

NON -TECHNICAL ABSTRACT: *(State in layman's terms the application's broad, long-term objectives and specific aims, making reference to the potential public benefits of the project.)*

Nitroxyl (HNO) is a molecule of extreme interest due, in part, to its potential utility as a treatment for heart failure. Currently HNO-donors are being developed as pharmacological agents in this regard. However, recent studies and proposals seem to indicate the possibility that HNO is generated endogenously as an agent responding to cardiovascular stress. Moreover, unpublished and provocative work previously performed in our lab has provided possible clues as to how HNO may be biosynthesized. Thus, this proposal represents our initial efforts to examine possible HNO biosynthesis. If this work leads to the discovery of the pathway for HNO generation, this represents a significant fundamental biochemical/physiological finding and should provide therapeutic targets for the development of treatments for cardiovascular, and other, diseases.