I am delighted that in this edition we have four fantastic and diverse articles from the ISH new investigator community, clearly demonstrating the breadth of research being driven by early career researchers. The articles cover both clinical and basic science perspectives, and feature research investigating the role of the kidneys in blood pressure management and trying to understand mechanisms that could be exploited in the future of blood pressure control. There is also discussion of the implications of poorly managed blood pressure and the impact that this can have, from the cellular level to organ damage.

Cesar A. Romero is an Assistant Professor at Emory University, USA, where he has research interests in kidney function reserve (RFR). Despite its commonplace in clinical practice, the mechanisms controlling RFR and the role it plays in homeostasis are unclear. Cesar’s article addresses mechanistic insights into RFR and offers a fresh perspective on the potential role that RFR plays in renal vasodilation, sodium homeostasis and resultant blood pressure regulation. His work could lead to novel clinical approaches.

Sticking with the kidneys, Ana Paula de Oliveira Leite, a Postdoctoral Researcher at Tulane University, USA, continues to address mechanisms for controlling blood pressure and hypertension; specifically discussing the roles of angiotensin II in proximal tubules. Ana summarises findings from her research using proximal tubule-specific mouse models, in which she has tested the roles of intratubular angiotensin II and its AT1 (AT1a) receptors and the key role in sodium reabsorption.

Next, Emily Waigi, a PhD Student at University of South Carolina, USA, highlights the relationship between high blood pressure and cognitive function and vascular Alzheimer’s disease. She presents consideration of a therapeutic approach for managing the disease progression involving the advanced glycation receptor and the role in soluble protein oligomer-related disease progression.

Finally, Joanne O’Donnell, a Research Fellow at Monash University in Australia, reminds us of the importance of cell death in hypertension, and details the consequences of different cell death pathways. She pays particular attention to apoptosis and describes a related phenomenon that results in the onset or accelerated hypertension.