93-98
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	70-76
D	60-69
E	59 or below
XE	Failure due to academic dishonesty

<b>Topical Outline and Course Calendar:</b>			
<b>Week</b>	<b>Date</b>	<b>Topic</b>	<b>Outcomes</b>
1		Introduction and Organization of Sleep a. Physiological changes during sleep b. Homeostatic and circadian influences c. Sleep Assessment Methods	1,2
2		The Evolution and Phylogeny of Sleep Behavior a. Segmented Sleep – Pre-Industrial Revolution	1
3		Neural and Chemical Control of Sleep and Circadian Rhythms	1
4		Developmental Course of Sleep a. Pediatric b. Adolescents c. Adults d. Older Adults	1,3
5		Major Biopsychosocial Theories on the Function of Sleep a. History and Culture of how we viewed sleep b. Theories of the function of sleep	3,4
6		Consequences of Sleep Deprivation a. Behavior b. Mood c. Cognition	2-4
		<b>Sleep Diaries, Rating Scales, and Summary Paper Due</b>	
7		Sleep Disorders a. Insomnia b. Sleep Related Breathing Disorders	3

Commented [MP1]: C1/C2/C3/C4

Commented [MP2]: C1/C2/C4

Commented [MP3]: C1/C2/C4

Commented [MP4]: C1/C2

Commented [MP5]: C1/C2/C4

Commented [MP6]: C3



		c. Hypersomnolence/Narcolepsy d. Parasomnias e. Sleep Related Movement Disorders f. Circadian Rhythm Sleep-Wake Disorders			Commented [MP7]: C1/C2/C4
8		<b>Mid-Term</b>			Commented [MP8]: C3
9		Sleep Treatments/ Behavioral Sleep Medicine	3,5		Commented [MP9]: C1/C2/C4
10		Sleep and the Psychobiological Basis of Learning and Memory	3,4		Commented [MP10]: C1/C2/C4
11		Theories and Research on Dreaming	3,5		Commented [MP11]: C1/C2/C4
		<b>Sleep Improvement Program Assignment Due</b>			Commented [MP12]: C3/C4
12		Sleep, Psychopathology, and Chronic Disease a. Depression b. Anxiety/PTSD c. Substance use d. Cardiovascular e. Metabolic	3,4		Commented [MP13]: C1/C2/C4
13		Sex, Cultural, Ethnic Differences in Sleep	2,3		Commented [MP14]: C1/C2/C4
14		Sleep and Lifestyle Behaviors a. Physical Activity b. Nutrition c. Social Relationships	2-5		Commented [MP15]: C1/C2/C4
		<b>Community Sleep Project Due</b>			Commented [MP16]: C3/C4
15		Daytime Sleepiness and Safety Issues in Society	3,4		Commented [MP17]: C1/C2/C4
		<b>Course Evaluation Dedicated Time</b>			
16		<b>Final Exam</b>	1-5		Commented [MP18]: C3

**Materials:** There is a required text for this course, and reading assignments from seminal and recent articles and reviews, which will be posted on the course website.

**Required Textbook:**

Moorcraft, W. H. (2013). *Understanding sleep and dreaming*. (2<sup>nd</sup> ed.). New York, NY: Springer.

**Readings by Week (Articles on Blackboard):**

**Week 1:**

Moorcraft: Chapter 2, pages 17-26  
Chapter 3, pages 39-43, 57-65

Aserinsky, E., & Kleitman N. (1953). Regularly occurring periods of eye motility, and concomitant phenomena, during sleep. *Science*, 118, 273-274.

**Week 2:**

Moorcraft: Chapter 2, pages 32-36  
Chapter 4, pages 67-77

**Week 3:**

Moorcraft: Chapter 5

**Week 4:**

Moorcraft, Chapter 2, pages 26-31  
Chapter 4, pages 78-83

**Week 5:**

Moorcraft: Chapter 10, pages 236-249

**Week 6:**

Moorcraft: Chapter 3, pages 43-57  
Chapter 12, pages 293-300

Deliens, G., Gilson, M., & Peigneux, P. (2014). Sleep and the processing of emotions. *Experimental Brain Research*, 232, 1403-1414.

Durmer, J. S., & Dinges, D. F. (2005). Neurocognitive consequences of sleep deprivation. *Seminars in neurology*, 25(1), 117-129.

Womack, S. D., Hook, J. N., Reyna, S. H., & Ramos, M. (2013). Sleep loss and risk-taking behavior: a review of the literature. *Behavioral Sleep Medicine*, 11(5), 343-359.

**Week 7:**

Moorcraft: Chapter 12, pages 308-319  
Chapter 13, pages 323-341

**Week 8:** None – Mid-term

**Week 9:**

Moorcraft: Chapter 6, pages 130-131  
Chapter 13, pages 344-350

Morin CM et al. (2006). Psychological and behavioral treatment of insomnia: update of the recent evidence (1998-2004). *Sleep*, 29, 1398-1414.

Morin CM et al. (2009). Cognitive behavioral therapy, singly and combined with medication, for persistent insomnia: a randomized controlled trial. *JAMA*, 301(19), 2005-2015.

**Week 10:**

Curcio, G., Ferrara, M., & De Gennaro, L. (2006). Sleep loss, learning capacity and academic performance. *Sleep Medicine Reviews*, 10, 323-337.

Stickgold, R. (2005). Sleep-dependent memory consolidation. *Nature*, 437, 1272-1278.

Wamsley EJ et al. (2010). Dreaming of a learning task is associated with enhance sleep-dependent memory consolidation. *Current Biology*, 20, 850-866.

**Week 11:**

Moorcraft: Chapter 9, pages 214-224  
Chapter 11, pages 272-284

Dement, W., & Kleitman, N. (1957). The relation of eye movements during sleep to dream activity: an objective method for the study of dreaming. *Journal of Experimental Psychology*, 53(1), 339-346.

Hobson, J. A. (2009). REM sleep and dreaming: towards a theory of protoconsciousness. *Nature Reviews Neuroscience*, 10, 1-11.

**Week 12:**

Riemann, D., Berger, M., & Voderholzer, U. (2001). Sleep and depression - results from psychobiological studies: an overview. *Biological Psychology*, 57, 67-103.

Buysse, D. J., Angst, J., Gamma, A., Ajdacic, V., Eich, D., & Rossler, W. (2008). Prevalence, course, and co-morbidity of insomnia and depression in young adults. *Sleep*, 31, 473-480.

Vgontzas AN et al. (2009). Insomnia with objective short sleep duration is associated with a high risk for hypertension. *Sleep*, 32, 491-497.

**Week 13:**

Moorcraft: Chapter 4, pages 83-86

Petrov, M. E., & Lichstein, K. L. (in press). Differences in sleep between black and white adults: an update and future directions. *Sleep Medicine*.

Zhang, B., & Wing, Y. (2006). Sex differences in insomnia: a meta-analysis. *Sleep, 29*, 85-93.

Krishnan, V., Collop, N. A. (2006). Gender differences in sleep disorders. *Current Opinions in Pulmonary Medicine, 12*, 383-389.

**Week 14:**

Moorcraft: Chapter 6, pages 133-139

Buman, M. P., & King, A. C. (2010). Exercise as a treatment to enhance sleep. *American Journal of Lifestyle Medicine, 4*(6), 500-514.

Peuhkari, K., Sihvola, N., & Korpela, R. (2012). Diet promotes sleep duration and quality. *Nutrition Research, 32*, 309-319.

Troxel, W. M., Robles, T. F., Hall, M., & Buysse, D. J. (2007). Marital quality and the marital bed: examining the covariation between relationship quality and sleep. *Sleep Medicine Reviews, 11*(5), 389-404.

**Week 15:**

Moorcraft: Chapter 12, pages 300-305

Cartwright, R. (2004). Sleepwalking violence: a sleep disorder, a legal dilemma, and a psychological challenge. *American Journal of Psychiatry, 161*, 1149-1158.

Martiniuk, A. L. C., Senserrick, T., Lo, S., Williamson, A., Du, W., Grunstein, R. R., . . . Ivers, R. Q. (2013). Sleep-deprived young drivers and the risk for crash: the DRIVE prospective cohort study. *JAMA Pediatrics, 167*(7), 647-655.

Owens, J. A., Belon, K., & Moss, P. (2010). Impact of delaying school start time on adolescent sleep, mood, and behavior. *Archives of Pediatric and Adolescent Medicine, 164*(7), 608-614.

**Course Evaluations:** Course evaluations are a very important part of running a university. They are an opportunity for you to directly reflect on the teaching you experienced, and provide feedback so adjustments can be made. Your feedback whether extreme or in the middle is incredibly valuable for promoting better learning for future students.

**Disability Accommodations:** In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at the Disability Resource Centers (DRC) facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. Students requesting accommodation for a disability must be

registered with the Disability Resource Center (DRC) and submit appropriate documentation from the DRC to the Course Faculty. (See SSM 701–01 for more information).

*Note: Prior to receiving disability accommodations, verification of eligibility from the Disability Resource Center (DRC) is required.* The DRC is located in University Center, 411 N. Central Avenue, Suite 160. DRC staff can also be reached at: 602-496-4321 (V), 602-496-0378 (TTY), and at: [Disability-Q](#). Their hours are 8:00 AM to 5:00 PM, Monday through Friday. Eligibility and documentation policies can be viewed at: <http://www.asu.edu/drc>. *Disability information is confidential.*

### **Academic Conduct**

Students are subject to the behavioral standards set forth in ASU Student Academic Integrity Policy (see Student Academic Integrity Policy) as well as the Student Code of Conduct (see SSM 104–01)

Avoid threatening behavior. Course faculty will manage any threatening behavior in accordance with SSM 104–02, “Handling Disruptive, Threatening, or Violent Individuals on Campus” •

Adhere to behavior standards for Computer, Internet, and Electronic Communications (see ACD 125)

- o Turn off or mute all electronic devices during all course related activities. May respond or initiate use of electronic devices only in emergent situations or if faculty request you to use.
- o Understand that during course related activities, computers, laptops, tablets, smart phones, etc may be used for course related purposes only.

**Information in the syllabus, other than grade and absence policies, may be subject to change with reasonable advance notice.**

### **Title IX**

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you

can find information and resources  
at <http://sexualviolenceprevention.asu.edu/faqs/students>.

### **Copyright**

Module/course content, including lectures and written materials distributed to the class, are under copyright protection. Module/course content, including lectures, are copyrighted material and students may not sell notes taken during the conduct of the course. (see ACD 304–06, “Commercial Note Taking Services” for more information).

Draft Date: 05/22/2015

William H. Moorcroft

# Understanding Sleep and Dreaming

*2nd Edition*

 Springer

Acknowledgments

also to the Poudre River Public Library at National Jewish Health

ence+Business Media, Sharon for assistance and guidance and questions.  
nowledge, my apologies and my

and, Christina, who for over 40 years. She has also been a champion in so many ways. And I my writing in this edition and

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Chapter 1  
A Visit to a Sleep Lab

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1.1 A Visit to a Sleep Lab: Sleep S

1.2 A Second Night in the Sleep La

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If you were asked to determine for? You probably would check the person is relaxed and still, be to see if they were breathing reg have at one time or another de believing you were asleep. Then appearing to be asleep. It is ap person is asleep simply by obser up and ask if they were asleep willingly and accurately tell you It is rather like the joke my fath 'Were you in the boat when the in the water!'"

There are two important impl another person is asleep. First, u little scientific study of sleep. T tively new knowledge, and som beliefs. Second, most studies of sleeper is attached to sensitive sleep without disturbing it. Ho portable equipment has allowed outside the lab. Sleep labs have

Adapted from Moorcroft (1993), wit

W. H. Moorcroft, *Understanding Slee*  
DOI: 10.1007/978-1-4614-6467-9\_1,  
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