

Special Academic Research Cooperative (SpARC)

Heat SpARC: Understanding Heat Stress and Its Impact on Human Health

Humans in a Warming World

Dates: February 16-17, 2027

Venue: MSSRF Campus, Chennai

A. About the Meeting:

Climate change is no longer only an environmental concern; it is increasingly a biological challenge. Rising temperatures and more frequent intense heatwaves are shaping how living systems function, adapt, and evolve. From cellular stress responses to human physiology, and microbial evolution to infectious disease patterns, heat affects interconnected biological systems.

Ignite Life Science Foundation (Ignite) and M. S. Swaminathan Research Foundation (MSSRF) are collaborating to convene a Special Academic Research Cooperative (SpARC) focused on the challenges that climate change is causing on Health due to excessive global warming. At this special Meet, we will explore the theme focusing on humans in a warming world. We intend to bring together researchers and experts across life sciences, including medicine, molecular and cellular biology, microbiology, start-ups, industries, philanthropists and other related disciplines to examine the biological consequences of heat stress on human health and nutrition, including ways to mitigate the problem.

The meeting will foster interdisciplinary dialogue on emerging scientific evidence, critical research gaps, and opportunities for collaborative research. By connecting insights across molecular, cellular, microbial, and human health perspectives, the meeting aims to deepen our understanding of how heat affects living systems and identify promising approaches to building resilience in a warming world.

B. Key Themes for Plenary Sessions

- **Human Physiology and Organ Failure: Cellular and Molecular Mechanisms**
Examine how heat affects cellular function, physiological regulation and organ systems, including the mechanisms underlying heat-related injury and organ failure.

- **Microbial Evolution and Infectious Disease**
Explore how rising temperatures influence microbial adaptation, antimicrobial resistance, pathogen emergence and the changing landscape of infectious diseases.
- **Heat Stress and the Human Microbiome:** Understand how heat stress may influence the composition and function of the human microbiome, its relationship with host health, and the implications for metabolism and overall well-being.
- **Building Heat Resilience - From Current Challenges to Future Solutions:**
Identify research priorities and opportunities for innovative approaches that mitigate the biological impacts of heat and strengthen resilience across human health and interconnected biological systems.

C. Participants:

We invite researchers and experts from relevant disciplines to join this interdisciplinary conversation and contribute to shaping future research and collaborative approaches to heat resilience. Click [here](#) to express your interest in joining us!