



VANDERBILT

School of Medicine Basic Sciences

Department of Pharmacology

2024 - 2025 Seminar Series

The “little brain” on the heart

The intrinsic cardiac nervous system (ICNS), also named ‘the little brain on the heart’, plays a vital role in the brain–heart axis and represents the forefront of neuro–cardiac interaction. The ICNS holds significant therapeutic potential for treating various human cardiac diseases including atrial fibrillation, heart failure, and sudden cardiac arrest. However, progress in developing ICNS–based therapies has been limited due to our incomplete understanding of this critical neurocardiac interface. Here we utilize a range of state-of-the-art sequencing, imaging, and genetic tools in mice to explore how the ICNS maintains heart homeostasis under regular and extreme conditions. Our findings reveal that the ICNS employs distinct pathways to support heart function under various conditions, enhancing our understanding of the brain–heart axis and offering insights for potential treatments for heart diseases. We further describe the differential strategies utilized to achieve organ–specific organization between the ICNS and the enteric nervous system.

18 March 2025

4:00 PM

1220 MRB III

Host : Shan Meltzer

Sponsor
Elaine Sanders-Bush Lectureship



Rui Chang, Ph.D.

Associate Professor of Neuroscience
Cellular & Molecular Physiology
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