

Hans P.A. Van Dongen, Ph.D.**Director, Sleep and Performance Research Center**

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ACADEMIC POSITIONS

Professor (tenured), Elson S. Floyd College of Medicine, Washington State University Spokane, July 2016–present.

Research Professor (permanent budget line), Elson S. Floyd College of Medicine, Washington State University Spokane, July 2014–July 2016.

Research Professor, Sleep and Performance Research Center, and Department of Integrative Physiology and Neuroscience, Washington State University Spokane, July 2009–June 2014.

Associate Research Professor, Sleep and Performance Research Center, Washington State University Spokane, October 2005–June 2009.

Research Associate Professor of Sleep and Chronobiology, Department of Psychiatry, University of Pennsylvania, July 2004–September 2005.

Research Assistant Professor of Sleep and Chronobiology, Department of Psychiatry, University of Pennsylvania, July 1999–June 2004.

Postdoctoral Researcher, Division of Sleep and Chronobiology, Department of Psychiatry, University of Pennsylvania, June 1998–June 1999.

Predoctoral Fellow, Division of Sleep and Chronobiology, Department of Psychiatry, University of Pennsylvania, January 1998–March 1998.

Research Assistant, Department of Physiology and Physiological Physics, Leiden University, The Netherlands, March 1991–March 1994.

EDUCATION

Ph.D. degree in Psychophysiology, 1998. Department of Physiology and Physiological Physics, Leiden University, The Netherlands.

M.S. degree in Astrophysics, 1993. Leiden Observatory, School of Mathematics and Natural Sciences, Leiden University, The Netherlands.

GRANTS AND CONTRACTS**Grants and Contracts Serving as Principal Investigator:**

Washington Research Foundation, *Clinical Sleep Research Facility*, September 2018–present.

Congressionally Directed Medical Research Programs (Department of Defense), *Investigating Striatal Attentional Circuits to Understand and Mitigate Deficits in Cognitive Flexibility Due to Sleep Loss*, May 2018–present.

Jazz Pharmaceuticals, *FACT: Flexible Attention Control Task*, September 2017–present.

Congressionally Directed Medical Research Programs (Department of Defense), *Sleep Deprivation Effects on Cognitive Flexibility in Dynamic Decision-Making Environments*, July 2016–present.

Federal Express Corporation, *FedEx FRM Scientific Advice*, October 2015–present.

Defense University Research Instrumentation Program (Department of Defense), *Instrumentation for Physiological and Neurobehavioral Measurement in Around-the-Clock, High-Fidelity Laboratory Studies of the Impact of Fatigue on Warfighter Performance*, September 2017–September 2018.

Institutes for Behavior Resources, *Mathematical Model of Fatigue*, June 2016–November 2017.

NASA Ames Research Center, *Guidance on the Use of the WSU Fatigue Model*, May 2016–November 2016.

Commercialization Gap Fund (Washington State University), *User Interface and Commercialization Plan for Drowsy Driver Detection at Moderate Levels of Fatigue*, April 2015–June 2016.

Office of Naval Research, *Enabling the Identification of Biomarkers for Individual Susceptibility to Fatigue: Scaling up from Attentional Processes to Operational Performance*, December 2012–November 2015.

Regional Airline Association, *Fatiguing Effects of Multiple Segment Flight Schedules*, April 2010–September 2015.

Transport Canada (subcontract under Institutes for Behavior Resources), *Investigation of Effective Recovery and Napping Strategies for Commercial Motor Vehicle Drivers* (Project PI: James F), September 2008–May 2015. (Includes Research Assistant supplement, November 2010–December 2010.)

Naval Postgraduate School, *Sleep Assessment Operations Research*, September 2013–September 2014.

Pulsar Informatics, *Development and Validation of FedEx Fatigue Model*, January 2014–August 2014.

Department of Transportation (subcontract under Pulsar Informatics), *Individualized Fatigue Management Program Technology for Trucking Operations, Phase II* (Project PI: Mollicone DJ), August 2012–May 2014.

Naval Medical Logistics Command (subcontract under Pulsar Informatics), *Individualized Fatigue Based Scheduling and Countermeasure System, Subproject 2* (Project PI: Mollicone DJ), April 2012–December 2013.

Office of Naval Research (subcontract under Pulsar Informatics), *Individualized Fatigue Based Scheduling and Countermeasure System, Subproject 1* (Project PI: Mollicone DJ), November 2011–December 2013.

Federal Motor Carrier Safety Administration (subcontract under Virginia Tech Transportation Institute), *Field Study on the Efficacy of the New Restart Provision for Hours of Service*, October 2012–October 2013.

Office of Naval Research (subcontract under Pulsar Informatics), *Individualized Fatigue Based Scheduling and Countermeasure System, Subproject 3* (Project PI: Mollicone DJ), January 2012–December 2012.

The Boeing Company, *Boeing – Pilot Fatigue Project*, August 2010–December 2012.

Office of Naval Research (subcontract under Pulsar Informatics), *Unobtrusive, Wearable Sensor Array to Collect Actigraphy, Ship Motion, Vibration, Noise and Temperature, Phase I* (Project PI: Mollicone DJ), December 2011–November 2012.

Transportation Research Board of the National Academies (subcontract under Battelle Center for Human Performance & Safety), *Identifying and Reducing Worker, Inspector, and Manager Fatigue in Rapid Renewal Environments* (Project PI: Sanquist T), November 2009–August 2012.

Air Force Office of Scientific Research, *Homeostatic and Circadian Modulation of Cognition: Integrating Mathematical and Computational Modeling Approaches*, March 2009–May 2012.

Federal Aviation Administration, *Sleep Deprived Blood Samples*, February 2011–February 2012.

Sleep Research Society Foundation, *Elliott D. Weitzman M.D. Research Grant: Biomarkers of Vulnerability to Sleep Loss*, August 2010–August 2011.

Federal Motor Carrier Safety Administration (subcontract under Virginia Tech Transportation Institute), *Effectiveness of 34-Hour Restart Provision for Recycling with Optimal Performance – Phase 2*, February 2010–October 2010.

The Boeing Company, *Sleep Science in Aviation*, October 2009–November 2009.

Federal Motor Carrier Safety Administration (subcontract under Virginia Tech Transportation Institute), *Effectiveness of 34-Hour Restart Provision for Recycling with Optimal Performance*, September 2008–November 2009.

Air Force Office of Scientific Research, *Workshop on Components of Cognition and Fatigue: From Laboratory Experiments to Mathematical Modeling and Operational Applications*, March 2009–September 2009.

U.S. Army Medical Research and Materiel Command (subcontract under Pulsar Informatics), *Tool for Individualized Performance Prediction during Military Operations Including Prophylactic Nap Sleep and Caffeine Countermeasures* (Project PI: Mollicone DJ), October 2006–September 2008.

Air Force Office of Scientific Research, *Individualized Biomathematical Modeling of Fatigue and Performance*, January 2005–February 2008.

National Heart, Lung, and Blood Institute (NIH), *R01 Individual Differences in Response to Sleep Deprivation*, April 2002–March 2007. (Includes Minority Graduate Research Assistant supplement, September 2003–March 2005.)

Qantas Airways, *Scientific Evaluation of the Biomathematical Modeling Proposed to Assess Sleep Opportunity in Qantas Duty Schedules as Part of the Fatigue Risk Management System Project*, November 2006–December 2006.

Cephalon, *Biomathematical Modeling for Provigil Armodafinil Head to Head Study*, January 2006–September 2006.

U.S. Army Medical Research and Materiel Command, *State and Trait Estimation in Performance Modeling*, October 2004–June 2005.

Universities Space Research Association (NASA), *Biomathematical Model of Fatigue and Performance Impairment from Chronic Sleep Loss*, June 2003–September 2003.

NASA Headquarters, *Predicting Vulnerability to Performance Impairment from Sleep Loss*, September 1999–September 2002.

Army Research Office, *Neurobehavioral Vulnerability to Performance Failure as a Phenotypic Response to Sleep Loss*, January 1999–June 2000.

Foundation “De Drie Lichten,” The Netherlands, *Morningness/Eveningness and Response to Sleep Deprivation*, January 1998–June 1998.

Grants and Contracts Serving as Co-Principal Investigator:

Mars Wrigley Confectionery US, *Effect of Mastication on Sustained Attention* (PI: Hansen D), December 2018–present.

National Science Foundation, *Threat-Assessment Tools for Management-Coupled Cyber- and Physical-Infrastructure* (PI: Roy S), September 2015–present.

Federal Motor Carrier Safety Administration (subcontract under Virginia Tech Transportation Institute), *Flexible Sleeper Berth Pilot Program* (PI: Honn KA; Project PI: Hanowski RJ), October 2015–September 2018.

Office of Naval Research, *A Double-Blind, Placebo-Controlled, Cross-Over Investigation of Caffeine Pharmacodynamics during 48 Hours of Sleep Loss* (PI: Grant DA), January 2015–December 2017.

Office of Naval Research (subcontract under Pulsar Informatics), *Unobtrusive, Wearable Sensor Array to Collect Actigraphy, Ship Motion, Vibration, Noise and Temperature, Phase II* (PI: Grant DA; Project PI: Mollicone DJ), May 2013–October 2016.

College of Pharmacy (Washington State University), *Understanding Mechanisms Responsible for Carcinogenesis by Shift Work in Humans* (PI: Gaddameedhi S), February 2015–April 2016.

Alcohol and Drug Abuse Research Program (State of Washington), *Chronotype, Social Jetlag and Nicotine Dependence in Heavy Using Smokers* (PI: Lumper N), July 2014–August 2015.

Alcohol and Drug Abuse Research Program (State of Washington), *Objective Markers of Sleep Disturbance as Predictors of Smoking Relapse* (PI: Bender AM), July 2013–May 2014.

Defense University Research Instrumentation Program (Department of Defense), *Measuring Fatigue in Neuronal Assemblies within the Cerebral Cortex* (PI: Wisor JP), June 2012–May 2013.

Congressionally Directed Medical Research Programs (Department of Defense), *Laboratory and Field Studies of Sleep and Performance* (PI: Belenky G), October 2005–April 2013.

Continental Airlines, *Continental Airlines WSU ULR Sleep and Performance Study – Phase III* (PI: Belenky G), September 2009–June 2011.

Federal Motor Carrier Safety Administration (subcontract under Virginia Tech Transportation Institute), *Investigation of Split Sleep Schedules on Commercial Vehicle Driver Safety and Health* (PI: Belenky G), March 2008–June 2011.

Federal Motor Carrier Safety Administration (subcontract under Virginia Tech Transportation Institute), *Motor Coach Driver Fatigue Research* (PI: Belenky G), March 2008–June 2011.

W.M. Keck Foundation, *New Theoretical, Technical, and Experimental Approaches to Brain Organization of Sleep and Performance* (PI: Belenky G), January 2007–June 2011.

Continental Airlines, *Sleep and Performance in Continental Airlines Ultra-Long-Range Flight Operations* (PI: Belenky G), February 2008–April 2011.

Department of Transportation (subcontract under Pulsar Informatics), *Individualized Fatigue Management Program Technology for Trucking Operations, Phase I* (Project PI: Mollicone DJ), July 2010–December 2010.

Defense University Research Instrumentation Program (Department of Defense), *Critical Job Tasks Simulation Laboratory Expansion for WSU Sleep and Performance Research Center* (PI: Vila BJ), May 2008–July 2009.

American Transportation Research Institute, *Literature Review and Mathematical Modeling of Divided versus Consolidated Sleep with Particular Reference to Sleeper Berth Use* (PI: Belenky G), July 2007–December 2007.

Defense University Research Instrumentation Program (Department of Defense), *Sleep and Performance Research Center: Enabling State-of-the-Art Data Collection, Integration, Analysis, Archiving, Data*

Sharing, and Education in Human Sleep and Performance Research (PI: Belenky G), April 2006–April 2007.

NASA Ames Research Center, *Biomathematical Modeling Software for Astronaut Scheduling* (PI: Dinges DF), April 2003–February 2007.

Air Force Office of Scientific Research, *New Approaches to Modeling Sleep/Wake Dynamics and Cognitive Performance* (PI: Terman D), July 2006–December 2006.

Air Force Office of Scientific Research, *Effects of Cognitive Task Difficulty on Sleep-Wake Homeostasis* (PI: Dinges DF), July 2005–September 2005.

NASA Ames Research Center, *Sleep/Wake Cycles of the MER Team Working a Mars Day: Opportunity for Enhancement of the Astronaut Scheduling Assistant* (PI: Mallis MM), April 2004–June 2005.

Air Force Office of Scientific Research, *Homeostatic and Circadian Regulation of Wakefulness during Jet Lag and Sleep Deprivation: Effect of Wake-Promoting Countermeasures* (PI: Dinges DF), June 2000–June 2005.

Cephalon, *Investigation of Modafinil Treatment for Performance Impairing Sleepiness Associated with Night Shift Work* (PIs: Czeisler CA, Dinges DF), November 1998–October 1999.

Grants and Contracts Serving as Co-Investigator:

National Center for Complementary & Integrative Health (NIH) (subcontract under University of Washington), *Mutual Effects of Sleep and Pain in Veterans with Chronic Pain: A Supplemental Grant* (PI: Jensen MP), 2016–present.

National Heart, Lung, and Blood Institute (NIH) (subcontract under Los Angeles Biomedical Research Institute), *R01 Understanding Hormonal Mechanisms of Sleep Restriction* (PI: Liu PY), 2014–present.

National Heart, Lung, and Blood Institute (NIH) (subcontract under University of California Davis), *R01 Longitudinal Measurement of the Changing Sleep Need in Adolescence* (PI: Feinberg I), 2013–present.

Kootenai Health, *Survey of Sleep Health in a Community Hospital* (PI: Wilson M), 2015–2017.

Office of Naval Research, *Analyzing Novel Experimental Research Data to Better Understand and Manage Fatigue Across the Range of Military Operations* (PI: Vila BJ), 2015–2017.

National Institute of Neurological Disorders and Stroke (NIH), *R21 Uncoupling Sleep Deprivation-Associated Stressors From Sleep Loss In Rodents* (PI: Davis CJ), 2014–2017.

University of South Australia, *Development Trial, ARC Discovery Grant: Napping on Night Shift, Problematic or Safety-Critical?* (PI: Dorrian J), 2014.

Proposal Development Stimulus Program (Washington State University), *Ageing, Sleep and Cognition: Pilot Project* (PI: Whitney P), 2013–2014.

National Cancer Institute (NIH), *R21 Information Throughput in Risky Decision Making Underlying Self-Regulation* (PI: Hinson JM), 2011–2014.

Office of Naval Research, *Impact of Work-Related Fatigue on Deadly Force Judgment and Decision Making Performance and Driving Performance Among Day vs. Night Sleepers* (PI: Vila BJ), 2013.

Defense Advanced Research Projects Agency, *Empowering the Strategic Corporal: Training Young Warfighters to Be Socially Adept with Strangers in Any Culture* (PI: Vila BJ), 2012–2013.

National Heart, Lung, and Blood Institute (NIH), *R01 Mechanisms of Sleep Loss Effects on Cognitive Components of Decision Making* (PI: Jackson ML), 2011.

Defense Advanced Research Projects Agency (subcontract under Advanced Brain Monitoring), *Accelerating Realistic Deadly-Force Judgment and Decision Making Training* (Project PI: Berka C), 2009–2011.

National Institute of Nursing Research (NIH), *R01 Neurobehavioral Effects of Partial Sleep Deprivation* (PI: Dinges DF), 2004–2009.

Transportation Security Administration, *Prediction of Fatigue and Effects on Vigilance and Target Detection* (PI: Dinges DF), 2004–2005.

National Heart, Lung, and Blood Institute (NIH), *R01 Mechanisms of Differential Sleepiness in Sleep Apnea* (PI: Weaver TE), 2003–2005.

National Institute of Mental Health (NIH), *R01 Genetics of Rest: Activity Behavior in Mice* (PI: Bućan M), 2002–2005.

National Institute of Aging (NIH), *R01 The Mechanisms of Alterations in Sleep with Age* (PI: Hendricks JC), 2001–2005.

National Space Biomedical Research Institute (NASA), *Countermeasures to Neurobehavioral Deficits from Cumulative Partial Sleep Deprivation during Space Flight* (PI: Dinges DF), 1998–2005.

Cephalon, *Neurobehavioral Core – Cephalon 305* (PI: Dinges DF), 2001–2004.

PATENTS

System and Methods for Individualized Alertness Prediction, US patent number 8,781,796, issued July 2014.

Alertness Monitoring Systems and Associated Methods, US patent number 8,676,444, issued March 2014.

PUBLICATIONS

Peer-Reviewed Papers in International Journals:

Wilson M, Permito R, English A, Albritton S, Coogle C, Van Dongen HPA. Performance and sleepiness in nurses working 12-hour day shifts or night shifts in a community hospital. *Accident Analysis and Prevention*, in press.

Sparrow AR, LaJambe CM, Van Dongen HPA. Drowsiness measures for commercial motor vehicle operations. *Accident Analysis and Prevention*, in press.

Skornyakov E, Gaddameedhi S, Paech GM, Sparrow AR, Satterfield BC, Shattuck NL, Layton ME, Karatsoreos I, Van Dongen HPA. Cardiac autonomic activity during simulated shift work. *Industrial Health*, in press.

Mollicone D, Kan, K, Mott C, Bartels R, Bruneau S, Van Wollen M, Sparrow AR, Van Dongen HPA. Predicting performance and safety based on driver fatigue. *Accident Analysis and Prevention*, in press.

Honn KA, Hinson JM, Whitney P, Van Dongen HPA. Cognitive flexibility: a distinct element of performance impairment due to sleep deprivation. *Accident Analysis and Prevention*, in press.

Hansen DA, Ramakrishnan S, Satterfield BC, Wesensten NJ, Layton ME, Reifman J, Van Dongen HPA. Randomized, double-blind, placebo-controlled, cross-over study of the effects of repeated-dose caffeine on neurobehavioral performance during 48 hours of total sleep deprivation. *Psychopharmacology*, in press.

Fournier LR, Grant DA, Stubblefield AM, Van Dongen HPA. Action plan interrupted: Resolution of proactive interference while coordinating execution of multiple action plans during sleep deprivation. *Psychological Research*, in press.

Wilson M, Riedy SM, Himmel M, English A, Burton J, Albritton S, Johnson K, Morgan P, Van Dongen HPA. Sleep quality, sleepiness and the influence of workplace breaks: A cross-sectional survey of health-care workers in two US hospitals. *Chronobiology International*, 2018; 35(6): 849–852.

Vanderheyden WM, Goodman AG, Taylor RH, Frank MG, Van Dongen HPA, Gerstner JR. Astrocyte expression of the *Drosophila* TNF-alpha homologue, Eiger, regulates sleep in flies. *PLoS Genetics*, 2018; 14(10): e1007724.

Uyhelji HA, Kupfer DM, White VL, Jackson ML, Van Dongen HPA*, Burian DM*. Exploring gene expression biomarker candidates for neurobehavioral impairment from total sleep deprivation. *BMC Genomics*, 2018; 19: 341. *Shared senior authorship.

Skene DJ, Skornyakov E, Chowdhury NR, Gajula RP, Middleton B, Satterfield BC, Porter KI, Van Dongen HPA*, Gaddameedhi S*. Separation of circadian- and behavior-driven metabolite rhythms in humans provides a window on peripheral oscillators and metabolism. *Proceedings of the National Academy of Sciences of the United States of America*, 2018; 115(3): 7825–7830. *Shared senior authorship.

Satterfield BC, Hinson JM, Whitney P, Schmidt MA, Wisor JP, Van Dongen HPA. Catechol-O-methyltransferase (COMT) genotype affects cognitive control during total sleep deprivation. *Cortex*, 2018; 99: 179–186.

Ratcliff R, Van Dongen HPA. The effects of sleep deprivation on item and associative recognition memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 2018; 44(2): 193–208.

Prasad B, Steffen AD, Van Dongen HPA, Pack FM, Strakovsky I, Staley B, Dinges DF, Maislin G, Pack AI, Weaver TE. Determinants of sleepiness in obstructive sleep apnea. *Sleep*, 2018; 41(2): zsx199.

Patterson PD, Higgins JS, Van Dongen HPA, Buysse DJ, Thackery RW, Kupas DF, Becker DS, Dean BE, Lindbeck GH, Guyette FX, Penner JH, Violanti JM, Lang ES, Martin-Gill C. Evidence-based guidelines for fatigue risk management in Emergency Medical Services. *Prehospital Emergency Care*, 2018; 22: 89–101.

Martin-Gill C, Higgins JS, Van Dongen HPA, Buysse DJ, Thackery RW, Kupas DF, Becker DS, Dean BE, Lindbeck GH, Guyette FX, Penner JH, Violanti JM, Lang ES, Patterson PD. Proposed performance measures and strategies for implementation of the fatigue risk management guidelines for Emergency Medical Services. *Prehospital Emergency Care*, 2018; 22: 102–109.

James FO, Waggoner LB, Weiss PM, Patterson PD, Higgins JS, Lang ES, Van Dongen HPA. Does implementation of biomathematical models mitigate fatigue and fatigue-related risks in Emergency Medical Services operations? A systematic review. *Prehospital Emergency Care*, 2018; 22: 69–80.

Honn KA, Grant DA, Hinson JM, Whitney P, Van Dongen HPA. Total sleep deprivation does not significantly degrade semantic encoding. *Chronobiology International*, 2018; 35(6): 746–749.

Dawson D, Reynolds AC, Van Dongen HPA, Thomas MJW. Determining the likelihood that fatigue was present in a road accident: A theoretical review and suggested accident taxonomy. *Sleep Medicine Reviews*, 2018; 42: 202–210.

Dakup PP, Porter KI, Little AA, Gajula RP, Zhang H, Skornyakov E, Kemp MG, Van Dongen HPA, Gaddameedhi S. The circadian clock regulates cisplatin-induced toxicity and tumor regression in melanoma mouse and human models. *Oncotarget*, 2018; 9(18): 14524–14538.

Campbell IG, [Van Dongen HPA](#), Gainer M, Karmouta E, Feinberg I. Differential and interacting effects of age and sleep restriction on daytime sleepiness and vigilance in adolescence: a longitudinal study. *Sleep*, 2018; 41(12): zsy177.

Bender AM, [Van Dongen HPA](#), Samuels CH. Sleep quality and chronotype differences between elite athletes and non-athlete controls. *Clocks & Sleep*, 2018; 1: 3–12.

Whitney P, Hinson JM, Satterfield BC, Grant DA, Honn KA, [Van Dongen HPA](#). Sleep deprivation diminishes attentional control effectiveness and impairs flexible adaptation to changing conditions. *Scientific Reports*, 2017; 7: 16020.

Walsh MM, Gunzelmann G, [Van Dongen HPA](#). Computational cognitive modeling of the temporal dynamics of fatigue from sleep loss. *Psychonomic Bulletin & Review*, 2017; 24: 1785–1807.

Skornyakov E, Shattuck NL, Winser MA, Matsangas P, Sparrow AR, Layton ME, Gabehart RJ, [Van Dongen HPA](#). Sleep and performance in simulated Navy watch schedules. *Accident Analysis and Prevention*, 2017; 99: 422–427.

Satterfield BC, Wisor JP, Schmidt MA, [Van Dongen HPA](#). Time-on-task effect during sleep deprivation in healthy young adults is modulated by dopamine transporter genotype. *Sleep*, 2017; 40(12): zsx167.

Rusterholz T, Tarokh L, [Van Dongen HPA](#)^{*}, [Achermann P](#)^{*}. Interindividual differences in the dynamics of the homeostatic process are trait-like and distinct for sleep versus wakefulness. *Journal of Sleep Research*, 2017; 26(2): 171–178. ^{*}Shared senior authorship.

Kishi A, [Van Dongen HPA](#), Natelson BH, Bender AM, Palombini LO, Bittencourt L, Tufik S, Ayappa I, Rapoport DM. Sleep continuity is positively correlated with sleep duration in laboratory nighttime sleep recordings. *PLoS ONE*, 2017; 12(4): e0175504.

James SM, Honn KA, Gaddameedhi S, [Van Dongen HPA](#). Shift work: disrupted circadian rhythms and sleep – implications for health and well-being. *Current Sleep Medicine Reports*, 2017; 3: 104–112.

Hilditch CJ, Dorrian J, Centofanti SA, [Van Dongen HPA](#), Banks S. Sleep inertia associated with a 10-min nap before the commute home following a night shift: A laboratory simulation study. *Accident Analysis and Prevention*, 2017; 99: 411–415.

Higgins JS, Michael J, Austin R, Åkerstedt T, [Van Dongen HPA](#), Watson N, Czeisler C, Pack AI, Rosekind MR. Asleep at the wheel – The road to addressing drowsy driving. *Sleep*, 2017; 40(2): zsx001.

Grant DA, Honn KA, Layton ME, Riedy SM, [Van Dongen HPA](#). 3-minute smartphone-based and tablet-based psychomotor vigilance tests for the assessment of reduced alertness due to sleep deprivation. *Behavior Research Methods*, 2017; 49(3): 1020–1029.

Gerstner JR, Perron IJ, Riedy SM, Yoshikawa T, Kadotani H, Owada Y, [Van Dongen HPA](#), Galante RJ, Dickinson K, Yin JCP, Pack AI, Frank MG. Normal sleep requires the astrocyte brain-type fatty acid binding protein FABP7. *Science Advances*, 2017; 3: e1602663.

Chavali VP, Riedy SM, [Van Dongen HPA](#). Signal-to-Noise Ratio in PVT performance as a cognitive measure of the effect of sleep deprivation on the fidelity of information processing. *Sleep*, 2017; 40(3): zsx016.

Sparrow AR, Mollicone DJ, Kan K, Bartels R, Satterfield BC, Riedy SM, Unice A, [Van Dongen HPA](#). Naturalistic field study of the restart break in US commercial motor vehicle drivers: Truck driving, sleep, and fatigue. *Accident Analysis and Prevention*, 2016; 93: 55–64.

Prasad B, Usmani S, Steffen AD, [Van Dongen HPA](#), Pack FM, Strakovsky I, Staley B, Dinges DF, Maislin G, Pack AI, Weaver TE. Short-term variability in apnea-hypopnea index during extended home portable monitoring. *Journal of Clinical Sleep Medicine*, 2016; 12(6): 855–863.

Lammers-van der Holst HM, Van Dongen HPA, Drosopoulos S, Kerkhof GA. Inter-individual differences in sleep response to shift work in novice police officers – A prospective study. *Chronobiology International*, 2016; 33(6): 671–677.

Kogan C, Kalachev L, Van Dongen HPA. Prediction accuracy in multivariate repeated-measures Bayesian forecasting models. *Computational and Mathematical Methods in Medicine*, 2016; 4724395.

Honn KA, Satterfield BC, McCauley P, Caldwell JL, Van Dongen HPA. Fatiguing effect of multiple take-offs and landings in regional airline operations. *Accident Analysis and Prevention*, 2016; 86: 199–208.

Hilditch CJ, Short M, Van Dongen HPA, Centofanti SA, Dorrian J, Kohler M, Banks S. Sleep inertia during a simulated 6-h on/6-h off fixed split duty schedule. *Chronobiology International*, 2016; 33(6): 685–696.

Dubowy CM, Moravcevic K, Yue Z, Wan JY, Van Dongen HPA, Sehgal A. Genetic dissociation of daily sleep and sleep following thermogenetic sleep deprivation in *Drosophila*. *Sleep*, 2016; 39(5): 1083–1095.

Whitney P, Hinson JM, Jackson ML, Van Dongen HPA. Feedback blunting: Total sleep deprivation impairs decision making that requires updating based on feedback. *Sleep*, 2015; 38(5): 745–754.

Tarokh L, Rusterholz T, Achermann P*, Van Dongen HPA*. The spectrum of the non-rapid eye movement sleep EEG following total sleep deprivation is trait-like. *Journal of Sleep Research*, 2015; 24(4): 360–363. *Shared senior authorship.

Satterfield BC, Wisor JP, Field SA, Schmidt MA, Van Dongen HPA. TNF α G308A polymorphism is associated with resilience to sleep deprivation-induced psychomotor vigilance performance impairment in healthy young adults. *Brain, Behavior, and Immunity*, 2015; 47: 66–74.

Oonk M, Davis CJ, Krueger JM, Wisor JP, Van Dongen HPA. Sleep deprivation and time-on-task performance decrement in the rat psychomotor vigilance task. *Sleep*, 2015; 38(3): 445–451.

Pellegrino R, Kavakli IH, Goel N, Cardinale CJ, Dinges DF, Kuna STR, Maislin G, Van Dongen HPA, Tufik S, Hogenesch JB, Hakonarson H, Pack AI. A novel BHLHE41 variant is associated with short sleep and resistance to sleep deprivation in humans. *Sleep*, 2014; 37(8): 1327–1336.

Hurdiel R, Van Dongen HPA, Aron C, McCauley P, Jacolot L, Theunynck D. Sleep restriction and degraded reaction-time performance in Figaro solo sailing races. *Journal of Sports Sciences*, 2014; 32(2): 172–174.

Satterfield BC, Van Dongen HPA. Occupational fatigue, underlying sleep and circadian mechanisms, and approaches to fatigue risk management. *Fatigue: Biomedicine, Health and Behavior*, 2013; 1(3): 118–136.

Rangan S, Van Dongen HPA. Quantifying fatigue risk in model-based fatigue risk management. *Aviation, Space, and Environmental Medicine*, 2013; 84(2): 155–157.

Rangan S, Bowman JL, Hauser WJ, McDonald WW, Lewis RA, Van Dongen HPA. Integrated fatigue modeling in crew rostering and operations. *Canadian Aeronautics and Space Journal*, 2013; 59(1): 1–6.

McCauley P, Kalachev LV, Mollicone DJ, Banks S, Dinges DF, Van Dongen HPA. Dynamic circadian modulation in a biomathematical model for the effects of sleep and sleep loss on waking neurobehavioral performance. *Sleep*, 2013; 36(12): 1987–1997.

Jackson ML, Gunzelmann G, Whitney P, Hinson JM, Belenky G, Rabat A, Van Dongen HPA. Deconstructing and reconstructing cognitive performance in sleep deprivation. *Sleep Medicine Reviews*, 2013; 17: 215–225.

Jackson JE, Sanquist T, Campbell J, Lee E-B, Van Dongen HPA. Fatigue in highway construction workers: Risks and countermeasures in rapid renewal project schedules. *Transportation Research Record*, 2013; 2347: 11–18.

Gazendam JAC, Van Dongen HPA, Grant DA, Freedman NS, Zwaveling JH, Schwab R. Altered circadian rhythmicity in patients in the ICU. *Chest*, 2013; 144(2): 483–489.

Forsman PM, Vila BJ, Short RA, Mott CG, Van Dongen HPA. Efficient driver drowsiness detection at moderate levels of drowsiness. *Accident Analysis and Prevention*, 2013; 50: 341–350.

Waggoner LB, Grant DA, Van Dongen HPA, Belenky G, Vila B. A combined field and laboratory design for assessing the impact of night shift work on police officer operational performance. *Sleep*, 2012; 35(11): 1575–1577.

Van Dongen HPA, Bender AM, Dinges DF. Systematic individual differences in sleep homeostatic and circadian rhythm contributions to neurobehavioral impairment during sleep deprivation. *Accident Analysis and Prevention*, 2012; 45S: 11–16.

Reynolds AC, Dorrian J, Liu PY, Van Dongen HPA, Wittert GA, Harmer LJ, Banks S. Impact of five nights of sleep restriction on glucose metabolism, leptin and testosterone in young adult men. *PLoS ONE*, 2012; 7(7): e41218.

Hurdiel R, Monaca C, Mauvieux B, McCauley P, Van Dongen HPA, Theunynck D. Field study of sleep and functional impairments in solo sailing races. *Sleep and Biological Rhythms*, 2012; 10: 270–277.

Van Dongen HPA, Belenky G, Vila BJ. The efficacy of a restart break for recycling with optimal performance depends critically on circadian timing. *Sleep*, 2011; 34(7): 917–929.

Van Dongen HPA, Belenky G, Krueger JM. A local, bottom-up perspective on sleep deprivation and neurobehavioral performance. *Current Topics in Medicinal Chemistry*, 2011; 11: 2414–2422.

Ratcliff R, Van Dongen HPA. Diffusion model for one-choice reaction time tasks and the cognitive effects of sleep deprivation. *Proceedings of the National Academy of Sciences of the United States of America*, 2011; 108(27): 11285–11290.

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Dinges DF, Van Dongen HPA. *Biomathematical Modeling Software for Astronaut Scheduling*. NASA Ames Research Center, Moffett Field, California, 2007.

Gunzelmann GK, Gluck KA, Van Dongen HPA, O'Connor RM, Dinges DF. *Neurobehaviorally Inspired ACT-R Model of Sleep Deprivation: Decreased Performance in Psychomotor Vigilance*. Report No. AFRL-HE-AZ-TR-2006-0045. Air Force Research Laboratory, Mesa, Arizona, 2006.

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Van Dongen HPA, Dinges DF, Neri DF, Maislin G, Baynard MD. *Predicting Vulnerability to Performance Impairment from Sleep Loss*. NASA Headquarters, Washington, D.C., 2003.

Van Dongen HPA, Olofsen E, VanHartevelt JH, Kruyt EW. *Periodogram Analysis of Unequally Spaced Data: The Lomb Method* (ISBN 90-803851-1-5). Leiden University, Leiden, The Netherlands, 1997.

Selected Other Publications:

Van Dongen HPA. Evidence-based guidelines for fatigue risk management in Emergency Medical Services: A significant step forward and a model for other high-risk industries. *Prehospital Emergency Care*, 2018; 22: 110–112.

Honn KA, Garde AH, Fischer FM, Van Dongen HPA. 22nd International Symposium on Shiftwork and Working Time: Challenges and solutions for healthy working hours. *Chronobiology International*, 2016; 33(6): 581–588.

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Huber R, Nir Y, Vyazovskiy V, Van Dongen H. Local sleep: Its origin and function. *Sleep Research Society Bulletin*, 2013; 19(2): 12–14.

Van Dongen HPA. Connecting the dots: From trait vulnerability during total sleep deprivation to individual differences in cumulative impairment during sustained sleep restriction. *Sleep*, 2012; 35(8): 1031–1033.

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Van Dongen HPA, Mott CG, Huang JK, Mollicone DJ, McKenzie FD, Dinges DF. Confidence intervals for individualized performance models. *Sleep*, 2007; 30(9): 1083.

Varkevisser M, Van Dongen HPA, Kerkhof GA. Hyperarousal as a basis for chronic insomnia: statistical misconceptions and individual differences. *Sleep*, 2006; 29(5): 719.

Van Dongen HPA. Polysomnography entails no more than minimal risk. *Sleep*, 2005; 28(2): 276.

Van Dongen HPA. Brain activation patterns and individual differences in working memory impairment during sleep deprivation. *Sleep*, 2005; 28(4): 386–388.

Van Dongen HPA. Comparison of model predictions to experimental data: Rectifying false impressions. *Aviation, Space, and Environmental Medicine*, 2004; 75(3): A122–A124.

Van Dongen HPA, Dinges DF. Sleep debt and cumulative excess wakefulness. *Sleep*, 2003; 26(3): 249.

Van Dongen HPA, Dinges DF. Modeling the effects of sleep debt: On the relevance of inter-individual differences. *Sleep Research Society Bulletin*, 2001; 7(3): 69–72.

(more than 200 published peer-reviewed abstracts not listed)

LECTURES AND ORAL PRESENTATIONS

International Presentations:

Biomathematical modeling of fatigue based on a local, bottom-up perspective on sleep deprivation and neurobehavioral performance. University of Sydney; Sydney, Australia, October 2018.

New insights into cognitive impairment due to sleep deficiency in healthy individuals and patients with sleep disorders. Woolcock Institute of Medical Research; Sydney, Australia, October 2018.

Dealing with multiple dimensions of fitness for duty in biomarker development. Sleep DownUnder 2018; Brisbane, Australia, October 2018.

Shift work and desynchronization of central and peripheral oscillators as seen through the lens of human metabolomics. Sleep DownUnder 2018; Brisbane, Australia, October 2018.

Interindividual variability in sleepiness and performance in the workplace in women and men. Sleep DownUnder 2018; Brisbane, Australia, October 2018.

Basic and clinical sleep and circadian science as a foundation for fatigue risk management in occupational settings. European Sleep Research Society; Basel, Switzerland, September 2018.

Individual differences in the effects of sleep deprivation on performance: Cognitive and genetic differentiation of bottom-up and top-down brain processes. University of Helsinki; Helsinki, Finland, September 2018.

Targeted metabolomics, peripheral oscillators, and metabolic health in shift work. University of Helsinki; Helsinki, Finland, September 2018.

Individual susceptibility to fatigue: impacts for the transportation industry. Fatigue in Transportation Forum; Montreal, Canada, June 2018.

Naturalistic field study of truck drivers: the restart break between duty cycles and its effect on sleep and fatigue. 23rd International Symposium on Shiftwork and Working Time; Uluru, Australia, June 2017.

Lab and field studies of sleep and performance in repeated cycles of shift work. 2016 Modeling Shift Work and Circadian Disruption: From Neuron to Organism; Bergen, Norway, September 2016.

The importance of animal models of shift work to inform clinical research and practice. 2016 Modeling Shift Work and Circadian Disruption: From Neuron to Organism; Bergen, Norway, September 2016.

Sustained sleep restriction and cumulative cognitive impairment: Allostatic changes in a sleep-homeostatic, adenosinergic pathway? European Sleep Research Society; Bologna, Italy, September 2016.

Sleep deprivation impairs decision-making in dynamically changing settings due to failure to process feedback information. WorldSleep2015; Istanbul, Turkey, November 2015.

A new dynamic: Sleep/wake homeostasis and the effects of chronic sleep restriction on sleep and sleepiness. WorldSleep2015; Istanbul, Turkey, November 2015.

Sustained sleep restriction and cumulative cognitive impairment: Allostatic change in a sleep-homeostatic, adenosinergic pathway? University of Zurich; Zurich, Switzerland, October 2015.

Model predictions of workplace fatigue. 22nd International Symposium on Shiftwork and Working Time; Elsinore, Denmark, June 2015.

A high-fidelity simulator experiment to investigate fatigue in multi-segment flight operations. 9th International Conference on Managing Fatigue; Fremantle, Australia, March 2015.

Sleep deprivation, cognitive effects, and underlying neurobiology. University of South Australia; Adelaide, Australia, March 2015.

Inter-individual differences in sustained attention deficits resulting from sleep deprivation. European Sleep Research Society; Tallinn, Estonia, September 2014.

Field and laboratory studies on shift work, sleep and performance: Police officers and truck drivers. Finnish Institute of Occupational Health; Helsinki, Finland, September 2014.

Applying mathematics and physics to predict fatigue. University of Helsinki; Helsinki, Finland, September 2014.

Feedback blunting: A novel mechanism underlying deficits in real-world decision making due to sleep loss. 21st International Symposium on Shiftwork and Working Time; Costa do Sauípe, Brazil, November 2013.

Mathematical models and fatigue at work. 21st International Symposium on Shiftwork and Working Time; Costa do Sauípe, Brazil, November 2013.

Basic and applied studies of chronic sleep loss and its cognitive effects. Dalhousie University; Halifax, Canada, October 2013.

Chronic sleep restriction, cognitive performance impairment, and societal impact. Canadian Sleep Society; Halifax, Canada, October 2013.

Fatigue science initiatives. Regional Airline Association 38th Annual Convention; Montreal, Canada, May 2013.

WSU–RAA pilot fatigue study. Joint Meeting of Regional Operations Council & Safety Council, Regional Airline Association; Montreal, Canada, May 2013.

WSU–RAA pilot fatigue study. Board of Directors Meeting, Regional Airline Association; Montreal, Canada, May 2013.

How to facilitate intellectual property transfer from academia to industry in the sleep technology field – from the impact of chronobiology on occupational demands, medical conditions, and life style. ISSTA International Sleep Science & Technology Forum; Taipei, Taiwan, March 2013.

Sleep deprivation and its effects on cognition. Duke-NUS Graduate Medical School; Singapore, Singapore, October 2012.

Cognitive components of degraded decision-making when sleep-deprived. European Sleep Research Society; Paris, France, September 2012.

Sleep loss and cognition. Medical Center Haaglanden – Westeinde; The Hague, The Netherlands, April 2012.

Fatigue from sleep loss: Objective deficits and subjective experiences. American Psychosomatic Society 70th Annual Scientific Meeting; Athens, Greece, March 2012.

The effectiveness of a restart break to sustain performance across consecutive work shifts depends on the circadian timing of the shifts. WorldSleep2011; Kyoto, Japan, October 2011.

Introduction to fatigue modeling and applying sleep science to proposed rulemaking for commercial aviation: Maximum duty periods and predicted fatigue. 20th International Symposium on Shiftwork and Working Time; Stockholm, Sweden, June 2011.

Sleepiness and individual differences. The Sleepy Brain Symposium; Stockholm, Sweden, June 2011.

Effects of insufficient sleep on performance and health. Medical Tribune; Tokyo, Japan, June 2011.

Effects of insufficient sleep on performance and health. Sanofi-Aventis; Tokyo, Japan, June 2011.

Predicting cognitive impairment: On the dynamics of sleep homeostasis. Centre for Integrated Research and Understanding of Sleep; Sydney, Australia, April 2011.

New concepts and developments in model-based fatigue risk management. Woolcock Institute of Medical Research; Sydney, Australia, April 2011.

Fatigue associated with recycling between periods of shift work is a function of circadian timing of shift schedule and number of biological nights in recycling break. 8th International Conference on Managing Fatigue in Transportation, Resources and Health; Fremantle, Australia, March 2011.

Fatigue risk management: Applying sleep science in operational settings. University of Amsterdam; Amsterdam, The Netherlands, March 2011.

Fatigue risk management in commercial aviation. KLM Health Services; Schiphol, The Netherlands, February 2011.

Vigilance and performance: Variability over tasks, individuals, and time. VU University Amsterdam; Amsterdam, The Netherlands, February 2011.

Sleep homeostatic regulation of cognitive performance: Dynamic modulation over days and weeks. European Sleep Research Society; Lisbon, Portugal, September 2010.

The recuperative potential of a 34h rest period between two consecutive 5-day work periods depends critically on the circadian timing of the work shifts. European Sleep Research Society; Lisbon, Portugal, September 2010.

Fatigue and its effects on performance and health. Université du Littoral Côte d'Opale; Dunkerque, France, April 2010.

Mathematical modeling of fatigue. Université du Littoral Côte d'Opale; Dunkerque, France, April 2010.

Fatigue, physiology, and neurobehavioral performance. Université du Littoral Côte d'Opale; Dunkerque, France, April 2010.

Managing sleep, fatigue, and performance in flight operations. Civil Aviation Administration of China; Beijing, China, November 2009.

Cognitive performance impairment: Contribution of homeostatic, circadian, and individual variability factors. University of Surrey; Guildford, England, November 2007.

Status and perspectives of the 2-process model: Neurobehavioral functions. International Symposium on 25 Years with the Two-Process Model of Sleep Regulation; Ittingen, Switzerland, September 2007.

Individual differences in neurobehavioral impairment from sleep loss. WorldSleep07; Cairns, Australia, September 2007.

Evidence for sleep use-dependence from laboratory studies of human sleep and sleep deprivation. WorldSleep07; Cairns, Australia, September 2007.

Trait and state individual differences in sleep structure. European Sleep Research Society; Innsbruck, Austria, September 2006.

Individual differences in sleep and sleep deprivation. Max Planck Institute of Psychiatry; Munich, Germany, September 2006.

Effects of variation in cognitive workload during sleep deprivation. World Federation of Sleep Research and Sleep Medicine Societies; New Delhi, India, September 2005.

Sleep and circadian rhythms in critically ill patients. World Federation of Sleep Research and Sleep Medicine Societies; New Delhi, India, September 2005.

Theoretical and mathematical predictions of the two-process model relative to sleep debt and excess wakefulness. World Federation of Sleep Research and Sleep Medicine Societies; New Delhi, India, September 2005.

Differential vulnerability to sleep loss. European Sleep Research Society; Prague, Czech Republic, October 2004.

The neurobehavioral effects of chronic sleep loss. University of Calgary. Calgary, Canada, May 2004.

Individual differences in cognitive performance capability during sleep deprivation. Department of Psychology, University of Amsterdam; Amsterdam, The Netherlands, April 2004.

Chronic sleep restriction. Swedish Society of Medicine; Stockholm, Sweden, August 2002.

Chronic partial sleep deprivation data point to a novel process regulating waking behavioral alertness. European Sleep Research Society; Reykjavik, Iceland, June 2002.

Sleep loss, neurobehavioral performance and psychological factors. International Workshop on Facets of Wakefulness and Sleepiness: Causes, Consequences, and Assessment; Ascona, Switzerland, March 2002.

Statistical modeling of the waking neurobehavioral response to chronic partial sleep deprivation. International Workshop on Facets of Wakefulness and Sleepiness: Causes, Consequences, and Assessment; Ascona, Switzerland, March 2002.

Sleep deprivation in health and disease: Consequences and countermeasures. Psychiatric Clinic of the University of Tübingen; Tübingen, Germany, December 2001.

Sleep deprivation and circadian misalignment: Stressors in the 24-hour society. Federal University of São Paulo; São Paulo, Brazil, October 2001.

Sleep inertia: Effects of homeostatic drive, circadian rhythm, and caffeine. European Sleep Research Society; Istanbul, Turkey, September 2000.

Chronic partial sleep deprivation: Neurobehavioral response and sleep architecture. World Federation of Sleep Research Societies; Dresden, Germany, October 1999.

Sleep inertia following 2-hour naps occurring every 12 hours during 88 hours of partial sleep deprivation. World Federation of Sleep Research Societies; Dresden, Germany, October 1999.

Seasonal covariation in circadian phases of rectal temperature and slow wave sleep. Division of Sleep and Chronobiology, University of Pennsylvania; Philadelphia, Pennsylvania, August 1997.

National Presentations:

Catechol-O-methyltransferase (COMT) genotype affects dynamic decision making during sleep deprivation. Military Health System Research Symposium; Orlando, Florida, August 2018.

Separating circadian- and behavior-driven metabolite rhythms in simulated shift work. SLEEP 2018; Baltimore, Maryland, June 2018.

Circadian rhythm disruption and health. Aerospace Medical Association; Dallas, Texas, May 2018.

Impaired cognitive flexibility due to sleep deprivation predicts degraded deadly force decision-making in high-fidelity law enforcement simulations. SLEEP 2017; Boston, Massachusetts, June 2017.

Impairments in cognitive performance and emotion regulation due to sleep deprivation. SLEEP 2017; Boston, Massachusetts, June 2017.

Toward a common metric for risk assessment across diverse factors in fatigue risk management systems: Quantifying human performance in terms of signal-to-noise ratio. 10th International Conference on Managing Fatigue; San Diego, California, March 2017.

New approaches to scheduling based on fatigue modeling. 10th International Conference on Managing Fatigue; San Diego, California, March 2017.

Integration of impairment from fatigue with other operational risks. Air Traffic Organization, Federal Aviation Administration; Washington, D.C., November 2016.

Drowsy driving. American Association of Sleep Technologists; Denver, Colorado, June 2016.

Catechol-O-methyltransferase (COMT) genotype affects dynamic decision making during sleep deprivation. SLEEP 2016; Denver, Colorado, June 2016.

Sleep deprivation, feedback blunting and dopaminergic gene polymorphisms. University of Pennsylvania Perelman School of Medicine; Philadelphia, Pennsylvania, May 2016.

Fatigue from sleep loss and circadian misalignment: A fatigue risk management framework for Emergency Medical Services. Fatigue in Emergency Medical Services, National Highway Traffic Safety Administration; Washington, D.C., April 2016.

Basic review of chronobiology: Sleep/wake and alertness regulation and circadian principles. American Occupational Health Conference; Chicago, Illinois, April 2016.

FACT: flexible attention control task. Jazz Pharmaceuticals; Palo Alto, California, January 2016.

Public and corporate policy. Drowsy Driving Forum, National Highway Traffic Safety Administration; Washington, D.C., November 2015.

Beyond vigilance: Importance of sleep for cognitive flexibility and situational awareness. Restorative Effects of Sleep Workshop, Office of the Assistant Secretary of Defense & Office of Naval Research; Arlington, Virginia, August 2015.

WSU–RAA multi-segment operations fatigue study. Board of Directors, Regional Airline Association; Cleveland, Ohio, May 2015.

WSU–RAA multi-segment operations fatigue study. Joint Meeting of Regional Operations Council & Safety Council, Regional Airline Association; Cleveland, Ohio, May 2015.

WSU–RAA multi-segment operations fatigue study. National Transportation Safety Board; Washington, D.C., February 2015.

WSU–RAA multi-segment operations fatigue study. Federal Aviation Administration; Washington, D.C., February 2015.

Task load sensitive biomathematical model of the temporal dynamics of fatigue. Fatigue Modeling in Complex Environments Workshop; Oklahoma City, Oklahoma, February 2015.

Enhanced sleep estimation. Fatigue Modeling in Complex Environments Workshop; Oklahoma City, Oklahoma, February 2015.

Performance risk model. Fatigue Modeling in Complex Environments Workshop; Oklahoma City, Oklahoma, February 2015.

Findings from the field study on the efficacy of the new restart provision for HOS. Transportation Research Board of the National Academies 94th Annual Meeting; Washington, D.C., January 2015.

Sleep restriction, sleep homeostasis, and adenosinergic dynamics. David Geffen School of Medicine at UCLA; Los Angeles, California, November 2014.

Individual differences in cognitive vulnerability to sleep loss. Brasel Basic Science Conference, Harbor-UCLA Medical Center; Torrance, California, November 2014.

New insights into the effects of sleep loss on brain functioning. Nebraska Sleep Conference; Omaha, Nebraska, October 2014.

Basic principles of the effects of sleep deprivation on neurobehavioral performance. Nebraska Sleep Conference; Omaha, Nebraska, October 2014.

Recent advances in research on sleep loss and cognition at Washington State University. Wright-Patterson Air Force Base; Dayton, Ohio, August 2014.

Validation of a workload-sensitive mathematical model of the temporal dynamics of performance. SLEEP 2014; Minneapolis, Minnesota, June 2014.

Fatigue and fatigue countermeasures in occupational settings. SLEEP 2014; Minneapolis, Minnesota, June 2014.

Chronic sleep restriction, neurobehavioral impairment, and modeling of allostasis. SLEEP 2014; Minneapolis, Minnesota, June 2014.

Laboratory and field studies of sleep and fatigue in truck driver duty cycles and restart breaks. Oregon Institute of Occupational Health Sciences, Oregon Health & Science University; Portland, Oregon, April 2014.

Effects of circadian rhythm on sleep and performance in the laboratory and in operational settings. Center for Chronobiology Symposium, University of California San Diego; La Jolla, California, February 2014.

Sleep deprivation and performance. Workshop on Circadian Rhythms & Shiftwork, University of California San Diego; La Jolla, California, February 2014.

Sleep loss, sleep disorders and occupational safety (lecture dedicated to the late George Washington Baughman III, 1937–2012). Helmut S. Schmidt, MD Memorial Keynote Symposium: Sleep Medicine 2013; New Albany, Ohio, November 2013.

Sleep deprivation and cognitive functioning: New insights. Helmut S. Schmidt, MD Memorial Keynote Symposium: Sleep Medicine 2013; New Albany, Ohio, November 2013.

Field study of the efficacy of the new restart provision for hours of service. Federal Motor Carrier Safety Administration; Washington, D.C., October 2013.

Enabling the identification of biomarkers for individual susceptibility to fatigue: Scaling up from attentional processes to operational performance. Office of Naval Research; Arlington, Virginia, August 2013.

Outstanding issues in human sleep loss and cognitive functioning: The role of local, use-dependent sleep. SLEEP 2013; Baltimore, Maryland, June 2013.

Effects of sleep deprivation on dissociated components of cognition. Center for Sleep and Circadian Neurobiology, University of Pennsylvania; Philadelphia, Pennsylvania, March 2013.

Field study of the efficacy of the new Restart provision for Hours of Service. Trucking Alliance; Lowell, Arkansas, December 2012.

WSU–RAA fatigue study: Phase 2 findings. Board of Directors, Regional Airline Association; Fort Lauderdale, Florida, December 2012.

Update on fatigue science, fatigue risk management, and predictors of individual differences in vulnerability to fatigue. Office of Naval Research; Arlington, Virginia, November 2012.

Deconstructing performance degradation due to sleep loss. Division of Sleep Medicine, Harvard Medical School; Boston, Massachusetts, September 2012.

Sleep loss and fatigue: Designing transportation work schedules for enhanced safety, health, and productivity. Harvard School of Public Health; Boston, Massachusetts, September 2012.

Cognitive effects of sleep loss: Time on task, inter-individual and inter-task differences, local sleep, and the role of adenosine. Brockton Veterans Affairs Medical Center; Brockton, Massachusetts, September 2012.

Effects of chronic sleep restriction in man. Brockton Veterans Affairs Medical Center; Brockton, Massachusetts, September 2012.

Fatigue risk management. Fatigue Risk Management Plan Working Group, Federal Express Corporation; Memphis, Tennessee, February 2012.

FedEx and fatigue risk management. President and Senior Vice Presidents Meeting, Federal Express Corporation; Memphis, Tennessee, January 2012.

WSU–RAA multi-segment fatigue study. National Transportation Safety Board; Washington, D.C., November 2011.

Sleep deprivation and cognition: Breaking new ground. Wright-Patterson Air Force Base; Dayton, Ohio, November 2011.

Tools for managing fatigue: Basic principles. Performance Shaping Functions Workshop V, Office of Naval Research; Washington, D.C., October 2011.

Predicting cognitive impairment due to sleep loss. School of Biomedical Engineering, Science and Health Systems, Drexel University; Philadelphia, Pennsylvania, August 2011.

A circadian rhythm in skill-based errors in aviation maintenance. SLEEP 2011; Minneapolis, Minnesota, June 2011.

Recuperation from night shift work: Studies on recycling as a basis for federal law-making. SLEEP 2011; Minneapolis, Minnesota, June 2011.

Slow wave sleep is conserved during a simulated shiftwork schedule. SLEEP 2011; Minneapolis, Minnesota, June 2011.

Introduction: Tools for managing fatigue. Aviation Fatigue symposium; McLean, Virginia, June 2011.

Tools for managing fatigue: Basic principles. Aviation Fatigue symposium; McLean, Virginia, June 2011.

WSU–RAA multi-segment fatigue study. Aviation Fatigue symposium; McLean, Virginia, June 2011.

Applying models to the real world. Radcliffe Institute for Advanced Study, Harvard University; Cambridge, Massachusetts, May 2011.

Developing multi-scale models: From local brain states to overt cognitive functioning. Radcliffe Institute for Advanced Study, Harvard University; Cambridge, Massachusetts, May 2011.

Fatigue modeling and fatigue risk management. MX Fatigue Workgroup; Miami, Florida, February 2011.

Investigation into motor carrier practices to achieve optimal CMV driver performance. Transportation Research Board of the National Academies 90th Annual Meeting; Washington, D.C., January 2011.

Duration of restart period needed to recycle with optimal performance. Walter Reed Army Institute of Research; Silver Spring, Maryland, January 2011.

Performance prediction modeling and its role in fatigue risk management. Transportation Research Board of the National Academies 90th Annual Meeting; Washington, D.C., January 2011.

RAA-sponsored fatigue & performance study. Presidents' Council, Regional Airline Association; Washington, D.C., December 2010.

RAA-sponsored fatigue & performance study. Joint Regional Operations Council & Safety Council, Regional Airline Association; Washington, D.C., December 2010.

State-of-the-art fatigue modeling and fatigue risk management. Office of Naval Research; Arlington, Virginia, October 2010.

Fatigue modeling in aviation maintenance. MX Fatigue Workgroup; Houston, Texas, August 2010.

The effectiveness of a 34h restart break to sustain performance across two consecutive 5-day work periods depends on the circadian timing of the work shifts. SLEEP 2010; San Antonio, Texas, June 2010.

Fatigue study phase 1–3 overview, phase 1 progress, and airline involvement in phase 2. Regional Airline Association; Milwaukee, Wisconsin, May 2010.

Fatigue risk management systems: Basic principles and mathematical modeling. MITRE Center for Advanced Aviation System Development; McLean, Virginia, April 2010.

Combined effects of sleep deprivation and workload on cognitive performance. Taub Institute, Columbia University; New York, New York, March 2010.

Duration of restart period needed to recycle with optimal performance. Federal Motor Carrier Safety Administration; Washington, D.C., November 2009.

RAA pilot fatigue study & industry FRMS feasibility study. Presidents' Council, Regional Airline Association; Washington, D.C., November 2009.

RAA pilot fatigue study & industry FRMS feasibility study. Regional Operations Council & Safety Directors, Regional Airline Association; Washington, D.C., November 2009.

Investigating the temporal dynamics and underlying mechanisms of cognitive fatigue. Cognitive Fatigue Conference; Atlanta, Georgia, May 2009.

Biomathematical modeling of fatigue: Basic theoretical, mathematical and scientific concepts. International Conference on Fatigue Management in Transportation Operations; Boston, Massachusetts, March 2009.

Individual differences in response to sleep loss. International Conference on Fatigue Management in Transportation Operations; Boston, Massachusetts, March 2009.

Impact of chronic partial sleep deprivation on cognition. American Clinical Neurophysiology Society; Orlando, Florida, March 2009.

Neurobehavioral consequences of sleep loss. Clayton Sleep Institute; St. Louis, Missouri, November 2008.

Fatigue. Population Sleep Symposium, University of Pennsylvania; Philadelphia, Pennsylvania, September 2008.

Individual differences in vulnerability to fatigue. Warfighter Rapid Awareness Processing Technology Meeting; Honolulu, Hawaii, April 2008.

Managing sleep to sustain performance. Boeing Company; Seattle, Washington, March 2008.

- Bayesian forecasting for predicting individual performance: Foundational information.* Individual Differences Workshop; Baltimore, Maryland, February 2008.
- Fatigue and performance models in 24-hour operations: Potential and challenges.* National Center for Intermodal Transportation; Washington, D.C., November 2007.
- Recognizing and managing excessive sleepiness in patients with shift work disorder.* Medical Center Briefing; Kansas City, Missouri, August 2007.
- Briefing on sleep deprivation, cognitive performance, and biomathematical modeling.* JASON 2007 Summer Study; La Jolla, California, July 2007.
- Trait individual differences in the sleep structure of healthy young adults.* SLEEP 2007; Minneapolis, Minnesota, June 2007.
- Neurobiology and chronobiology of sleep.* American Thoracic Society; San Francisco, California, May 2007.
- Sleep and sleep deprivation: Trait inter-individual differences.* University of Chicago; Chicago, Illinois, October 2006.
- Modeling individual differences.* Joint SIAM-SMB Conference on the Life Sciences; Raleigh, North Carolina, August 2006.
- Astronaut Scheduling Assistant: Predicting neurobehavioral impairment under altered sleep/wake conditions.* Aerospace Medical Association; Orlando, Florida, May 2006.
- Consequences of insufficient sleep.* Advanced Sleep Medicine Course; La Jolla, California, February 2006.
- Development of an Astronaut Scheduling Assistant.* Habitation; Orlando, Florida, February 2006.
- A circadian biosignature in the Labeled Release data from Mars?* Optics & Photonics; San Diego, California, July 2005.
- Modeling human cognitive performance with the two-process model and beyond.* Associated Professional Sleep Societies; Denver, Colorado, June 2005.
- Mathematical models of neurobehavioral performance changes over time: Challenges and potential for use in scheduling tools.* Aerospace Medical Association; Kansas City, Missouri, May 2005.
- Investigating the neurobehavioral consequences of sleep deprivation.* Washington State University; Pullman, Washington, March 2005.
- Individual differences in neurobehavioral responses to sleep deprivation.* Human Factors Research Technology Division, NASA Ames Research Center; Moffett Field, California, September 2004.
- On performance impairment from sleep deprivation and sleep restriction.* Washington State University; Spokane, Washington, August 2004.
- Individual differences in cognitive deficits from sleep loss.* Washington State University; Pullman, Washington, August 2004.
- Inter-individual differences in sleep and wakefulness: Mathematical modeling.* Associated Professional Sleep Societies; Philadelphia, Pennsylvania, June 2004.
- Nonlinearity in the interaction between the circadian and homeostatic processes.* Associated Professional Sleep Societies; Philadelphia, Pennsylvania, June 2004.
- Changes in circadian rhythms/light levels in the ICU.* American Thoracic Society; Orlando, Florida, May 2004.

Foundation for the development of an Astronaut Scheduling Assistant. Habitation 2004 Conference; Orlando, Florida, January 2004.

Chronic sleep loss, excess wakefulness, and inter-individual differences in performance impairment. Department of Psychology, Brown University; Providence, Rhode Island, November 2003.

Current biomathematical models of temporal changes in human fatigue and performance. Human Factors Research Technology Division, NASA Ames Research Center; Moffett Field, California, August 2003.

New developments in biomathematical modeling of human fatigue and performance. Human Factors Research Technology Division, NASA Ames Research Center; Moffett Field, California, August 2003.

Principles of statistical analysis. Human Factors Research Technology Division, NASA Ames Research Center; Moffett Field, California, July 2003.

Statistical analysis and experimental design. Human Factors Research Technology Division, NASA Ames Research Center; Moffett Field, California, July 2003.

Sleep need and compensatory response to sleep loss: Can these factors be defined for individuals? Associated Professional Sleep Societies; Chicago, Illinois, June 2003.

Fatigue and safety: Chronic sleep loss, wake state instability, and inter-individual differences. Truck Driver Occupational Safety and Health Conference; Detroit, Michigan, April 2003.

Development of the Astronaut Scheduling Assistant: A biomathematical model to predict alertness and fatigue in astronauts. Bioastronautics Investigators' Workshop; Galveston, Texas, January 2003.

Trait and state vulnerability to performance impairment from sleep loss. Bioastronautics Investigators' Workshop; Galveston, Texas, January 2003.

Chronic partial sleep deprivation: Neurobehavioral performance deficits and inter-individual variability. Department of Neurobiology and Behavior, Walter Reed Army Institute of Research; Silver Spring, Maryland, July 2002.

Comparison of model predictions with experimental data. Fatigue and Performance Modeling Workshop, Department of Defense; Seattle, Washington, June 2002.

Repeated exposure to total sleep deprivation: Substantial trait differences in performance impairment among subjects. Associated Professional Sleep Societies; Seattle, Washington, June 2002.

A statistical model of cumulative sleep debt in chronic sleep restriction. Associated Professional Sleep Societies; Chicago, Illinois, June 2001.

Predicting vulnerability to performance impairment from sleep loss. Bioastronautics Investigators' Workshop; Galveston, Texas, January 2001.

Sleep deprivation. New Jersey chapter of the Human Factors & Ergonomics Society; Atlantic City, New Jersey, January 2001.

The effect of caffeine and naps on performance. College of West Virginia; Beckley, West Virginia, October 2000.

Understanding wakefulness. College of West Virginia; Beckley, West Virginia, October 2000.

Sustained low-dose caffeine administration reduces sleep inertia after nap sleep during 88h extended wakefulness. Associated Professional Sleep Societies; Las Vegas, Nevada, June 2000.

Circadian phase drift during 3.5 days of sleep restriction in dim light. International Congress on Chronobiology; Washington, D.C., August 1999.

The dynamics of chronically restricted sleep and recovery sleep. Associated Professional Sleep Societies; Orlando, Florida, June 1999.

Caffeine as a performance enhancing drug in airforce operations. Aerospace Medical Association; Detroit, Michigan, May 1999.

Power spectral analysis: Generalizing the invariance to time translation. Massachusetts Institute of Technology; Dedham, Massachusetts, May 1999.

Circadian and homeostatic interactions in waking neurobehavioral functions during partial and total sleep deprivation: Effects of caffeine. Committee on Military Nutrition Research; Washington, D.C., February 1999.

The circadian phase affects the sleep of insomniacs. Associated Professional Sleep Societies; New Orleans, Louisiana, June 1998.

Repeated "constant routine" recordings of the 24-hour rhythmicity. Dutch Society for Sleep-Wake Research; The Hague, The Netherlands, April 1998.

Seasonal variations in circadian rhythmicity. Department of Psychology, University of Amsterdam; Amsterdam, The Netherlands, March 1996.

Seasonal covariation of the circadian phases of body temperature and deep sleep. Dutch Society for Sleep-Wake Research; Tilburg, The Netherlands, November 1995.

Regional Presentations:

Cognitive deficits associated with sleep deprivation. Idaho Sleep Professionals Association; Boise, Idaho, October 2018.

Shift work, circadian clocks, and metabolism. Idaho Sleep Professionals Association; Boise, Idaho, October 2018.

Shift work, peripheral oscillators, and metabolic health. Pacific Northwest National Laboratory; Richland, Washington, May 2018.

Shift work, sleep loss, and managing fatigue risk. 2018 Northwest Safety & Health Summit; Anchorage, Alaska, May 2018.

Sleep deprivation: Effects on health, performance, and safety. 2017 Northwest Safety & Health Summit; Spokane, Washington, May 2017.

Diet, exercise, ... and sleep! Spokane Campus Health Fair, Washington State University; Spokane, Washington, October 2016.

Research and development to address sleep and fatigue in commercial motor vehicle drivers. PACCAR; Renton, Washington, July 2016.

Clinical and translational sleep research at WSU Spokane. Washington State University; Spokane, Washington, May 2016.

Why smart people make bad mistakes while sleep deprived. ARCS Foundation, Seattle Chapter; Seattle, Washington, December 2015.

The importance of sleep for the mind and the body. Schweitzer Engineering Laboratories; Pullman, Washington, December 2015.

Guarding your sleep health: Understanding risks and health promotion strategies for shift workers. Kootenai Health; Coeur d'Alene, Idaho, September 2015.

- The biology of shift work: The basics.* Washington State University; Spokane, Washington, June 2015.
- The cognitive effects of sleep deprivation.* Washington State University; Pullman, Washington, May 2015.
- The impact of sleep deprivation on your mind and body.* Spokane Dinner Club; Spokane, Washington, March 2015.
- Fatigue risk management 101.* Member Programs Expo, Association of Washington Cities; Spokane Valley, Washington, September 2013.
- Neurobiology of cognitive impairment from sleep loss.* IPN/Neuroscience Program Retreat, Washington State University; Pullman, Washington, June 2013.
- Outstanding Issues in Human Sleep Loss and Cognitive Functioning: The Role of Local, Use-Dependent Sleep.* Sleep and Performance Research Center, Washington State University; Spokane, Washington, April 2013.
- Managing sleep and fatigue in the workplace.* Neill Public Library; Pullman, Washington, July 2012.
- Human circadian/sleep interactions.* Translational Addiction Research Center, Washington State University; Pullman, Washington, March 2012.
- Sleep deprivation: Effects on performance and safety.* Washington Logging Safety Conference; Grand Mound, Washington, January 2012.
- Individual differences in sleep, sleep loss, and cognition.* Eastern Washington University; Cheney, Washington, September 2011.
- Sleep deprivation and cognition: Breaking new ground.* Riverpoint Biomedical Research Seminar Series; Spokane, Washington, September 2011.
- The importance of sleep.* Fairwinds; Spokane, Washington, June 2011.
- Sleepiness, cognitive impairment, and the management of fatigue.* Pacific Northwest Sleep Association Biennial Meeting; Stevenson, Washington, March 2011.
- Workshop on components of cognition and fatigue: An introduction.* Washington State University; Spokane, Washington, June 2009.
- Effects of sleep loss on cognitive processing.* Idaho Sleep Disorders Association; Meridian, Idaho, November 2008.
- Performance impairment during sleep deprivation and the physiology of recovery sleep depend on prior waking activity.* Washington State University; Pullman, Washington, February 2008.
- Sleep deprivation and circadian rhythms.* Washington State Department of Services for the Blind; Tacoma, Washington, October 2007.
- Sleep and sleep deprivation.* Spokane Chapter of the National Rehabilitation Association; Spokane, Washington, March 2007.
- Cognitive impairment from sleep loss: Individual differences and prediction.* Washington State University; Spokane, Washington, November 2006.
- Sleep, sleep deprivation, and cognitive performance.* Idaho Sleep Disorders Association; Coeur d'Alene, Idaho, November 2006.
- Inter-individual differences in cognitive impairment from sleep loss.* Washington State University; Spokane and Pullman, Washington, April 2006.

Managing sleep to sustain performance. Washington State University; Spokane, Washington, January 2006.

The effect of increased cognitive workload on cognitive impairment during sleep deprivation. Center for Sleep and Respiratory Neurobiology, University of Pennsylvania; Philadelphia, Pennsylvania, June 2005.

Circadian rhythms and other non-EEG applications of spectral analysis. School of Medicine, University of Pennsylvania; Philadelphia, Pennsylvania, March 2005.

Individual differences in cognitive deficits from sleep loss in the laboratory and in the simulated operational world. Center for Sleep and Respiratory Neurobiology, University of Pennsylvania; Philadelphia, Pennsylvania, December 2004.

Sleep and dreams in the sciences. Penn Humanities Forum, University of Pennsylvania; Philadelphia, Pennsylvania, October 2004.

Excess wakefulness and wake state instability. Graduate Humanities Forum, University of Pennsylvania; Philadelphia, Pennsylvania, October 2004.

Basics of spectral analysis. School of Medicine, University of Pennsylvania; Philadelphia, Pennsylvania, May 2004.

What can modeling do for sleep research? School of Veterinary Medicine, University of Pennsylvania; Philadelphia, Pennsylvania, April 2004.

Sleep deprivation. School of Nursing, University of Pennsylvania; Philadelphia, Pennsylvania, March 2004.

Circadian rhythms: Some current scientific issues. Center for Sleep and Respiratory Neurobiology, University of Pennsylvania; Philadelphia, Pennsylvania, October 2003.

The neurobehavioral price for wakefulness. Center for Sleep and Respiratory Neurobiology, University of Pennsylvania; Philadelphia, Pennsylvania, March 2003.

Predicting vulnerability to performance impairment from sleep loss. General Clinical Research Center, Hospital of the University of Pennsylvania; Philadelphia, Pennsylvania, December 2002.

Effects of sleep deprivation on glucose intolerance. Center for Sleep and Respiratory Neurobiology, University of Pennsylvania; Philadelphia, Pennsylvania, August 2001.

Sleep inertia. Center for Sleep and Respiratory Neurobiology, University of Pennsylvania; Philadelphia, Pennsylvania, January 2001.

Maintaining neurobehavioral performance capability during sustained operations: Effects of modafinil and power naps. Division of Sleep and Chronobiology, University of Pennsylvania; Philadelphia, Pennsylvania, October 2000.

Circadian rhythms and neurobehavioral performance in humans. David Mahoney Institute of Neurological Sciences; Philadelphia, Pennsylvania, April 2000.

The Lomb method for periodogram analysis in chronobiology. School of Medicine, Leiden University; Leiden, The Netherlands, May 1998.

The Lomb periodogram and aliasing. Department of Physiology and Physiological Physics, Leiden University; Leiden, The Netherlands, October 1997.

Seasonal variation in timing of sleep. Department of Physiology and Physiological Physics, Leiden University; Leiden, The Netherlands, February 1995.

SERVICE**Boards and Committees of Professional Societies:**

Circadian Rhythm Task Force, Sleep Research Society, 2019–present.

Board of Directors, Working Time Society, 2014–present.

Awards Nomination Committee, Sleep Research Society, 2017–2018.

Awards Review Task Force, Sleep Research Society, 2017.

Board Liaison to the Trainee Education Advisory Committee, Sleep Research Society, 2015–2017.

Board of Directors, Sleep Research Society, 2014–2017.

Communications Committee, Sleep Research Society, 2007–2010.

Research Committee, Sleep Research Society, 2004–2007.

Academic Committees:

Co-Chair, Shift Length Consensus Conference, American Academy of Sleep Medicine & Sleep Research Society, October 2018–present.

Member, expert panel for developing evidence based fatigue risk management guidelines for emergency medical services, National Association of State EMS Officials, December 2015–March 2018.

Member, Strengthening the Federal Motor Carrier Safety Administration Research and Technology Program, Transportation Research Board of the National Academies, December 2016–April 2017.

Member, scientific committee for *International Symposium on Somnolence and Safety (SomnoSafe)*, June 2015–February 2016.

Advisor, medical school curriculum development, Washington State University, June 2015–December 2015.

Member, Drowsy Driving Consensus Workgroup, National Sleep Foundation, October 2015–November 2015.

Member, Grand Challenges work group, *120-Day Study on the WSU Research Enterprise*, Washington State University, December 2014.

Member, steering committee for *Sustaining Health Initiative*, Washington State University, February 2014–October 2014.

Member, Maintenance Fatigue Work Group, Civil Aerospace Medical Institute, November 2008–August 2011.

Chair, Tools & Mitigation Working Group, MITRE Aviation Fatigue Research Roadmap Team, January 2011–April 2011.

Member, Goal-Specific Working Group #1 advising the Sleep Disorders Research Advisory Board of the National Center for Sleep Disorders Research at the NIH, October 2010–November 2010.

Member, MITRE special initiative on aviation fatigue research roadmap expert panel, April 2010.

Member, advisory group for *Warfighter Rapid Awareness Processing Technology* program, February 2008.

Member, steering committee for *Core Capability in Fatigue and Performance Modeling and Interventions Research*, Military Operational Medicine Research Program, October 2003–September 2007.

Founding Chair, Institutional Review Board for the sociobehavioral sciences, University of Pennsylvania, April 2001–August 2005.

Topic Director, Penn Humanities Forum 2004–2005 *Sleep and Dreams*, University of Pennsylvania, March 2003–June 2005.

Member, Institutional Review Board, University of Pennsylvania, March 2000–March 2001.

Member, National Space Biomedical Research Institute committee for developing goals, objectives and critical questions for future space-related research in *Human Performance Factors, Sleep and Chronobiology*, January 1999.

Chair, research group on *Physiological Systems Analysis*, Leiden University, The Netherlands, March 1994–May 1998.

Administrative Committees:

Member, Centers, Institutes and Laboratories Task Force, Washington State University, October 2017–present.

Member, Provost's Advisory Committee on Tenure and Promotion, Washington State University, August 2017–present.

Co-Chair, Pre-Award and Post-Award Advisory Group, Washington State University, March 2017–present.

Member, Advisory Board of the Washington State Twin Registry, Washington State University, May 2016–present.

Member, Elson S. Floyd College of Medicine LCME Accreditation Standard 4 Committee, Washington State University, January 2016–present.

Member (Chair, 2016), Faculty Excellence Award committee, Washington State University Spokane, April 2014–April 2018.

Co-Chair, Faculty Working Group, Drive to 25: Research and Development Expenditures Action Group, Washington State University, August 2017–March 2018.

Member, search committee for Chair of the Department of Medical Education and Clinical Sciences, Elson S. Floyd College of Medicine, Washington State University Spokane, October 2016–January 2017.

Member, search committee for three tenure-track positions in WWAMI Medical Education Program, Washington State University Spokane, September 2012–August 2013.

Member, search committee for tenure-track assistant professor in Department of Veterinary and Comparative Anatomy, Pharmacology and Physiology, Washington State University, September 2009–December 2010.

Member, search committee for Grants and Contracts Manager, Washington State University Spokane, September 2007–December 2007.

Chair, search committee for Study Coordinator, Sleep and Performance Research Center, Washington State University Spokane, February 2006–May 2006.

Chair, working group to develop *Training Modules for Human Subject Research in the Social and Behavioral Sciences*, University of Pennsylvania, September 2004–October 2005.

Member, IRB Protocol Tracking working group, University of Pennsylvania, January 2003–September 2005.

Co-Chair, working group to draft a *University Policy for the Conduct of Human Subject Research in the Social and Behavioral Sciences*, University of Pennsylvania, October 2002–September 2005.

Member, Human Subject Research Advisory Committee, University of Pennsylvania, May 2002–September 2005.

Co-Chair, working group to develop *IRB Guidelines for Human Research in the Social and Behavioral Sciences*, University of Pennsylvania, September 2001–August 2004.

Member, Council of the School of Mathematics & Natural Sciences, Leiden University, The Netherlands, August 1989–July 1992.

Grant Review Panels:

Member, NIH special emphasis panel / scientific review group, July 2012.

Member, Sleep Research Society Foundation grant review panel, January 2005–June 2009.

Member, NIH program project grant review panel, October 2008.

Member, NIH program project external review committee, October 2006.

Member, NIH special emphasis grant review panel, June 2006.

Member, NIH program project grant review panel (reverse site visit), October 2005.

Member, American Sleep Medicine Foundation grant review panel, May 2005.

Member, NIH special emphasis grant review panel, October 2002.

(16 ad hoc grant review panels not listed)

Thesis Committees:

Co-Chair, dissertation committee for S. Riedy, Washington State University, April 2018–present.

Member, dissertation committee for A. Stenson, Washington State University, March 2018–present.

Chair, dissertation committee for D. Sidebottom, Washington State University, September 2017–present.

Member, doctoral committee for S. Rangan, University of Tennessee, May 2017–present.

Opponent, dissertation defense of K. Pettersson, University of Helsinki, Finland, September 2018.

Member, dissertation committee for C. Wilson, Washington State University, October 2015–April 2018.

Co-Chair, dissertation committee for A. Sparrow, Washington State University, February 2015–October 2017.

Co-Chair, Master's thesis committee for S. Riedy, Washington State University, May 2016–July 2017.

Chair, dissertation committee for E. Skornyakov, Washington State University, November 2014–July 2017.

Chair, dissertation committee for B. Satterfield, Washington State University, October 2014–April 2017.

External Referee, Ph.D. thesis of J. Hopstaken, Erasmus University Rotterdam, Netherlands, August 2016.

Member, dissertation committee for D. Grant, Washington State University, May 2011–August 2016.

Second Promotor, dissertation committee for H.M. Lammers-van der Holst, University of Amsterdam, The Netherlands, August 2015–February 2016.

Member, dissertation committee for C. McAlister, Washington State University, March 2013–November 2015.

Member, dissertation committee for S. James, Washington State University, November 2012–July 2015.

Chair, dissertation committee for K. Honn, Washington State University, November 2013–March 2015.

Co-Chair, dissertation committee for A. Bender, Washington State University, August 2012–March 2015.

Chair, dissertation committee for M. Oonk, Washington State University, May 2012–March 2015.

Co-Chair, dissertation committee for C. Kogan, University of Montana, March 2012–June 2014.

Member, dissertation committee for J. Clinton, Washington State University, March 2009–January 2013.

External Examiner, Ph.D. thesis of D. Kong, NUS Graduate School for Integrative Sciences and Engineering, Singapore, December 2012.

Member, dissertation committee for L. Waggoner, Washington State University, March 2011–June 2012.

Co-Chair, Master's thesis committee for A. Bender, Washington State University, November 2011–April 2012.

Member, dissertation committee for L. Wu, Washington State University, March 2011–April 2012.

Content Expert, Master's thesis of J. Dorrian, University of South Australia, Australia, August 2011–January 2012.

Member, Master's thesis committee for S. James, Washington State University, February 2010–November 2011.

Chair, graduation jury for R. Hurdiel, Université du Littoral Côte d'Opale, France, April 2011–October 2011.

Member, Master's thesis committee for C. Sanders, Washington State University, August 2009–July 2011.

Member, dissertation committee for J. Cahall, Washington State University, April 2010–August 2010.

Co-chair, dissertation committee for P. McCauley, M.A., University of Montana, January 2009–December 2009.

Examiner, Ph.D. thesis of A. Phillips, University of Sydney, Australia, August 2009.

Examiner, Master's thesis of B. Fulcher, University of Sydney, Australia, December 2008.

Co-Chair, dissertation committee for A.M. Tucker, M.S., Washington State University, February 2007–August 2008.

Co-Promotor, dissertation committee for J.A.C. Gazendam, M.D., University of Groningen, The Netherlands, September 2007–January 2008.

Member, dissertation committee for D.J. Mollicone, Drexel University, September 2006–March 2007.

Member, dissertation committee for M. Varkevisser, University of Amsterdam, The Netherlands, January 2005–June 2005.

Member, dissertation committee for A.P.J. Van Eekelen, University of Amsterdam, The Netherlands, October 2003–April 2004.

Organization of Scientific Meetings:

Organizer, 24th *International Symposium on Shiftwork and Working Time*; Coeur d'Alene, Idaho, May 2016–present (conference planned for September 2019).

Organizer, symposium *Recent Advances in Fatigue Risk Management: From Fatigue Countermeasure Strategies to Sleep Science-Based Policy Making*, 24th Congress of the European Sleep Research Society; Basel, Switzerland, September 2018.

Co-organizer, National Institute for Occupational Safety and Health mini-symposium *Working Hours, Sleep, and Fatigue*, Washington State University; Spokane, Washington, August 2017–March 2018.

Judge, *Young Investigator Award*, Adelaide Sleep Retreat; Adelaide, Australia, November 2017.

Organizer, symposium *Sleep Deficiency, Cognition and Emotion*, SLEEP 2017; Boston, Massachusetts, June 2017.

Panelist, seminar *Managing Shift Work and Workplace Fatigue*, Safe Work Australia; Uluru, Australia, June 2017.

Sleep Research Society Board Liaison to the Program Committee of the *Annual Meetings of the Associated Professional Sleep Societies*, June 2016–June 2017.

Co-organizer, teaching course *Sleep-Wake Regulation: The Two-Process Model and Beyond*, 23rd Congress of the European Sleep Research Society; Bologna, Italy, September 2016.

Organizer, thematic session *Measurement and Prediction of Workplace Fatigue*, 22nd International Symposium on Shiftwork and Working Time; Elsinore, Denmark, June 2015.

Organizer, postgraduate course *Occupational Medicine and Sleep*, SLEEP 2015; Seattle, Washington, June 2015.

Co-organizer, symposium *New Findings on the Biology of Shift Work*, Sleep and Performance Research Center, Washington State University; Spokane, Washington, June 2015.

Panelist, moderated session *Closing Panel: Fatigue as a Public Health Issue*, 9th International Conference on Managing Fatigue; Fremantle, Australia, March 2015.

Program Committee member, *Annual Meetings of the Associated Professional Sleep Societies*; May 2009–June 2014.

Judge, *Center for Chronobiology Symposium* poster awards, University of California San Diego; La Jolla, California, February 2014.

Organizer, postgraduate course *Sleep Medicine in Occupational Settings*, SLEEP 2013; Baltimore, Maryland, June 2013.

Co-organizer, *WSU / UniSA Symposium*, Washington State University; Spokane, Washington, May 2013.

Panelist, moderated session *Panel Discussion: Transportation*, Harvard School of Public Health; Boston, Massachusetts, September 2012.

Organizer, symposium *Deconstructing the Sleep-Deprived Brain in Decision-Making*, 21st Congress of the European Sleep Research Society; Paris, France, September 2012.

Organizer, symposium *Advances in Operational Fatigue Risk Management*, WorldSleep2011; Kyoto, Japan, October 2011.

Organizer, symposium *Fatigue Risk Management: Translation from the Laboratory to the Operational Environment*, SLEEP 2011; Minneapolis, Minnesota, June 2011.

Panelist, moderated session *Working Group Presentations – Identified Needs and Next Steps*, Aviation Fatigue symposium; McLean, Virginia, June 2011.

Judge, *Young Investigator Award*, Adelaide Sleep Retreat; Adelaide, Australia, April 2011.

Organizer, symposium *New Concepts and Developments in Modeling of Sleep and Sleep Homeostasis*, Twentieth Congress of the European Sleep Research Society; Lisbon, Portugal, September 2010.

Moderator, pro/con debate *Predicting Fatigue in the Real World: Ready for Prime Time?* SLEEP 2010; San Antonio, Texas, June 2010.

Organizer, workshop *Understanding Sleep and the Consequences of Sleep Loss and Sleep Disorders*, Eastern Oregon Psychological Association; Joseph, Oregon, May 2010.

Organizer, workshop *Components of Cognition and Fatigue: From Laboratory Experiments to Mathematical Modeling and Operational Applications*, Sleep and Performance Research Center, Washington State University; Spokane, Washington, June 2009.

Technical Committee member, *Fatigue Modeling* track, 2009 International Conference on Fatigue Management in Transportation Operations: A Framework for Progress; Boston, Massachusetts, March 2009.

Panelist, cross-modal panel *Sleep Requirements in the Transportation Industry: One Size Fits All?* 2009 International Conference on Fatigue Management in Transportation Operations: A Framework for Progress; Boston, Massachusetts, March 2009.

Organizer, symposium *Use-Dependent Properties of Sleep*, WorldSleep07; Cairns, Australia, September 2007.

Co-organizer, symposium *Brain Dynamics During Sleep*, WorldSleep07; Cairns, Australia, September 2007.

Organizer, symposium *Individual Differences in Sleep: Basic Research and Clinical Relevance*, SLEEP 2007; Minneapolis, Minnesota, June 2007.

Co-organizer, international symposium *Sleeping, Waking, Working*, Sleep and Performance Research Center, Washington State University; Spokane, Washington, November 2006.

Co-organizer and moderator, workshop *New Approaches to Modeling Sleep/Wake Dynamics and Cognitive Performance*, Mathematical Biosciences Institute, Ohio State University; Columbus, Ohio, October 2006.

Organizer, symposium *Inter-Individual Differences in Sleep and Sleep Regulation: States and Traits*, Eighteenth Congress of the European Sleep Research Society; Innsbruck, Austria, September 2006.

Program Committee member, *2005 Sleep and Circadian DataBlitz*, Society for Neuroscience Annual Meeting; Washington, D.C., November 2005.

Organizer, symposium *Inter-Individual Differences in Sleep and Sleepiness*, World Federation of Sleep Research and Sleep Medicine Societies Second Interim Congress; New Delhi, India, September 2005.

Organizer, symposium *Computational Modeling of Sleep and Circadian Rhythms: From molecules to Behavior*, Associated Professional Sleep Societies 19th Annual Meeting; Denver, Colorado, June 2005.

Organizer, symposium *Modeling Sleep and Performance: Perspectives for the Future*, Associated Professional Sleep Societies 18th Annual Meeting; Philadelphia, Pennsylvania, June 2004.

Panelist, symposium *Current Concepts and Models of Response to Sleep Loss*, Associated Professional Sleep Societies 18th Annual Meeting; Philadelphia, Pennsylvania, June 2004.

Organizing Committee member, Center for Sleep and Respiratory Neurobiology *Inaugural Research Retreat*, University of Pennsylvania; Philadelphia, Pennsylvania, June 2004.

Workshop leader, hands-on workshop *Quantitative Model Evaluation*, NASA Ames Research Center; Moffett Field, California, August 2003.

Steering Committee member, Department of Defense *Fatigue and Performance Modeling Workshop*; Seattle, Washington, June 2002.

Organizer, symposium *Markers of "Sleep Debt" Accumulation and Recovery: Evidence for slow-wave activity, REM sleep, total sleep time?* Associated Professional Sleep Societies 15th Annual Meeting; Chicago, Illinois, June 2001.

(34 sessions chaired not listed)

Editorial Positions:

Guest Editor, *Chronobiology International*, June 2015–June 2016.

Deputy Editor, *Sleep*, October 2012–February 2016.

Member, Editorial Advisory Board, *Journal of Sleep Research*, March 2005–January 2016.

Chapter Reviewer, *Review of Human Factors and Ergonomics: Worker Fatigue and Transportation Safety*, July 2014.

Associate Editor, *Sleep*, June 2006–September 2012.

Founding Member, Editorial Board, *The Open Sleep Journal*, April 2007–April 2009.

Abstract Reviewer, *Associated Professional Sleep Societies*, December 1998–December 2008.

Book Proposal Evaluator, *Springer*, April 2006–October 2006.

Member, Editorial Board, *Hypnos*, January 2002–December 2004.

Member, Editorial Committee, *Aviation, Space, and Environmental Medicine* (Suppl. to Vol. 75), June 2002–March 2004.

Consulting Editor, *Psychophysiology*, March 2000.

Consulting Editor, *Health Psychology*, May 1999.

Reviewer: *Accident Analysis and Prevention*; *Acta Astronautica*; *Acta Psychologica*; *American Journal of Physiology*; *Archives of General Psychiatry*; *Aviation, Space, and Environmental Medicine*; *Behavioral Neuroscience*; *Biological Rhythm Research*; *Brain Research*; *Brazilian Journal of Medical and Biological Research*; *Chronobiology International*; *Clinical Neurophysiology*; *Cognitive Brain Research*; *European Respiratory Journal*; *Group Processes & Intergroup Relations*; *Journal of Biological Rhythms*; *Journal of Neuroscience*; *Journal of Sleep Research*; *Journal of Sports Sciences*; *Journal of the American Medical Association*; *Journal of Theoretical Biology*; *Naturwissenschaften*; *Neuropsychiatric Disease and Treatment*; *Neuropsychopharmacology & Biological Psychiatry*; *Open Sleep Journal*; *Perceptual and Motor Skills*; *Physiology & Behavior*; *PLoS Computational Biology*; *PLoS ONE*; *Proceedings of the National Academy of Sciences of the United States of America*; *Psychological Science*; *Psychonomic Bulletin & Review*; *Psychophysiology*; *Psychosomatic Medicine*; *Sleep*; *Sleep Medicine*; *Sleep Medicine Reviews*; *Sleep Research Online*; *Trends in Cognitive Sciences*.

TEACHING

Graduate Faculty, Nutrition and Exercise Physiology Program, Washington State University, March 2017–present.

Adjunct Faculty, Department of Integrative Physiology and Neuroscience, Washington State University, September 2014–present.

Affiliate Faculty, Clinical Psychology Program, Washington State University, May 2012–present.

Graduate Faculty, Neuroscience Program, Washington State University, October 2006–present.

Graduate Faculty, Experimental Psychology Program, Washington State University, March 2006–present.

Adjunct Faculty, Department of Psychology, Washington State University, March 2006–present.

Faculty, National Science Foundation Integrated Graduate Education and Research Training program “Integrative Training in Health-Assistive Smart Environments”, Washington State University, September 2009–August 2015.

Adjunct Faculty, Department of Veterinary and Comparative Anatomy, Pharmacology, and Physiology, Washington State University, October 2006–June 2009.

Associated Faculty, College of General Studies, University of Pennsylvania, September 1999–September 2005.

Courses:

Psych 499: Use of Psychophysiology Methods in Research (lecturer), special topics undergraduate course, Washington State University, fall semester 2015.

Neuro 540: Sleep from the Global Perspective to the Local Perspective (lecturer), special topics graduate course, Neuroscience Graduate Program, Washington State University, fall semester 2014.

Neuro 543: Sleep from the Global Perspective to the Local Perspective (lecturer), special topics graduate course, Neuroscience Graduate Program, Washington State University, fall semester 2011.

Neuro 540: Sleep (lecturer), special topics graduate course, Neuroscience Graduate Program, Washington State University, fall semester 2006.

Human Chronobiology and Sleep (course director), senior undergraduate and post-baccalaureate course, College of General Studies, University of Pennsylvania, fall semester 2003.

Human Chronobiology and Sleep (course director), senior undergraduate and post-baccalaureate course, College of General Studies, University of Pennsylvania, fall semester 2001.

Human Chronobiology and Sleep (course director), senior undergraduate and post-baccalaureate course, College of General Studies, University of Pennsylvania, fall semester 1999.

Chronobiology (lecturer), laboratory course for undergraduate students, Department of Biomedical Science, Leiden University, The Netherlands, academic year 1997–1998.

Multiple Sleep Latency Test (teaching assistant), laboratory course for undergraduate students, Department of Psychology, Leiden University, The Netherlands, spring semester 1997.

International Winter School on Chronobiology (lecturer), Department of Physiology and Physiological Physics, Leiden University, The Netherlands, December 1994.

Course Lectures by Invitation:

Metabolomics: A new window on peripheral oscillators. In Short Course “To Eat or Not to Eat? From Animal Models to Shift Workers”; Brisbane, Australia, October 2018.

Science beyond the lab: Communicating science to the public and to policy makers. In Gordon Research Seminar “Sleep Regulation and Function”; Galveston, Texas, March 2018.

Beyond regression and ANOVA: Dealing with repeated measurements and categorical dependent variables. Statistics Master Class, University of South Australia; Adelaide, Australia, November 2017.

Developing your leadership skills for today and in the future. In 2017 Sleep Research Society Leadership Workshop; Boston, Massachusetts, June 2017.

Cognitive consequences of sleep loss. In Neurosci 541: Neuroscience of Sleep, Washington State University; Spokane, Washington, April 2017.

Circadian rhythm sleep disorders: Basic principles, shift work and jet lag and their impact on human health. In PharmSci 540: Fundamentals of Chronopharmacology course of the Graduate Program in Pharmaceutical Sciences, Washington State University; Spokane, Washington, February 2017.

Hands-on modeling: You can do it, too! In 23rd Congress of the European Sleep Research Society; Bologna, Italy, September 2016.

Applications of the two-process model and its expansion to waking performance. In 23rd Congress of the European Sleep Research Society; Bologna, Italy, September 2016.

Sleeping, health and work injuries. In plenary session at the Summer School in Public Health Policy, Economics and Management; Lugano, Switzerland, September 2016.

Beyond vigilance: Sleep deprivation effects on cognitive flexibility and situational awareness. In Sleep Research Society 21st Annual Trainee Symposia Series; Denver, Colorado, June 2016.

Performance failure due to sleep loss: What exactly goes wrong in cognitive functioning? In Psych 506: Current Research in Psychology course of the Experimental and Clinical Psychology Graduate Programs, Washington State University; Pullman, Washington, October 2015.

Meet the Professor: Tired cops and first responders: Sleep, justice and public safety. At SLEEP 2014 conference; Minneapolis, Minnesota, June 2014.

Meet the Professor: Pharmacological management of sleepiness and performance. At SLEEP 2013 conference; Baltimore, Maryland, June 2013.

Fatigue countermeasures and fatigue risk management in operational settings. In postgraduate course Sleep Medicine in Occupational Settings, SLEEP 2013; Baltimore, Maryland, June 2013.

Cognitive impairment due to sleep loss. In Psych 506: Current Research in Psychology course of the Experimental and Clinical Psychology Graduate Programs, Washington State University; Pullman, Washington, February 2013.

Meet the Professor: How much sleep do we really need? At SLEEP 2012 conference; Boston, Massachusetts, June 2012.

Sleep-loss sensitive measures of cognition performance. In Sleep Research Society 17th Annual Trainee Symposia Series; Boston, Massachusetts, June 2012.

Local, use-dependent sleep and the effects of sleep loss on cognition. In Brain and Cognition course Slaap/Waak Stoornissen [Sleep/Wake Disorders] of the Psychology Graduate Program, University of Amsterdam; Amsterdam, The Netherlands, April 2012.

Fatigue risk management. In Brain and Cognition course Slaap/Waak Stoornissen [Sleep/Wake Disorders] of the Psychology Graduate Program, University of Amsterdam; Amsterdam, The Netherlands, May 2011.

Sleep loss, performance, and cognitive processes. In Medical Psychology Practicum of the Clinical Psychology Graduate Program, Washington State University; Pullman, Washington, March 2010.

Neurophysiological basis of sleep loss effects on neurobehavioral functioning. In Continuing Medical Education course Sleep/Wake Disorders: Long-Term Neurocognitive, Executive and Behavioral Consequences and Clinical Controversies; Seattle, Washington, June 2009.

Meet the Professor: Cognitive effects of acute and chronic sleep deprivation. At SLEEP 2008 conference; Baltimore, Maryland, June 2008.

Ethical issues in sleep and circadian research (with R.D. McEvoy). In Trainee Program of WorldSleep07; Cairns, Australia, September 2007.

Meet the Professor: Cumulative sleep loss: Consequences for wakefulness and sleep. At SLEEP 2007 conference; Minneapolis, Minnesota, June 2007.

Sleep deprivation. At Naval Postgraduate School; Monterey, California, May 2007.

Meet the Professor: Sleepiness and performance. At SLEEP 2006 conference; Salt Lake City, Utah, June 2006.

Sleep, sleep deprivation, cognitive impairment & inter-individual differences. In postgraduate Advances in Sleep Medicine Course: Moving the Frontier Forward, Association of Polysomnographic Technologists; Salt Lake City, Utah, June 2006.

Measuring cognitive performance during sleep deprivation—catching the brain asleep. In postgraduate course What Is It That Sleeps? SLEEP 2006; Salt Lake City, Utah, June 2006.

Sleep loss: Individual differences and effects on routine life. In Annual Trainee Symposium of the Associated Professional Sleep Societies; Denver, Colorado, June 2005.

Introduction to sleep and chronobiology. In course Psychiatric Diagnosis and Treatment for PGY-2 residents, Department of Psychiatry, University of Pennsylvania School of Medicine; Philadelphia, Pennsylvania, March 2005.

Statistical models in sleep research. In 17th Congress of the European Sleep Research Society; Prague, Czech Republic, October 2004.

Introduction sleep and chronobiology. In course Psychiatric Diagnosis and Treatment for PGY-2 residents, Department of Psychiatry, University of Pennsylvania School of Medicine; Philadelphia, Pennsylvania, March 2004.

Individual differences in response to sleep loss: Data, theory and statistics. In postgraduate course The Effects of Sleep Loss and Sleep Restriction in Humans, Associated Professional Sleep Societies; Chicago, Illinois, June 2003.

Statistics in sleep data analysis. In Annual Trainee Symposium of the Associated Professional Sleep Societies; Chicago, Illinois, June 2003.

Statistics in sleep protocol design. In Annual Trainee Symposium of the Associated Professional Sleep Societies; Chicago, Illinois, June 2003.

Sleep and chronobiology. In course Psychiatric Diagnosis and Treatment for PGY-1 and PGY-2 residents, Department of Psychiatry, University of Pennsylvania School of Medicine; Philadelphia, Pennsylvania, March 2003.

Sleep/wake regulation and physiological modeling of performance. In course Knowledge Based Systems for undergraduate students, School of Engineering and Applied Science, University of Pennsylvania; Philadelphia, Pennsylvania, January 2003.

Statistical methods in sleep research. In Annual Trainee Symposium of the Associated Professional Sleep Societies; Seattle, Washington, June 2002.

Basic concepts of sleep physiology. In course Psychiatric Diagnosis and Treatment for PGY-1 and PGY-2 residents, Department of Psychiatry, University of Pennsylvania School of Medicine; Philadelphia, Pennsylvania, April 2002.

Chronobiology and aging. In course Chronobiology for undergraduate students, Department of Biomedical Science, Leiden University; Leiden, The Netherlands, March 1998.

Chronobiology and aging. In course Chronobiology for undergraduate students, Department of Biomedical Science, Leiden University; Leiden, The Netherlands, March 1997.

Chronobiology and aging. In course Chronobiology for undergraduate students, Department of Biomedical Science, Leiden University; Leiden, The Netherlands, March 1996.

Faculty and Postdoctoral Trainees:

D. Hansen, Ph.D., LMHC (assistant research professor mentee, Washington State University), January 2019–present.

S. James, Ph.D. (assistant research professor mentee, Washington State University), August 2016–present.

L. Peixoto, Ph.D. (assistant professor mentee, Washington State University), June 2016–present.

K. Honn, Ph.D. (assistant research professor mentee, Washington State University), April 2016–present.

D. Grant, Ph.D., LMHC (postdoctoral fellow, Washington State University), October 2016–December 2018.

W. Vanderheyden, Ph.D. (assistant research professor mentee, Washington State University), November 2016–April 2018.

M. Wilson, Ph.D., MPH, RN-BC (assistant professor mentee, Washington State University), June 2016–December 2017.

G. Vincent, Ph.D. (visiting postdoctoral scholar, Central Queensland University, Australia), May 2016–June 2016.

G. Paech, Ph.D. (postdoctoral fellow, Washington State University), November 2014–May 2016.

K. Honn, Ph.D. (postdoctoral fellow, Washington State University), March 2015–March 2016.

C. Kogan, Ph.D. (postdoctoral fellow, Washington State University), July 2014–April 2015.

É. Szentirmai, Ph.D. (assistant professor mentee, Washington State University), May 2012–March 2015.

P. McCauley, Ph.D. (assistant research professor mentee, Washington State University), July 2011–December 2012.

P. Franzen, Ph.D. (NIH K01 Mentored Research Scientist Development Award extramural advisee, University of Pittsburgh), September 2007–August 2012.

P. Forsman, Ph.D. (postdoctoral fellow, Washington State University and Finnish Institute of Occupational Health, Finland), February 2010–January 2012.

M. Jackson, Ph.D. (postdoctoral fellow, Washington State University), September 2009–July 2011.

P. McCauley, Ph.D. (postdoctoral fellow, Washington State University), January 2010–June 2011.

S. Lee, Ph.D. (postdoctoral trainee, Institute for Experimental Psychiatry, Philadelphia, Pennsylvania), September 2002–September 2003.

J. Peck, M.D. (sleep medicine fellow, University of Pennsylvania), February 2003–June 2003.

J. Crabbe, Ph.D. (postdoctoral trainee, University of Pennsylvania), July 2001–June 2002.

Graduate Trainees and Research Assistants:

D. Sidebottom (Ph.D. student, Washington State University), *Novel effects of sleep deprivation on cognition*, August 2016–present.

S. Riedy, RPSGT (Ph.D. student, Washington State University), *Sleep, sleep loss and decision making*, August 2015–present.

S. Rangan (Ph.D. student, University of Tennessee), *Model-based fatigue risk management in FedEx flight operations*, August 2011–present.

A. Sparrow, M.S. (Ph.D. student, Washington State University), *Sleep and performance in truck drivers*, August 2013–December 2017.

V. Chavali (M.D. student, University of Washington), *Drift rate estimation in diffusion model during sleep deprivation*, January 2016–August 2017.

E. Skorniyakov, PT, DPT (Ph.D. student, Washington State University), *Watch standing schedules in naval surface operations*, January 2014–August 2017.

B. Satterfield (Ph.D. student, Washington State University), *Genetic underpinnings of individual differences in responses to sleep loss*, August 2013–June 2017.

D. Sorta (M.D. student, University of Washington), *Sleep deprivation and attentional networks*, January 2016–September 2016.

D. Grant, M.S., LMHC (Ph.D. student, Washington State University), *Impact of sleep loss on performance in insomnia*, August 2011–September 2016.

A. Bender, M.S., RPSGT (Ph.D. student and research assistant, Washington State University), *Psychophysiological assessment of sleep and cognitive processes under conditions of sleep loss*, August 2010–May 2015.

K. Honn (Ph.D. student, Washington State University), *Linking sleep and cognition*, January 2012–March 2015.

C. Kogan (Ph.D. student, University of Montana), *Markov chain Monte Carlo parameter estimation for individual differences*, January 2010–June 2014.

M. Oonk, M.S. (Ph.D. student and research assistant, Washington State University), *Local sleep: Bridging between animal and human research*, August 2010–May 2012.

L. Tompkins (M.S. student and research assistant, Washington State University), *Neuroendocrine effects of split sleep*, November 2006–February 2012.

M. Graauwmans (international exchange M.S. student, Radboud University Nijmegen, The Netherlands), *High-fidelity driving simulator implementation of a psychomotor vigilance test*, February 2010–July 2010.

M. Mehalick (Ph.D. student, Washington State University), *Cognitive components of cognition*, August 2009–May 2010.

P. McCauley, M.A. (Ph.D. student and research assistant, University of Montana), *First-order ODE modeling of sleep/wake homeostasis and circadian rhythms*, July 2008–December 2009.

A. Smith, M.S. (Ph.D. student and research assistant, Washington State University), *Mathematical modeling of sleep and performance*, January 2006–May 2009.

- A. Tucker, M.S. (Ph.D. student and research assistant, Washington State University), *Effects of sleep deprivation on executive function*, October 2005–August 2008.
- A. Luik (international exchange M.S. student, Radboud University Nijmegen, The Netherlands), *Inter-individual differences in executive functioning during sleep deprivation* (graduated *cum laude* for M.S. degree), February 2008–July 2008.
- D. Mollicone (Ph.D. student, Drexel University), *Response surface modeling of anchor and nap sleep*, January 2005–March 2008.
- J. Gazendam, M.D. (Ph.D. student, Groningen University, The Netherlands), *Circadian rhythms in the intensive care unit*, July 2000–January 2008.
- M. Oonk (international exchange M.S. student, Radboud University Nijmegen, The Netherlands), *Role of vigilance in determining individual differences in performance degradation from sleep loss*, July 2007–December 2007.
- S. Jablonowski (international exchange M.S. student, Radboud University Nijmegen, The Netherlands), *Individual differences in performance degradation during sleep deprivation: Role of vigilance in working memory impairment*, July 2007–August 2007.
- D. Avinash (M.S. student, Drexel University), *Parameter estimation for a mathematical model of performance impairment due to chronic sleep restriction*, September 2004–October 2005.
- M. Baynard, M.S. (Ph.D. student, Drexel University, Philadelphia, Pennsylvania), *Inter-individual differences in vulnerability to neurobehavioral performance impairment during sleep deprivation*, September 2000–November 2004.
- E. Møst (international exchange M.S. student, Groningen University, The Netherlands), *Relationship between waking neurobehavioral performance and sleep architecture: Inter-individual differences*, September 2002–March 2003.
- T. Voss (M.D. student, University of Pennsylvania), *Effects of total sleep deprivation on endocrine markers*, October 2002–February 2003.
- M. Blaauw (international exchange M.S. student, Groningen University, The Netherlands), *The role of sleep history in the development of neurobehavioral impairment due to sleep loss*, January 2002–June 2002.

Postbaccalaureate Trainees and Research Assistants:

- M. Winser, M.S., RPSGT (research assistant, Washington State University), *Polysomnographic predictors of differential vulnerability to sleep loss*, August 2012–May 2016.
- R. Gabehart (research assistant, Washington State University), *Actigraphy, sleep and waking neurobehavioral outcomes*, June 2014–March 2016.
- S. Riedy (research assistant, Washington State University), *Sleep deprivation effects on components of cognition in self-regulation*, June 2012–August 2014.
- A. Sparrow, M.S. (research assistant, Washington State University), *Field study of restart break in truck drivers*, November 2012–August 2013.
- B. Satterfield (research assistant, Gonzaga University and Washington State University), *Effect of restart break on sleep architecture*, October 2010–September 2011 and September 2012–August 2013.
- M. McCauley (research assistant, Washington State University), *Smartphone and Internet applications for fatigue modeling*, August 2011–November 2012.

T. Crain (research assistant, Whitworth University), *Effect of simulator driving on psychomotor vigilance*, May 2009–May 2010.

L. Wu (research assistant, St. Lawrence University), *Effects of sleep and sleep deprivation on executive functioning*, November 2007–December 2008.

A. Bender (polysomnographic technologist trainee, Washington State University), *Sleep recording and visual scoring for NHLBI project*, August 2006–April 2008.

P. McCauley, M.A. (research assistant, Washington State University), *Dynamic modeling of sleep/wake regulation*, July 2006–November 2007.

A. Stakofsky (honors student and research assistant, University of Pennsylvania), *Identifying predictors of inter-individual differences in vulnerability to sleep loss*, September 2003–July 2005.

J. Xiao (research assistant, University of Pennsylvania), *Astronaut Scheduling Assistant graphical user interface*, July 2003–August 2004.

K. Vitellaro (research assistant, University of Pennsylvania), *Individual differences in response to sleep deprivation*, June 2003–May 2004.

A. Levin (research assistant, University of Pennsylvania), *Individual differences in response to sleep deprivation*, September 2002–June 2003.

G. Nosker (research assistant, University of Pennsylvania), *Predicting vulnerability to performance impairment from sleep loss*, September 2000–June 2001.

Undergraduate Trainees:

N. Jeyaraj (international exchange student, University of Surrey, United Kingdom), *Sleep quality and fatigue in patrol officers*, December 2009–May 2010.

S. Raj (international exchange student, University of Surrey, United Kingdom), *Individual differences in sleep and performance*, August 2009–January 2010.

A. King (international exchange student, University of Surrey, United Kingdom), *Individual differences in circadian and homeostatic contributions to cognitive impairment*, July 2008–June 2009.

B. Presler (undergraduate student, Washington State University), *Effects of sleep deprivation on dissociated components of cognition in a framing task*, January 2009–May 2009.

J. Suter (research assistant, Eastern Washington University), *Sleep EEG spectral analysis and trait individual differences*, January 2008–April 2008.

S. Webber (research assistant, Whitworth College), *Personality and sleep structure*, September 2006–June 2007.

M. Sherman (research assistant, Gonzaga University), *Sleep laboratory set-up*, June 2006–June 2007.

B. Robinson (research assistant, Drexel University), *Graphical user interface for the Astronaut Scheduling Assistant*, March 2005–April 2007.

W. Moline (participant in Washington State University's Summer Undergraduate Research Experience, Eastern Washington University), *Predicting inter-individual differences in sleep architecture*, July 2006.

H. Caruso (research assistant, University of Pennsylvania), *Effect of cognitive workload on delta power in the NREM EEG of recovery sleep*, July 2005–June 2006.

D. Amin (research assistant, Drexel University), *Astronaut Scheduling Assistant limit cycle oscillator*, October 2003–August 2005.

- J. Hoffman (honors student, University of Pennsylvania), *Time of day effects in cognitive function during chronic sleep restriction*, September 2004–June 2005.
- E. Vacs (research assistant, Drexel University), *Validation of a novel biomathematical model of performance*, November 2004–March 2005.
- C. Crudele (research assistant, Drexel University), *Modulating the two-process model*, May 2004–September 2004.
- R. Hu (research assistant, University of Pennsylvania), *Acceptable levels of performance*, May 2004–August 2004.
- J. Starzyk (honors student, University of Pennsylvania), *Examining circadian adaptation during chronic sleep restriction at different circadian phases*, September 2003–May 2004.
- D. Green (undergraduate student, University of Pennsylvania), *Systematic inter-individual differences in circadian amplitude*, September 2003–December 2003.
- J. Parker (undergraduate student, Drexel University, Philadelphia, Pennsylvania), *Predicting neurobehavioral performance from sleep loss by subjective surveys*, January 2003–May 2003.
- E. Aponte (honors student, University of Pennsylvania), *The waking EEG during 88 hours of extended wakefulness and upon awakening from nap sleep*, September 2002–May 2003.
- M. Cassady (undergraduate student, Cornell University), *Automation of neurobehavioral test battery data extraction*, June 2002–August 2002.
- D. Greene (honors student, University of Pennsylvania), *Parameter estimates and statistical distribution of reaction times on a psychomotor vigilance task under conditions of experimental sleep deprivation*, January 2001–August 2002.
- C. Humbyrd (undergraduate student, University of Pennsylvania), *SAS algorithm for mixed-effects modeling of sleep inertia*, May 2002–July 2002.
- M. Focseneanu (honors student, University of Pennsylvania), *Effects of chronic sleep dose and circadian phase on sleep physiology*, January 2002–May 2002.
- L. Tung (undergraduate student, University of Pennsylvania), *Investigation of the trait components of sleep architecture before and after 36 hours of total sleep deprivation*, September 2001–May 2002.
- A. De Brunier (honors student, University of Pennsylvania), *Dynamics of waking EEG frequency bands during chronically restricted sleep*, September 2001–May 2002.
- A. Shah (honors student, University of Pennsylvania), *Dynamics of sleep architecture during chronic partial sleep deprivation*, September 2000–May 2001.
- J. Orthmann (honors student, University of Pennsylvania), *Changes in plasma growth hormone levels following chronic sleep restriction*, September 2000–May 2001.
- B. Rapaport (undergraduate student, University of Pennsylvania), *The effects of sleep deprivation on learning in the digit symbol substitution task and probed recall memory test*, September 2000–December 2000.
- S. Rassiwalla (undergraduate student, University of Pennsylvania), *The impact of different sleep/wake schedules on circadian phase as measured by core body temperature*, January 2000–May 2000.
- H. MacAdam (honors student, University of Pennsylvania), *Sleep architecture of nighttime and daytime naps during 88 hours of extended wakefulness*, September 1999–May 2000.

J. Fu (undergraduate student, University of Pennsylvania), *Neurobehavioral effects of simulated night work in a placebo-controlled laboratory study of a novel wake-promoting compound*, September 1999–December 1999.

N. Konowal (honors student, University of Pennsylvania), *Physiological basis of failures to respond: Microsleeps during experimental sleep deprivation*, September 1998–May 1999.

M. Kuijpers (undergraduate student, Leiden University, The Netherlands), *The circadian rhythm, sleep–wake rhythm and sleep structure during temporal isolation in a morning-type individual*, September 1996–May 1997.

H. Bijl (undergraduate student, University of Utrecht, The Netherlands), *Circadian rhythmicity of blood pressure in the constant routine protocol*, September 1996–May 1997.

S. Prins (research assistant, Technical University of Delft, The Netherlands), *Interindividual differences in circadian rhythmicity*, September 1995–May 1997.

H. Teerlink (undergraduate student, Leiden University, The Netherlands), *Effects of posture and sleep in the body temperature drop after going to bed*, September 1995–May 1996.

J. Dekker (undergraduate student, Leiden University, The Netherlands), *Stress in the constant routine protocol*, September 1995–May 1996.

A. Vertegaal (undergraduate student, Leiden University, The Netherlands), *Core temperature rhythms at habitual and shifted bedtimes in morning types and evening types*, January 1995–December 1995.

PROFESSIONAL MEMBERSHIPS

Academic Centers and Institutes:

Consortium of Interdisciplinary Statistics Education and Research, Washington State University (*Affiliate*, February 2015–present).

Centre for Sleep Research, University of South Australia (*Affiliate*, September 2012–present).

Translational Addiction Research Center, Washington State University (*Affiliate*, February 2012–present).

Sleep and Performance Research Center, Washington State University (*Assistant Director*, October 2005–July 2013; *Director-Elect*, July 2013–August 2014; *Director*, August 2014–present).

WWAMI Medical Education Program, Washington State University (July 2011–June 2014).

Institute for Experimental Psychiatry, Philadelphia, Pennsylvania (*Chronobiostatistician*, June 2000–February 2007).

Center for Neurobiology and Behavior, University of Pennsylvania School of Medicine (December 2001–September 2005).

David Mahoney Institute of Neurological Sciences, Philadelphia, Pennsylvania (March 2000–September 2005).

Center for Sleep and Respiratory Neurobiology, University of Pennsylvania Health System (June 1998–September 2005).

Professional Societies:

Working Time Society (2005–present).

Association for Psychological Science (1999–present).

Sleep Research Society (1998–present).

European Sleep Research Society (1994–present).

Dutch Society for Sleep–Wake Research (1994–present).

Cognitive Neuroscience Society (2016–2017).

Society for Research on Biological Rhythms (2000–2015).

International Sleep Science and Technology Association (2013–2014).

International Society for Chronobiology (1999–2004).

European Society for Chronobiology (1994–2000).

AWARDS AND HONORS

Fellow, *Association for Psychological Science*, December 2018–present.

Elected Member, *Washington State Academy of Sciences*, September 2018–present.

Opening Plenary Lecture, *What does caffeine do for us when we are chronically sleep restricted?* Sleep DownUnder 2018; Brisbane, Australia, October 2018.

Keynote Lecture, *Fatigue research in simulated and real-world operational settings*, Adelaide Sleep Retreat 2017; Adelaide, Australia, November 2017.

Keynote Lecture, *Fatigue as a challenge in 24/7 operations: How to survive and thrive*, 2017 UniSA Workshop: Team Cohesion, Team Work and Decision Making in 24/7 Maritime Environments; Adelaide, Australia, November 2017.

Visiting Distinguished Thought Leader, University of South Australia; Adelaide, Australia, November 2017.

Distinguished Service Award, Sleep Research Society; Boston, Massachusetts, June 2017.

STEM Research Exemplar, *The Research Exemplar Project*, Washington University in St. Louis; St. Louis, Missouri, April 2017.

Invited Member, *Fatigue Blue Ribbon Panel*, National Safety Council; Chicago, Illinois, December 2016.

Keynote Lecture, *Drowsy driving: measurement, mitigation, and policy making*, SomnoSafe 2016; Brussels, Belgium, February 2016.

Plenary Address, *Sleep deprivation and cognitive performance*, SLEEP 2015; Seattle, Washington, June 2015.

Keynote Lecture, *Fatigue risk management in commercial aviation: from basic research to alternate methods of compliance*, 9th International Conference on Managing Fatigue; Fremantle, Australia, March 2015.

Visiting Professor, University of Amsterdam's research priority program "Brain and Cognition"; Amsterdam, the Netherlands, January 2011–December 2013.

Visiting Scientist, Dalhousie CSP Visiting Scientist Seminar Program, Dalhousie University; Halifax, Canada, October 2013.

Keynote Lecture, *Fatigue in the workplace: What causes it and what can we do about it?* Member Programs Expo, Association of Washington Cities; Spokane Valley, Washington, September 2013.

2013 Faculty Excellence Award, Washington State University Spokane; Spokane, Washington, May 2013.

Chancellor's Research Breakfast Series Lecture, *From basic sleep research and technology development to fatigue risk management in operational settings*, Washington State University Spokane; Spokane, Washington, December 2012.

Featured Faculty, Harvard School of Public Health 2012 Initiative for Productivity and Health Management Conference "Sleep and Shift Work: Optimizing Productivity and Health Management in the 24/7 Global Economy"; Boston, Massachusetts, September 2012.

Keynote Lecture, *Sleep loss and cognitive impairment: A multi-faceted issue*, Adelaide Sleep Retreat 2011; Adelaide, Australia, April 2011.

Keynote Lecture, *From laboratory sleep research to operational fatigue risk management*, 8th International Conference on Managing Fatigue in Transportation, Resources and Health; Fremantle, Australia, March 2011.

Plenary Address, *Sleep deprivation sheds light on brain and cognition*, Cognitive Science Center, University of Amsterdam; Amsterdam, The Netherlands, September 2010.

2007 Cognitive Science Computational Modeling Prize for Applied Cognition (1st Place), Cognitive Science Society; Nashville, Tennessee, August 2007.

Keynote Lecture, *Sleep loss and circadian stressors in shiftwork: On inter-individual differences*, 17th International Symposium on Shiftwork and Working Time; Hoofddorp, The Netherlands, September 2005.

Presentation Prize, European Sleep Research Society; Prague, Czech Republic, October 2004.

Visiting Professor, NASA Ames Research Center; Moffett Field, California, July 2003–August 2003.

Outstanding Young Investigator Award, Sleep Research Society; Chicago, Illinois, June 2003.

Microsoft Corporation Award, International Society for Chronobiology; Washington, D.C., August 1999.

Trainee Research Merit Award, Association of Professional Sleep Societies; Orlando, Florida, June 1999.

Young Scientist Symposium, European Sleep Research Society; Madrid, Spain, September 1998.

(6 merit-based travel awards in the period 1995–1999 not listed)