



University of Iowa Health Care

The Iowa Neuroscience Institute (INI) at the University of Iowa Carver College of Medicine has an opening for a postdoctoral research fellow for an NIH funded research program studying how the forebrain controls and influences breathing as well as how the forebrain senses and responds to breathing. This is an exciting field right now in neuroscience and has broad implications for disease including sudden unexpected death in epilepsy (SUDEP), sudden infant death syndrome, empty nose syndrome, and many respiratory related diseases and disorders.

We are currently seeking a highly motivated postdoctoral fellow with prior experience in electrophysiology and respiratory related research.

Intracranial neurosurgical techniques are rapidly advancing our understanding of forebrain control of breathing and response to breathing. The research will take advantage of human intracerebral recordings through placement of intracranial electrodes in children, teenagers, and adults. The successful postdoctoral candidate will lead this research by using well-tested respiratory physiology paradigms along with human intracranial EEG (iEEG) to test hypotheses. She or he will spearhead the analyses of iEEG recordings and communicate the results.

Our recent landmark studies in the *Journal of Neuroscience* and *Journal of Clinical Investigation Insight* have identified a key node in the forebrain's control of breathing. We found that a focal site in the amygdala can inhibit breathing in humans when electrically stimulated and when seizures spread to this site. We have identified many other forebrain sites that respond to breathing and some that may predict errors in breathing, thus alerting our consciousness to alter and change our breathing when needed. These findings may prove critical for many respiratory related conditions and disorders.

Successful candidates will work directly with Dr. Brian Dlouhy, M.D. and become part of a highly successful and collaborative team in the human brain research lab (HBRL) of Dr. Matthew Howard, M.D. in conjunction with the lab of Dr. George Richerson, M.D., Ph.D., at the University of Iowa. Within the group, there is a strong commitment to mentorship and an excellent track record of success for academic oriented individuals.

Iowa City is a medium-sized culturally rich city that maintains outstanding communities in the arts, sciences, and literature. There are numerous opportunities for outdoor activities. USA Today ranked Iowa City as the third best-educated city in the nation and Forbes Magazine placed Iowa City among the top 10 small metropolitan areas for business. Iowa City is a safe and inexpensive place to live.

# Responsibilities

- Human intracranial electrophysiology recording and analysis (iEEG).
- Respiratory physiology paradigms (plethysmography, hypercapnic ventilatory response, intraoperative ventilator manipulated respiratory experiments, volitional breathing and breath holding paradigms, etc.).
- Communicating results at weekly lab meetings and written manuscripts for publication.
- Ordering and maintaining lab supplies.
- Maintaining compliance.

# Required Qualifications

- A PhD in neuroscience, engineering, or related
- One or more years of expertise in respiratory related neuroscience
- One or more years of experience with coding and iEEG or respiratory related electrophysiology data analysis
- Fundamental curiosity about how the brain controls, responds to, and senses breathing, and a willingness to engage in collaborative research
- Highly motivated, detail oriented, responsible individual with excellent communication, writing, and organizational skills.
- Fluency in speaking and writing in English
- Demonstrated ability to write results for publication in the scientific literature
- Statistical and programming skills; Must be proficient in Matlab
- Must be proficient in Microsoft Office, Excel, and Adobe software

The qualified candidate must provide proof of U.S. citizenship or current eligibility to work in the United States.

You may direct questions and/or applications to Dr. Brian Dlouhy (brian-dlouhy@uiowa.edu). This position is open immediately and candidates will be sought until the position is filled. To apply, please send a cover letter expressing your research expertise/qualifications, interests, and research/career goals with your CV and the names of at least three references in an email to brian-dlouhy@uiowa.edu.