Implantable and non-invasive devices to electrically stimulate the nervous system, commonly known as neuromodulation, bioelectronic medicine, or electroceutical devices, are growing exponentially as a clinical therapy.

In 2015, the Minnesota-based LifeScience Alley Association reported there are over 1000 on-going FDA-regulate clinical neuromodulation trials worldwide, with over 70 companies manufacturing or supporting neuromodulation therapies within the Minnesota area alone. Despite the rapid growth of this market sector, much of the success has been driven by phenomenology without a solid mechanistic understanding of how these therapies work.

In this seminar, Dr. Kip Ludwig will overview the neuromodulation space, and identify key gaps in our understanding of how these therapies work. He will discuss the driving reasons why these gaps have not been address historically, and describe new technologies and strategies he has implemented within his own lab to address these gaps. He will also discuss larger efforts from the wider neuromodulation community.