


About



Katya
Assistant Professor of Neurology
(Not funded by SPARC)

Katya's lab studies stimulation techniques of the peripheral nervous system, to slow the progression of Parkinson's disease. In addition to training four researchers in her university-based lab, she spends most of her time writing and editing scientific papers. Often, she attends scientific meetings to investigate critical new findings to advance her understanding of new research and treatments.

Katya is intrigued by her recent discovery of the SPARC portal. She wants to apply and test a variety of novel tools and methodologies to support her research, help her students, and prepare for her next grant application.

“If we invest in research now, we can make a difference later in the treatment of our patients.”

Who is Katya?

AGE
39

FAMILY
Single

WORK
Assistant Professor, University of Alabama at Birmingham, Department of Neurology

EDUCATION
Ph.D., Neuromotor Science Temple University, Fellowship in Autonomic Disorders at Harvard Medical School

Expertise characterizing cell-type-specific connectivity, gene expression, and morphology using 3D histological tissue-clearing and microscopy imaging techniques.

CHARACTER
Inquisitive, extroverted, detail-oriented

TECHNOLOGY
Open to learning about new tools and resources and has started to use new software modeling tools in her research.

HOBBIES
Martial arts, reading, volunteering with science summer camps

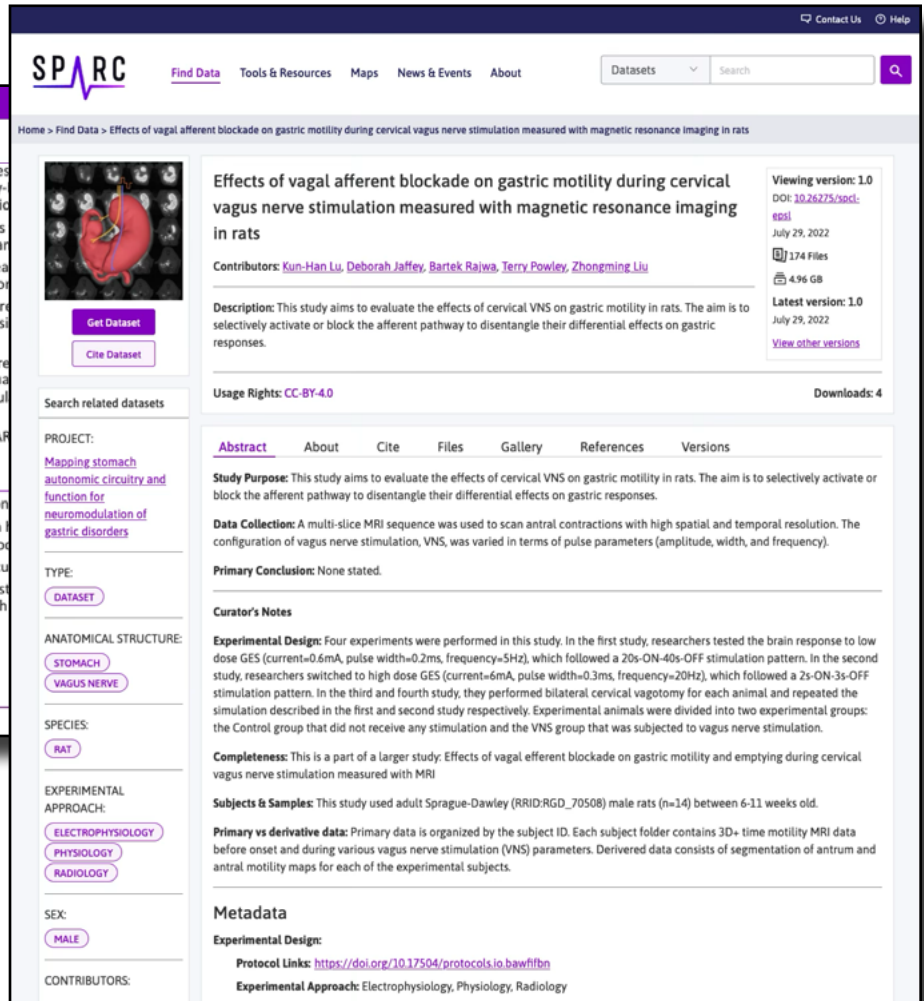
Aspirations

GOALS

- Access cutting-edge research to advance my university-based research on autonomic dysregulation
- Identify new resources (software, databases, etc.)
- Easily access new research for my grant applications
- Connect directly with researchers to share best practices and collaborations
- Refer my students to resources so they can run a virtual lab and make changes in neurostimulation treatments
- Learn more about SPARC to advance my work

FRUSTRATIONS

- No contact information
- Unclear instruction on how to use interactive mapping tools
- Lack of clear, user documentation
- Confusing and inconsistent search results, granular search



The screenshot shows the SPARC dataset page. The title is "Effects of vagal afferent blockade on gastric motility during cervical vagus nerve stimulation measured with magnetic resonance imaging in rats". The page includes a 3D anatomical model of a rat's stomach and vagus nerve. Key information includes:

- Contributors:** Kun-Han Lu, Deborah Jaffey, Bartek Rajwa, Terry Powley, Zhongming Liu
- Description:** This study aims to evaluate the effects of cervical VNS on gastric motility in rats. The aim is to selectively activate or block the afferent pathway to disentangle their differential effects on gastric responses.
- Usage Rights:** CC-BY-4.0
- Downloads:** 4
- Abstract:** This study aims to evaluate the effects of cervical VNS on gastric motility in rats. The aim is to selectively activate or block the afferent pathway to disentangle their differential effects on gastric responses.
- Data Collection:** A multi-slice MRI sequence was used to scan antral contractions with high spatial and temporal resolution. The configuration of vagus nerve stimulation, VNS, was varied in terms of pulse parameters (amplitude, width, and frequency).
- Primary Conclusion:** None stated.
- Experimental Design:** Four experiments were performed in this study. In the first study, researchers tested the brain response to low dose GES (current=0.6mA, pulse width=0.2ms, frequency=5Hz), which followed a 20s-ON-40s-OFF stimulation pattern. In the second study, researchers switched to high dose GES (current=6mA, pulse width=0.3ms, frequency=20Hz), which followed a 2s-ON-3s-OFF stimulation pattern. In the third and fourth study, they performed bilateral cervical vagotomy for each animal and repeated the stimulation described in the first and second study respectively. Experimental animals were divided into two experimental groups: the Control group that did not receive any stimulation and the VNS group that was subjected to vagus nerve stimulation.
- Subjects & Samples:** This study used adult Sprague-Dawley (RRID:RGD_70508) male rats (n=14) between 6-11 weeks old.
- Primary vs derivative data:** Primary data is organized by the subject ID. Each subject folder contains 3D+ time motility MRI data before onset and during various vagus nerve stimulation (VNS) parameters. Derived data consists of segmentation of antrum and antral motility maps for each of the experimental subjects.

Goals

To allow scientists and other researchers to benefit from critical data to advance bioelectronic medicine through open science.

Process

Provided UX support in Information Architecture, User Research and UX Design and Content strategy for the National Institutes of Health (NIH) Stimulating Peripheral Activity to Relieve Conditions (SPARC) research portal (sparc.science).

