

## **AIMS<sup>2</sup> Research Project for Fall 2019 – Spring 2020**

**Title of Project:** Methods to wirelessly power intravascular blood pumps

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### **Goals and Objectives of the Project, Expectations and Outcomes**

The overall objective of this project, which is funded through the National Institute of Health, is to provide a framework on how to provide electrical power to implantable intravascular blood pumps without the use of percutaneous power cords. There are two subprojects for this research. The first is to create a two-dimensional computation model of a wireless transmitter coupled to tissue that allows us to predict the optimal transmitter geometry and spatial distance from an implanted receiver. The second subproject involves the fabrication and testing of wireless transmitters. Students that are interested in numerical modelling of Maxwell's equations (on MATLAB or COMSOL) and wireless power experimentation are encouraged to apply. Students with strong MATLAB backgrounds and/or familiarity with basic electronic equipment (ie. oscilloscope, function generators, etc.) are preferred. We are seeking two undergraduate students to work on this project. Please send a resume and/or a brief statement of your interest to [john.valdovinos@csun.edu](mailto:john.valdovinos@csun.edu).