The last decade has witnessed an explosion of research employing recording of electrical activity directly from the human brain. Intracranial recording provides a powerful window into the neural basis of cognition and has been applied to a host of human behaviors. I will first discuss how intracranial recording has provided novel insights into the neural basis of attention, language, memory and decision-making with the intracranial findings often challenging prior dogma in the field. I will then review our efforts using HFB activity to decode imagined speech in an effort to develop a brain computer interface for treatment of disabling language deficits.