Summary of Research Efforts

This serves as a summary of current research progress, updates, and projects (clinical, translational, and programming). The most recent update to this page was as of Friday, November 18, 2022. Please see here for weekly [updates](https://asshah4.github.io/research/t32/t32-updates.html).

The major research focuses are currently on:

1. **Stress and Cardiovascular Epidemiology**: Physiological and psychological stress and cardiovascular mortality, from a neurocardiac perspective.
2. **Stress and Arrhythmogenesis**: Mechanisms behind stress and arrhythmia generation (or degeneration) in a pre-clinical and clinical electrophysiology context.
3. **Computational Neurocardiology and Biostatistics**: Programming-based approaches in signal processing and biostatistics.
4. **Clinical Projects**: Work being done as a cardiology fellow at UIC/JBVA.

# Stress and Cardiovascular Epidemiology

* Effect of autonomic reactivity and resting vagal tone in cardiovascular mortality
* Depression and dysregulation of the autonomic nervous system
* Circadian variability in autonomic function and microvascular coronary disease

# Stress and Arrhythmognesis

## Atrial Fibrillation

* A catheter-ablation registry is being developed. The current status of the data acquisition process can be seen [here](https://asshah4.github.io/aflubber). No clinical data is available externally.
* [AHA Innovative Projects 2022](https://asshah4.github.io/research/grants/aha_innovative_project_2022.html) including atrial arrhythmia modulatio with NPY and atrial fibrillation phenotyping

# Clinical Projects

* Atrial fibrillation and efficacy of cardioversion
* Pulmonary embolism management with a coordinated response team (PERT)
* Endocarditis lesion characteristics in a gain-independent manner using pixel density changes
* Arrhythmia and device management in setting of endocarditis