

AGENDA

SLEEP & CIRCADIAN RHYTHMS IN CARDIOVASCULAR RESILIENCE:

Mechanisms, Implications, & Applications

Virtual Workshop, April 24 & April 26, 2024



OBJECTIVES:

- To delineate the contribution of sleep and circadian rhythms in cardiovascular resilience (briefly described here as the ability of the cardiovascular system to maintain or return to homeostasis following perturbation).
- To identify the potential mechanisms underpinning these relationships.
- To explore strategies for promoting cardiovascular resilience by optimizing sleep and circadian rhythms in general and at critical points throughout the lifespan when the risk of cardiovascular disease may be particularly increased.

CO-CHAIRS:

- Dr. Michael Grandner, PhD, MTR, CBSM, FAASM, *University of Arizona*
- Dr. Brooke Aggarwal, EdD, MS, FAHA, *Columbia University*
- Dr. Donald Lloyd-Jones, MD, ScM, FACC, FAHA, *Northwestern University*

DAY ONE:

Wednesday, April 24, 2024 | 10:00am – 4:30pm EDT



10:00 – 10:20 am **Welcome and Opening Remarks**

Conceptualizing resilience and cardiovascular resilience from the NHLBI and NIH perspectives

Dr. David Goff, MD, PhD, FACP, FAHA, NHLBI Perspectives

Dr. Zorina Galis, PhD, Trans-NIH Resilience Program

Dr. Marishka Brown, PhD, Sleep and Circadian Rhythms Programs

Session 1: The Interplay of Sleep, Circadian Rhythms, and Cardiovascular Resilience

Moderator: **Dr. Don Lloyd-Jones, MD, ScM, FACC, FAHA**

10:20 – 10:40 am **Defining Cardiovascular Resilience and the Role of Sleep: A Cardiovascular Resilience Researcher's Perspective**

Dr. Don Lloyd-Jones, MD, ScM, FACC, FAHA, Northwestern University

10:40 – 11:00 am **Social Determinants of Sleep Health from 2017–2020: Exploring the Intersection of Race and Gender**

Dr. Stephanie Cook, DrPH, New York University

AGENDA

DAY 1 CONT.

SESSION 1 CONT. | SESSION 2 BEGINS



11:00 – 11:20 am **Integrating Chrononutrition and Sleep: A Pathway to Atherosclerosis Management and Cardiovascular Resilience**

Dr. Jose Ordovas, PhD, *Tufts University*

11:20 – 11:40 am **Intersection of Aging, Sleep and Cardiovascular Resilience**

Dr. Pamela Lutsey, PhD, MPH, *University of Minnesota*

11:40 – 12:00 pm **Conceptualizing Cardiovascular Resilience**

Dr. Victoria Bautch, PhD, *University of North Carolina at Chapel Hill*

12:00 – 12:30 pm **Q&A for Speakers**

Summary by Moderator

12:30 – 1:00 pm **LUNCH BREAK**



Session 2: Mechanisms Linking Sleep and Circadian Rhythms to Cardiovascular Resilience

Moderator: Dr. Brooke Aggarwal, EdD, MS, FAHA

1:00 – 1:20 pm **Overview of Potential Mechanisms Linking Sleep and Circadian Rhythms to Cardiovascular Resilience**

Dr. Brooke Aggarwal, EdD, MS, FAHA,

Columbia University Irving Medical Center

1:20 – 1:40 pm **Impact of Sleep and Circadian Disruption on Cardiovascular Outcomes from Controlled Clinical Studies**

Dr. Josiane Broussard, PhD, *Colorado State University*

1:40 – 2:00 pm **Conceptualizing Sleep and Circadian Health and Resilience**

Dr. Philip Cheng, PhD, *Henry Ford Health*

2:00 – 2:20 pm **Toward Mechanisms of Circadian Resilience in Cells and Synapses**

Dr. Jonathan Lipton, MD, PhD, *Harvard University*



AGENDA

DAY 1 CONT. | **DAY 2** BEGINS
SESSION 2 ENDS | **SESSION 3** BEGINS



- 2:20 – 2:50 pm **Q&A for Speakers**
- 2:50 – 3:00 pm **BREAK**
- 3:00 – 3:20 pm **Mechanisms of Increased Cardiovascular Risk in Insufficient Sleep**
Dr. Sanja Jelic, MD, Columbia University Medical Center
- 3:20 – 3:40 pm **Sleep and Leukocyte Dynamics in Cardiovascular Disease**
Dr. Filip Swirski, PhD, Icahn School of Medicine at Mount Sinai
- 3:40 – 4:00 pm **Multilevel Determinants of Sleep and Cardiovascular Disparities: The Role of Risk and Resilience**
Dr. Dayna Johnson, PhD, MPH, Emory University
- 4:00 – 4:30 pm **Q&A for Speakers**
Summary by Moderator



DAY TWO:

Friday, April 26, 2024 | 10:00am – 4:30pm EDT

Session 3: Sleep and Circadian Interventions for Cardiovascular Resilience

Moderator: **Dr. Michael Grandner, PhD, MTR, CBSM, FAASM**

- 10:00 – 10:20 am **Overview: Sleep and Circadian Interventions for Cardiovascular Resilience**
Dr. Michael Grandner, PhD, MTR, CBSM, FAASM, University of Arizona
- 10:20 – 10:40 am **Use of Light and Chronopharmacology to Improve Cardiovascular Resilience**
Dr. Fabian Fernandez, PhD, University of Arizona
- 10:40 – 11:00 am **Opportunities for Improving Sleep to Support Cardiovascular Resilience**
Dr. Aric Prather, PhD, University of California, San Francisco

AGENDA

DAY 2 CONT.

SESSION 3 CONT. | SESSION 4 BEGINS



- 11:00 – 11:20 am **System-Level Approaches to Improve Sleep Health and Cardiovascular Resilience**
Dr. Nicole Bowles, PhD, *Oregon Health and Science University*
- 11:20 – 11:40 am **Q&A for Speakers**
- 11:40 – 11:50 am **BREAK**
- 11:50 – 12:10 pm **Behavioral Sleep Health Promotion Strategies to Promote Cardiovascular Resilience**
Dr. Kelly Baron, PhD MPH, DBSM, *University of Utah*
- 12:10 – 12:30 pm **Sleep Optimization: Implications for Cardiometabolic Risk and Resilience**
Dr. Esra Tasali, MD, *University of Chicago*
- 12:30 – 1:00 pm **Q&A for Speakers**
Summary by Moderator
- Discussion:** Incorporating cardiovascular resilience measures into sleep research interventions and vice versa. How to incorporate CVD outcomes within sleep research? Gaps towards developing mechanistic links – what formative research is needed? How to include sex as a biological variable in mechanistic research?
- 1:00 – 1:30 pm **LUNCH BREAK**



Session 4: Charting the Future of Sleep Health and Cardiovascular Resilience Research; Bringing Together Perspectives from the Fields of Sleep Health, Resilience, and Cardiovascular Research

Moderators: All Co-Chairs

- 1:30 – 1:50 pm **Physiological Consequences of Sleep Disordered Breathing and Cardiovascular Outcomes**
Dr. Ali Azarbarzin, PhD, *Harvard University*
- 1:50 – 2:10 pm **Future Directions for Translational Research Exploring Sleep and Circadian Rhythms**
Dr. Ron Anafi, MD, PhD, *University of Pennsylvania*
- 2:10 – 2:30 pm **Host Resilience to Prevent Diabetes-associated Vascular Complications**
Dr. Qing Miao, PhD, *New York University Long Island School of Medicine*



AGENDA

DAY 2 CONT.

SESSION 4 ENDS



- 2:30 – 2:50 pm **Epigenetic Studies and Protection Against Age-related Diseases**
Dr. Rene Cortese, PhD, ATSF, *University of Missouri*
- 2:50 – 3:10 pm **The Impact of Stress and Insomnia on Cardiovascular Functioning**
Dr. Ivan Vargas, PhD, *University of Arkansas*
- 3:10 – 3:20 pm **BREAK**
- 3:20 – 3:40 pm **Q&A for Speakers**
Discussion #1: Next steps, critical gaps and a research agenda
- 3:40 – 4:00 pm **Discussion #2:** Strategies for stimulating partnerships and leveraging cutting edge technologies
- 4:00 – 4:20pm **Discussion #3:** Implementation of sleep and circadian principles and resilience into healthcare, and the role of sex/gender, age, and other factors
- 4:20 – 4:30 pm **Closing Remarks and Future Perspectives**
Co-Chairs

WORKSHOP ORGANIZERS: NATIONAL HEART, LUNG, AND BLOOD INSTITUTES (NHLBI), NATIONAL INSTITUTES OF HEALTH (NIH)

Dr. Yunling Gao, PhD, Program Director
Vascular Biology and Hypertension Branch
Division of Cardiovascular Sciences (DCVS)
National Heart, Lung, and Blood Institute (NHLBI)
National Institutes of Health (NIH)
Email: gaoy2@nhlbi.nih.gov

Dr. Alfonso Alfini, PhD, MS, Program Director
Sleep Disorders Medicine
National Center on Sleep Disorders Research
Division of Lung Diseases
National Heart, Lung, and Blood Institute (NHLBI)
Email: alfonso.alfini@nih.gov

