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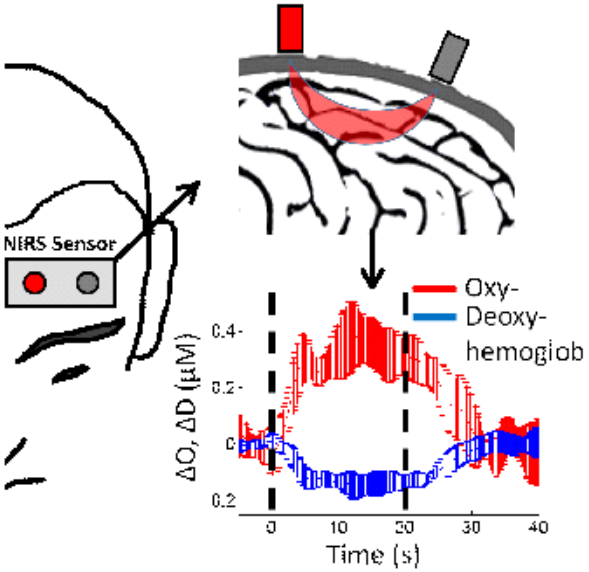
Non-invasive, diffuse optical imaging with near-infrared light gives contrast to the light absorbing and/or scattering structures in tissue. The dominant source of absorption contrast is hemoglobin in the microvasculature, which can be used to measure functional brain activation when placing a sensor on the head, as well as hemoglobin saturation in vascular tumors. Due to its non-invasiveness, imaging can be performed directly on patients. Using these methods, the group of Professor Kainerstorfer is focused on clinical applications with the emphasis spanning two primary areas: 1) Instrument and protocol development of non-invasive optical imaging which can yield biomarkers for disease diagnostics and monitoring, and 2) Translation of such imaging tools to answer clinical questions where microvascular imaging can be of use for understanding a pathophysiology or monitoring of disease.



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