

BME464L Project (Fall 2013, Palmeri)

Implantable Epilepsy Device

Clinical Problem

[Cerene Biomedics](#), a startup company who won the Duke Startup Challenge a few years ago, proposed an implantable device in the brain that can reduce / prevent focal epileptic seizures by locally cooling the brain tissue. [1] The company has since disbanded, but there is still opportunity for a working prototype device to breathe new life into the effort.

Project Objective

Design a small, battery-powered, implantable device that can provide focal cooling of the brain surface in response to user perception of an impending seizure. The device must be able to reach a target cooling temperature and hold it for a specified amount of time.

Clinical / Research Contact

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References

[1] [Anticonvulsive Properties of Hypothermia \(Technology\)](#)