



Expert Panel

George C. Brainard, PhD, is the Director of the Light Research Program and professor of Neurology at Thomas Jefferson University's Jefferson Medical College. Dr. Brainard has done research on the effects of light on biological and behavioral responses of animals and humans for over thirty years. His work has been supported by the NIH, NSF, NASA, FDA, and many other sources. He has authored over 100 original research articles, 50 book chapters and edited books or monographs including four lighting standards for the Illuminating Engineering Society of North America.



His research team has developed and tested advanced lighting designs for treating patients with winter depression. He is currently working on lighting for the International Space Station and other, future space habitats. In the past five years he has been honored with the Johnson Space Center Director's Innovation Award (January 2015), the Research Award from the Professional Lighting Design Convention (November 2013) and the Research Award for Excellence on Photobiology, Photochemistry and Photophysics, from the American Society for Photobiology (June, 2010).

Charles A. Czeisler, PhD, MD, FRCP, FAPS is chief of the Division of Sleep and Circadian Disorders, in the Departments of Medicine and Neurology at the Brigham and Women's Hospital and the Baldino Professor of Sleep Medicine and director of the Division of Sleep Medicine at Harvard Medical School. Dr. Czeisler has more than 40 years of experience in the field of basic and applied research on circadian disorders.



For more than a decade, Dr. Czeisler served as team leader of the Human Performance Factors, Sleep and Chronobiology Team of NASA's National Space Biomedical Research Institute, which is responsible for developing sleep-wake schedule guidelines and related countermeasures for use by NASA astronauts and mission control personnel during space exploration. He led the sleep experiment in which Senator John Glenn participated during the STS-95 space shuttle mission in 1998. Just this year, he and his colleagues at BWH received the NASA's Johnsons Space Center Director's Innovation Award in Houston, for designing a new solid state lighting system that is being installed on the International Space Station this year to improve the sleep of astronauts.

Dr. Czeisler's research is focused sleep, circadian rhythms, health and performance in humans. Of particular concern to Dr. Czeisler is the epidemic of sleep deficiency in our society with its wide-ranging implications for health, wellness, and the economy.



He is chairman of the Board of Directors of the National Sleep Foundation and Past President of the Sleep Research Society. Dr. Czeisler, who has over 275 publications, was awarded an Honorary Fellowship of the Royal College of Physicians, is an elected member of the Institute of Medicine of the National Academy of Sciences and was elected as an inaugural Fellow of the American Physiological Society. He earned his undergraduate degree from Harvard College and his PhD in neuro- and bio-behavioral sciences and MD from Stanford University.

Jonathan Emens, MD, FABSM, is an Associate Professor of Psychiatry and Medicine at Oregon Health & Science University and a Staff Physician at the Portland VA Medical Center where he serves as the Acting Director of the Sleep Medicine Program. He received his BA from Oberlin College, MD from University of Massachusetts Medical School, and completed his Internship and Psychiatry Residency at OHSU. He is board certified in Psychiatry and Sleep Medicine. Dr. Emens' clinical focus is on the diagnosis and treatment of sleep disorders in the Portland VA Sleep Medicine Program. His research has focused on circadian physiology, circadian rhythm sleep disorders (especially among blind individuals) and sleep and circadian rhythms in psychiatric disorders.



Mark S. Rea, PhD, is Director of the Lighting Research Center (LRC) and Professor of Architecture and Cognitive Sciences at Rensselaer Polytechnic Institute. He teaches courses in leadership and in visual and circadian processes, and supervises graduate students at M.S. and Ph.D. levels. Rea is well known for his research in circadian photobiology, mesopic vision, psychological responses to light, lighting engineering, and visual performance. He is the author of more than 250 scientific and technical articles related to vision, lighting engineering, and human factors and was the editor-in-chief of the 8th and 9th editions of the Illuminating Engineering Society (IES) Lighting Handbook. Rea has been elected Fellow of the Society of Light and Lighting (UK) and Fellow of the IES. In addition, he is recipient of the IES Medal. Rea has also been honored with the William H. Wiley Distinguished Faculty Award for those who have won the respect of the faculty at Rensselaer through excellence in teaching, productive research, and interest in the totality of the educational process. Dedicated to the notion that our society undervalues light because we do not properly measure its benefits, his recent book Value Metrics for Better Lighting brings together a wide range of research to illustrate how the effective use of light can benefit society and the environment.

