

**FOCUS ISSUE: TECHNOLOGY AND HEART FAILURE THERAPEUTICS  
2023 SHARK TANK**

EDITOR'S PAGE

# Shark Attack

## Introducing the 2023 Technology and Heart Failure Therapeutics Shark Tank Edition of *JACC: Basic to Translational Science*



Douglas L. Mann, MD, *Editor-in-Chief, JACC: Basic to Translational Science*

On behalf of the editors, I am extremely pleased to introduce the 2023 Technology and Heart Failure Therapeutics (THT) Shark Tank Edition. Following up on the success of last year's collaboration with the Cardiovascular Research Foundation, wherein we published a compendium of research letters in a supplemental issue of *JACC: Basic to Translational Science* that summarized the presentations by investigators participating in the inaugural 2022 THT Shark Tank program,<sup>1</sup> this year we elected to allocate a significant portion of the April issue to highlighting the innovating technologies featured in the 2023 THT Shark Tank program held in Boston, Massachusetts, on March 21, 2023. To be consistent, the remaining 3 research articles in the April Issue of the *Journal* are also thematically focused on heart failure biology and therapeutics.

In this issue of *JACC: Basic to Translational Science*, we feature 6 presentations by start-up companies who had the opportunity to introduce their concepts to an experienced panel of clinicians, regulatory experts, and investors in the second annual THT Shark Tank competition. Each Shark Tank presentation is summarized in a brief research letter that is accompanied by a video link to the presentation by the inventors, followed by a free-wheeling discussion of the presentations by the sharks. As shown below, the technologies featured in this focus issue range from monitoring devices coupled, to devices for measuring interstitial edema and managing acute decompensated and chronic heart failure. To view the authors' full presentations, please visit <https://www.jacc.org/journal/basic-translational/tht-2023-shark-tank>.

- A Novel Multi-Sensor Device for Absolute Intracardiac Pressure Measurement, Detection, and Management of Heart Failure
- Voice of the Heart
- Novel Intranasal Loop Diuretic
- A Subcutaneous Multiparameter Sensor With Integrated Interstitial Fluid Pressure Measurement for Remote Heart Failure Monitoring
- Prolonged Low-Intensity Ultrasound Delivery to Kidneys as Potential Treatment for Acutely Decompensated Heart-Failure Patients With Renal-Deficiency
- Minimally Invasive Fully Implantable Cardiac Support Technology To Restore Cardiac Function in Heart Failure Patients

In the first Editor's Page of this *Journal* we stated that "We will measure our long-term success by the number of new therapies and/or translational avenues first explored in *JACC: Basic to Translational Science*."<sup>2</sup> In keeping with that commitment, I am excited to announce that we are publishing the results of the first-in-human clinical trial of the Doraya catheter in this issue.<sup>3</sup> We had featured this novel technology as part of the first Shark Tank Edition in March 2022.<sup>4</sup>

I hope the readership will conclude, as I do, that we are witnessing the emergence of several new approaches that may eventually lead to improved clinical outcomes for heart failure patients. In closing, I would be completely remiss if I did not thank Drs Dan Burkhoff and Juan Granada, who worked closely with our publications team to get this special focus issue published within a month

of the actual THT meeting. In addition, I would like to thank Tionge Lungu, Education Coordinator for the Cardiovascular Research Foundation, for all her help in linking the video content from the THT meeting with the *JACC* website, as well as all of the talented staff at *JACC* who made this issue possible, including but in no way limited to Justine Turco (Vice President of Publishing), Monica Payne-Emerson (Executive Managing Editor), and, with a special heartfelt thanks, Kim Trevey (Managing Editor) and Jennifer Rapp (Editorial Assistant), who are the two special people who make everything happen precisely when it needs to happen.

Honestly, I am not quite sure how they do it, but I am extremely grateful for their dedication and professionalism. As always, it would be great to hear your thoughts on this focus issue *JACC: Basic to Translational Science*, either through social media (#JACCBTS) or by e-mail ([JACC@acc.org](mailto:JACC@acc.org)).

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## REFERENCES

1. Mann DL. Making science fun again: technology and heart failure therapeutics 2022 shark tank. *J Am Coll Cardiol Basic Trans Science*. 2022;7:311-312.
2. Mann DL, Annex BH, Bishopric NH, et al. Introducing *JACC: Basic to Translational Science*: why now? *J Am Coll Cardiol Basic Trans Science*. 2016;1:1-2.
3. Zymliński R, Biegus J, Vanderheyden M, et al. Safety, feasibility of controllable decrease of vena cava pressure by Doraya catheter in heart failure. *J Am Coll Cardiol Basic Trans Science*. 2023;8(4):394-402.
4. Zymliński R, Dierckx R, Biegus J, Vanderheyden M, Bartunek J, Ponikowski P. Novel IVC Doraya catheter provides congestion relief in patients with acute heart failure. *J Am Coll Cardiol Basic Trans Science*. 2022;7:326-327.