



Nnaoma Agwu

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ADVISOR/MENTOR: Dr. Gorlewicz
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BIOGRAPHY

Nnaoma Agwu is a Denver, Colorado native with roots tracing from Nigeria. With a lifelong passion for innovation and curiosity, he graduated with a B.S. in Bioengineering specializing in Medical Devices with a minor in Mechanical Engineering from Santa Clara University in 2016. After working professionally as a test engineer and Biomedical engineer for two years within the biomedical field, Nnaoma returned to academia to pursue a graduate degree in Biomedical Engineering. As a member of the CHROME Lab, he finds interest in increasing neurosurgeons' accessibility to unique targets for epilepsy and brain tumor treatments. His interests range from medical device design, innovation, robotics, surgical operational workflow, to entrepreneurship and biomechanics systems. When he isn't in lab, he enjoys time with friends and family, reading about new cultures, salsa dancing, soccer, and searching for the best paper airplane design.

RESEARCH

Traditional surgical treatments for intracranial lesions often include a craniotomy for resection, which requires a large surgical incision. Recent advancements in technology are now enabling minimally invasive approaches, one of which is called Laser Interstitial Thermal Therapy (LITT). In LITT, a laser probe is inserted into a tumor, and it is essentially heated from the inside-out, destroying it. Currently LITT surgical platforms are restricted to only deploying the laser probe along a straight pathway. This limits treatment capabilities, often leaving edges of tumors that are large or geometrically complex untreated. In this work, we have designed a steerable guide for LITT that is MRI-compatible, biocompatible, thermometry compatible, and seamlessly integrates within an FDA approved LITT surgical platform.



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