Cell Stress and Chaperones (2024) 29:113–115
https://doi.org/10.1016/j.cstres.2024.01.007

EDITORIAL

Editorial: A new chapter for *Cell Stress and Chaperones*

Dimitra Bourboulia[1,2,3,‡,*] · Laura J. Blair[4,5,6] · Melody S. Clark[7] · Adrienne L. Edkins[8] · Lawrence E. Hightower[9] · Mehdi Mollapour[1,2,3] · Veena Prahlad[10] · Elizabeth A. Repasky[11] · Manuela Truebano[12] · Andrew W. Truman[13] · Matthias C. Truttmann[14] · Patricija van Oosten-Hawle[13] · Mark R. Woodford[1,2,3]

Published online: 1 February 2024

Cell Stress and Chaperones is a multidisciplinary peer-reviewed journal founded by Dr Lawrence Hightower in 1996. *Cell Stress and Chaperones* publishes high-quality research articles and reviews in the area of cellular responses to a variety of stresses, with emphasis on the role of molecular chaperones.

Our new publishing agreement with Elsevier Inc. began on January 1, 2024, and will continue for the next 7 years. One exciting change that came with this new partnership is the transition of *Cell Stress and Chaperones* from being a "hybrid" journal (subscription model) to a fully Open Access journal. Hereafter, a wider "audience" from high-rank investigators to starting research trainees has immediate access to all previous and recent findings, innovative ideas, and discoveries in our studied research field. Consequently, there will be fewer obstacles and more opportunities to initiate new collaborations across multiple disciplines and in laboratories established in different geographical regions worldwide. Hence, *Cell Stress and Chaperones* opened all borders and welcomes scientists who recognize that the research area of environmental and cellular stresses across all taxa and species of plants, animals, and micro-organisms is an essential and dominant area to follow as a career path.

I feel so privileged as a fellow member of the Cell Stress Society International to become the third Editor in Chief (EIC) in the history of *Cell Stress and Chaperones* starting in the year 2024. My predecessors, Dr Lawrence Hightower (aka Larry, founder of Cell Stress and Chaperones and EIC between 1996 and 2020) and Dr R. William Currie (aka Bill, EIC between 2021 and 2023).[1] have already paved the way for me and I urge you to read their well-crafted editorials by Currie in Ref.[2] and by Hightower in this issue to appreciate their contributions. *Cell Stress and Chaperones* continuously evolves while projecting the voices of generations of scientists who study "Cell Stress and Chaperones."

Cell Stress and Chaperones will continue to provide new insights into cellular and organismal stress responses and characterize the role and mechanisms of molecular chaperones in physiological and pathological conditions. *Cell*

‡@StressCell

* Dimitra Bourboulia
dimitra.bourboulia@cellstressresponses.org

1 Department of Urology, SUNY Upstate Medical University, Syracuse, NY, USA
2 Department of Biochemistry and Molecular Biology, SUNY Upstate Medical University, Syracuse, NY, USA
3 Upstate Cancer Center, SUNY Upstate Medical University, Syracuse, NY, USA
4 Byrd Alzheimer's Center and Research Institute, Tampa, FL, USA
5 Department of Molecular Medicine, University of South Florida, Tampa, FL, USA
6 Research Service, James A. Haley Veterans Hospital, Tampa, FL, USA
7 British Antarctic Survey, UKRI-NERC, Cambridge, UK
8 Biomedical Biotechnology Research Unit (BioBRU), Department of Biochemistry and Microbiology, Rhodes University, Makhanda, South Africa
9 Department of Molecular and Cell Biology, University of Connecticut, Storrs, CT, USA
10 Department of Cell Stress Biology, Roswell Park Comprehensive Cancer Center, Buffalo, NY, USA
11 Department of Immunology, Roswell Park Comprehensive Cancer Center, Buffalo, NY, USA
12 Marine Biology and Ecology Research Centre, Plymouth University, Plymouth, UK
13 Department of Biological Sciences, The University of North Carolina at Charlotte, Charlotte, NC, USA
14 Department of Molecular & Integrative Physiology, University of Michigan, Ann Arbor, MI, USA.

Stress and Chaperones not only aims to advance our field but to advance it significantly. We want to see innovative research covering topics including mechanisms of protein homeostasis, deregulated chaperone function in different disease states, and defense mechanisms. We are eager for studies that address the impact of climate change on organisms and cells, innovative technologies, and therapeutic targeting approaches.

Cell Stress Society International and I are ever so grateful to our Senior Editors in *Cell Stress and Chaperones* for their commitment to our field and for contributing to the evolution of our journal. We have six new Senior Editors who joined our Editorial Board a few months ago and they bring with them additional expertise and an enthusiastic spirit. We have Senior Editors from different geographical regions including Canada, Israel, South Africa, United Kingdom, and United States. We encourage inclusiveness and emphasize the importance of diversity in our Editorial Board.

Our Senior Editors not only share their unique knowledge in their own area of study, but diversify the research scope of our journal. I would like to communicate with our readers from all around the world, that our journal's aims and scope are renewed and brought up-to-date, addressing the demands and evolution of our field.

What is *Cell Stress and Chaperones* journal looking to publish? What do we wish to read about, what breakthroughs will excite us, and what challenging questions and emerging problems in the field have not been addressed yet? These are the areas our Senior Editors are excited about:

Laura J. Blair, PhD:

Studies addressing *the role of chaperones in neurodegenerative diseases, understanding how chaperone imbalance promotes vulnerability, and the autonomous functions of co-chaperones within the cellular machinery*.

Melody S. Clark, PhD, DSc:

The *roles of chaperone proteins in non-model species, especially the atypical HSP family members such as* Heat Shock Protein Family A (Hsp70) Members.

Chaperone signaling pathways in non-model species.

Gene network analyses of chaperone signaling in non-model species.

Adrienne L. Edkins, PhD:

Species-specific features of pathogen chaperones and client proteins: what these tell us about fundamental chaperone function and how these may be exploited in drug discovery. This includes the chaperoning of *viral "client" proteins*, and how host cell chaperones are recruited to fold non-host viral "client" proteins.

Chaperones and proteostasis in the context of antimicrobial resistance.

Chaperone regulation and function in the extracellular environment.

Lawrence E. Hightower, PhD:

More studies of the Heat Shock Protein*s of organisms in unstable or rapidly changing thermal environments* as models for global climate change effects on organisms.

Studies of *HSPs that can be predictive of the progression of acute COVID-19 infections into long COVID chronic diseases*.

Mehdi Mollapour, PhD:

So many questions in the field remain unanswered:

Molecular functions: Understanding detailed molecular mechanisms by which chaperones recognize, bind to, and assist in the folding of client proteins.

Chaperone diversity: Exploring the diversity of chaperones and their roles in different cellular processes including cell cycle, autophagy, and metabolism.

Dynamic interactions: Investigating the dynamic nature of chaperone interactions and conformational changes over time in a cellular context. This includes studying chaperone complexes, co-chaperones, and post-translational modifications that influence their activities.

Therapeutic: Exploring the potential therapeutic applications of manipulating chaperone function. This includes developing drugs that modulate chaperone activity for the treatment of diseases including cancer, neurodegenerative disorders, and psychiatric diseases.

Veena Prahlad, PhD:

Studies about the *basic fundamentals in the chaperone and/or stress fields*:

Understanding how the *brain/nervous system*, through its cognitive, affective, and motivational states alters cellular, tissue, and organ level stress responses during normal physiology and disease (alternative formulation: *cephalic control of stress responses*).

Gaps of knowledge: Adaptation of "non-model" organisms to changing and extreme environments.

Also, we need *more reviews/perspectives* discussing what functions in a cell or organism need to be maintained homeostatic and chaperoned, and which can vary during the response to environmental challenges. (alternative formulation: strategies of stress responses).

Elizabeth A. Repasky, PhD:

Studies addressing *the impact of physiological stress on the immune system* (environmentally imposed or from internal changes, such as tumor growth). *Impact of physiological stress on energy balance* in the organism. *Role of baseline stress* in the organism on subsequent stress responses.

Manuela Truebano, PhD:

The "in situ" heat shock response characterizing cellular stress in nonmodel organisms in their natural environment.

Integration of cellular and physiological stress responses in nonmodel organisms.

Evolution of the stress response under climate change.

Andrew W. Truman, PhD:

Chaperone code: understanding the reciprocal connection between chaperones and signal transduction.

The role of chaperones in the cellular response to Deoxyribonucleic acid damage: How chaperones fold, stabilize, and activate proteins and protein complexes important in the detection and repair of Deoxyribonucleic acid damage.

Understanding chaperone clients: What defines a client protein? What determines which proteins are clients and which are not?

Matthias C. Truttmann, PhD:

These are some fundamental questions to address:

Redundancy versus diversification: why do humans encode for > 10 Heat Shock Protein 70s?

Over-chaperoning: is there too much?

Chaperone activity and aging.

Patricija van Oosten-Hawle, PhD:

Controlling inter-tissue stress communication pathways within organisms: Understanding how protective stress response mechanisms are regulated at an organismal level to maintain cell-protective activity for extended periods and exploiting these mechanisms to combat age-associated diseases and enhance healthspan.

Examining the functions of the molecular chaperone Heat Shock Protein 90 in both the whole organism and specific tissues.

Exploring the complex role of the gut as a central signaling hub that orchestrates and integrates organismal stress responses, metabolic responses, and the immune response.

Mark R. Woodford, PhD:

Basic knowledge: Impact of chaperones on mitochondrial function: Understand the impact of chaperone function on the mitochondrial response to fluctuations in nutrient availability and other stress conditions, and the application to disease. Understand the impact of chaperones on metabolic flux regulation. Describe the role of chaperones in submitochondrial protein localization, and ultimately mitochondrial protein fate decisions.

Emerging areas of study: Chaperone code: Mechanistic understanding of how metabolic intermediates impact signaling through the regulation of mitochondrial chaperone function.

Therapeutics: Mitochondrial therapeutic targets: Identification and characterization of mitochondrial therapeutic targets in disease states such as cancer, diabetes, and neurodegeneration.

We are welcoming your submissions and we guarantee a top-quality peer-review process. I emphasize that the quality of our peer-review process will continue standing on the top of the podium. Like my predecessors, it is a priority for us to review all submissions rigorously, ensuring that only the highest quality research is released to the public.

With all my best wishes for a productive year,
Dimitra Bourboulia.
Editor-in-Chief, *Cell Stress and Chaperones*.

References

1. Hightower LE. Introducing R. William (Bill) Currie as the new Editor-in-Chief of Cell Stress & Chaperones. *Cell Stress Chaperones.* 2021;26:283–284. https://doi.org/10.1007/s12192-021-01194-5
2. Currie RW. Transitions. *Cell Stress Chaperones.* 2023;28:597–598. https://doi.org/10.1007/s12192-023-01396-z