Human Subjects Protocol (HSP)

Form Version: February 1, 2017

- You are applying for IRB review of the research described in this form.
- To avoid delay, respond to all items in order and include all required approvals and documents. For more tips, see the UAB IRB website.
- To complete the form, click the underlined areas and type or paste in your text; double-click checkboxes to check/uncheck.
- All responses should be Times New Roman, Bold, and Underlined.
- Submit all materials to AB 470, 701 20th Street South, Birmingham, AL 35294-0104.

Indicate the type of review you are applying for:

☐ Convened (Full) IRB ***-OR-***

☒ Expedited - See the Expedited Category Review Sheet, and indicate the category(ies) here:

☐1 ☐2 ☐3 ☐4 ☒5 ☒6 ☐7

1. IRB Protocol Title: Unlocking Dystonia from Parkinson's Disease with Directional DBS Technology

2. Investigator and Contact Person

a. Name of Principal Investigator: **Harrison Walker**

Degree(s)/Title: **MD, Associate Professor** BlazerID: **hcwalker**

Dept/Div: **Neurology/Medicine** Mailing Address: **SC 60** UAB ZIP: **0017**

Phone: **4-0683** Fax: **6-4039** E-mail: **hcwalker@uab.edu**

b. Name of Contact Person: **Jennifer Mahaffey** Title: **Prog Mgr II** Phone: **6-4030**

E-mail: **jmahaffe@uab.edu** Fax: _____

INVESTIGATOR ASSURANCE STATEMENT & SIGNATURE

By my signature as Principal Investigator, I acknowledge my responsibilities for this Human Subjects Protocol, including:

- Certifying that I and all key personnel comply with reporting requirements of the UAB Conflict of Interest Review Board;
- Certifying that the information, data, and/or specimens collected for the research will be used, disclosed and maintained in accordance with this protocol and UAB policies;
- Following this protocol without modification unless (a) the IRB has approved changes prior to implementation or (b) it is necessary to eliminate an apparent, immediate hazard to a participant(s);
- Verifying that all key personnel listed on the protocol have completed initial IRB training and will complete continuing IRB training as required;
- Verifying that all personnel are licensed/credentialed for the procedures they will be performing, if applicable;
- Certifying that I and all key personnel have read the *UAB Policy/Procedure to Ensure Prompt Reporting of Unanticipated Problems Involving Risks to Subjects or Others to the IRB, Institutional Officials, and Regulatory Agencies* and understand the procedures for reporting;
- Applying for continuing review of the protocol at least annually unless directed by the IRB to apply more frequently;
- Conducting the protocol as represented here and in compliance with IRB determinations and all applicable local, state, and federal law and regulations; providing the IRB with all information necessary to review the protocol; refraining from protocol activities until receipt of initial and continuing formal IRB approval.

Signature of Investigator: _____ **Date:** 12/11/17

3. Protocol Personnel

Including the PI, list all key personnel (each individual involved in the design and conduct of this protocol). See the Key Personnel Flowchart.

Complete the UAB (3.a.) and non-UAB (3.b) tables, as applicable. Use the checkboxes to show each individual's role, whether the individual has financial interests as defined by the UAB CIRB, and briefly describe the individual's protocol responsibilities and qualifications to perform those responsibilities. **Insert additional rows as needed.**

FDA: For studies involving investigational drugs, list all investigators who will be listed on FDA Form 1572 and include a copy of the 1572. Send the IRB a copy of Form 1572 any time you update the form with the FDA.

a. UAB Personnel (includes UAB affiliates and Children's of Alabama personnel)

Name, Degree, and Dept.	Blazer ID	Role	Financial Interest?*	Protocol Responsibilities and Qualifications (indicate if this person obtains consent)
Name: Harrison Walker Degree: MD Department: Neurology	hcwalker	Principal Investigator	☒No ☐Yes	Associate Professor, Project conception, oversight of all aspects of project, consent privileges, clinical assessments, data acquisition, data analysis, interpretation of findings, publication of results
Name: Barton Guthrie Degree: MD Department: Neurosurgery	Guthrie1	☒Sub-Investigator ☐Other	☒No ☐Yes	Professor, Consent privileges, interpretation of findings, publication of results
Name: Arie Nakhmani Degree: PhD Department: Electrical Engineering	anry	☒Sub-Investigator ☐Other	☒No ☐Yes	Assistant Professor, data analysis, interpretation of findings, publication of results
Name: Christopher Hurt Degree: PhD Department: Physical Therapy	cphurt	☒Sub-Investigator ☐Other	☒No ☐Yes	Assistant Professor, Data acquisition, data analysis, interpretation of findings, publication of results
Name: Daniel Phillips Degree: EdD Department: Speech Pathology	dphill	☒Sub-Investigator ☐Other	☒No ☐Yes	Instructor, Data acquisition, data analysis, interpretation of findings, publication of results
Name: Roy Martin Degree: PhD Department: Neurology	rmartin	☒Sub-Investigator ☐Other	☒No ☐Yes	Associate Professor, Data acquisition, data analysis, interpretation of findings, publication of results
Name: Gary Cutter Degree: PhD Department: Biostatistics	Cutterg	☒Sub-Investigator ☐Other	☒No ☐Yes	Professor, Statistical analyses, interpretation of findings, publication of results
Name: Mark Bolding Degree: PhD Department: Radiology	mbolding	☒Sub-Investigator ☐Other	☒No ☐Yes	Assistant Professor, Data acquisition, data analysis, interpretation of findings, publication of results
Name: Anthony Nicholas Degree: , MD, PhD Department: Neurology	nicholas	☒Sub-Investigator ☐Other	☒No ☐Yes	Professor, data analysis, interpretation of findings, publication of results
Name: Zachary Irwin Degree: PhD Department: Neurology	irwinz	☐Sub-Investigator ☒Other	☒No ☐Yes	Post-doctoral Fellow, Data acquisition, data analysis, interpretation of findings, publication of results
Name: Christopher Gonzalez Degree: MS Department: Neurology	Clg17	☐Sub-Investigator ☒Other	☒No ☐Yes	Research Assistant, Consent privileges, data acquisition, data analysis, interpretation of findings, publication of results
Name: Daniel Kuhman Degree: MS Department: Physical	dkuhman	☐Sub-Investigator ☒Other	☒No ☐Yes	Research Specialist, Data Acquisition, data analysis, interpretation of findings, publication of results

Therapy				
Name: Mohammad Awad Degree: MS Department: Electrical Engineering	Mawad90	☐Sub-Investigator ☒Other	☒No ☐Yes	Graduate student , Software and hardware development, data analysis
Name: Melissa Wade Degree: CRNP Department: Neurology	tbicurn	☐Sub-Investigator ☒Other	☒No ☐Yes	Certified Registered Nurse Practitioner, data acquisition, consent privileges
Name: Tesia Pair Degree: BS Department: Neurology	tesia	☐Sub-Investigator ☒Other	☒No ☐Yes	Study Coordinator, Consent privileges, patient scheduling
Name: Margaret Ashlie Cassidy Degree: RN Department: Neurology	Mam0908	☐Sub-Investigator ☒Other	☒No ☐Yes	Clinical Care Coordinator , Consent privileges, data acquisition
Name: Julie Boyd Degree: PA Department: Neurology	Jmboyd2	☐Sub-Investigator ☒Other	☒No ☐Yes	Physician Assistant, Consent privileges

b. Non-UAB Personnel Relying on UAB IRB - If you are requesting that the UAB IRB serve as the IRB of record for anyone not affiliated with UAB, list these individuals below.

Name and Degree	From Institution with or without own IRB?	Financial Interest?*	Protocol Responsibilities and Qualifications (indicate if this person obtains consent)
Name: _____ Degree: _____ Institution: _____ Email: _____	☐Has own IRB but requests that UAB IRB serve as IRB of record?-*OR*- ☐Does not have own IRB and needs to rely on UAB IRB.	☐No ☐Yes	_____

***Financial Interest** – for each individual listed above, answer **Yes** or **No** as to whether the individual or an immediate family member has any of the following:

- An ownership interest, stock options, or other equity interest related to the investigator's institutional responsibilities of any value.
- Compensation greater than $5,000 in the previous two years when aggregated for the immediate family
- Proprietary interest including, but not limited to, a patent, trademark, copyright, or licensing agreement.
- Board of executive relationship, regardless of compensation.
- Any other Financial Interest as defined by the UAB CIRB.

UAB Personnel: If the individual or his/her spouse or dependent child has a Financial Interest, a disclosure has to be made to the UAB CIRB. A completed CIRB evaluation has to be available before the IRB can complete its review.

Non-UAB Personnel: If the individual has a Financial Interest, ***include a copy of the report from his/her own institution's conflict of interest review with this submission to the UAB IRB.***

c. Do the investigators listed above include any students using this research for their thesis or dissertation?

☒ No, continue with Item 3.d.

☐ Yes, complete the following

Student Name	Thesis/Dissertation Title

d. Is the principal investigator a student, fellow, or resident? ☐Yes ☒No

If Yes, complete items below and obtain signature of faculty advisor or supervisor:

Supervisor's Name: _____

Degree(s) / Job Title: _____

Additional Qualifications pertinent to the protocol: _____

Telephone: _____

E-Mail: _____

Signature: _____

e. Describe the principal investigator's activities related to this protocol and provisions made by the PI to devote sufficient time to conduct the protocol: **The Principal Investigator (PI) will provide oversight and guidance on conduct of this study. The PI will designate responsibilities to study**

personnel. The PI has sufficient time and effort available to allow a successful management of this study.

f. Is medical supervision required for this research? ☐Yes ☒No

If Yes, who will provide the medical supervision?

☐ PI will provide ***-OR-***

☐ Other:

Name: _____ Telephone: _____

If other than PI, obtain signature of person providing medical supervision:

Signature _____

g. Describe your process for ensuring all key personnel are adequately informed about the protocol and their research-related duties and functions: **The PI will conduct study meetings with study personnel and assign responsibilities. Research meetings, will be held where all personnel are updated on all issues regarding the organization, execution, and follow-up for the study. Scientific meetings will occur weekly (Dr. Walker's weekly lab meeting) to discuss interpretation of research data from the study.**

4. Funding

Is this protocol funded? ☒Yes ☐No

If No, specify that costs of the protocol will be covered by funds from the UAB department or other source named: _____

If Yes, attach one copy of completed application or request for funding sent to sponsor, and complete a-d.

a. Title of Grant, Contract, or Agreement: **Unlocking dystonia from Parkinson's Disease with directional DBS technology**

b. UAB PI of Grant, Contract, or Agreement: **Harrison Walker, MD**

c. Office of Sponsored Programs (OSP) Assigned Number: **000518202**
(If not yet available, enter "Pending" and provide upon receipt from OSP.)

d. Sponsor, Funding Route:
(Check and describe all that apply)
(If subaward, list both the funding source and the institution receiving the direct award)

☐ Gov't Agency or Agencies—Agency name(s): _____
- ☐ Department of Defense (DoD): Identify DoD component: _____
- ☐ Department of Energy (DOE)
- ☐ Department of Justice (DOJ)
- ☐ Department of Education

☐ NIH Cooperative Group Trial - Group name: _____

☒ Private Nonprofit (e.g., Foundation) - Name: **Michael J. Fox Foundation for Parkinson's Research**

☐ Industry, investigator-initiated - Name: _____
Describe the funding arrangement: _____
NOTE: The UAB IRB typically only reviews industry-sponsored protocols that are investigator initiated or when the protocol qualifies for expedited review or involves gene therapy.

☐ UAB Departmental/Division Funds—Specify: _____

5. Locations Involved

a. Indicate all performance sites that will provide space, services, or facilities for the conduct of this protocol.

☒ UAB Hospital

☐ UAB Hospital - Highlands
☒ The Kirklin Clinic of UAB Hospital
☐ The Kirklin Clinic at Acton Road
☐ UAB Callahan Eye Hospital
☐ UAB Clinical Research Unit
☐ Children's of Alabama
☐ Birmingham Veterans Affairs Medical Center
☐ Jefferson County Department of Health
☒ Other (i.e., any performance site not listed above, including those covered by subawards related to this protocol) - Describe: **Sparks Center 3rd and 4th floor**
NOTE: Documentation of IRB approvals from sites receiving subawards must be received by the UAB OIRB before funding will be released for that subaward.

b. Describe the space, service, or facilities available for the conduct of the research in the performance sites listed in Item 5.a (For research on UAB campus, include building names): **Recruitment will occur at any of the above during Dr. Walker's IRB-161018001 study visit, procedures will occur at Sparks 4th floor, TKC, and Hospital. Other study activities may occur at Sparks Center 3rd floor; however, no subject contact will occur there.**

c. Is this protocol a clinical trial requiring clinical services at one of the performance sites listed in Item 5.a above? ☐Yes ☒No
If Yes, will any of the services be billed to either participants/their insurance or to the study account through the Hospital Billing Office (PFS) or the HSF Billing Office (MSO)? ☐Yes ☒No

If Yes, submit a Full Fiscal Approval Process (FAP)-designated unit submission to s complete a FAP submission and send to fap@uab.edu. For more on the UAB FAP requirements, go to FAP - SiteMinder Processes.

d. Is this a field study? ☐Yes ☒No
If Yes, describe the community and include information about how the community will be involved in the design, implementation and analysis of the research. This would include focus groups, training local facilitators/community health advisors: _____

e. Has this protocol been rejected or disapproved by another review board (another IRB, similar review board, or departmental review committee(s)) that authorizes the use of its patient populations? ☐Yes ☒No
If Yes, provide name(s) of the review board(s) and reason(s) not approved: _____
Attach copies of the disapprovals.
NOTE: If this protocol is subsequently rejected or disapproved by another review board, promptly notify UAB IRB.

f. Will the protocol be conducted at or recruit participants from the Birmingham Veterans Affairs Medical Center (BVAMC)? ☐Yes ☒No
If Yes, describe the involvement of the BVAMC: _____
Attach the VA IRB approval and VA IRB-stamped consent form(s), if applicable.
NOTE: See the BVAMC section of the IRB Guidebook for more information.

g. Will the protocol be conducted at or recruit participants from the Jefferson County Department of Health (JCDH)? ☐Yes ☒No
If Yes, describe the involvement of the JCDH and list the JCDH clinics being used: _____
Attach the JCDH Research Review Panel approval, if applicable.
NOTE: Human subjects research conducted at certain JCDH clinics requires review by the JCDH Research Review Panel. See the JCDH section of the IRB Guidebook for more information.

6. Clinical Trial

Does this protocol meet the following definition of a clinical trial? ☐Yes ☒No

**A research study in which one or more human subjects are prospectively assigned to one or more interventions (which may include placebo or other control) to evaluate the effects of those interventions on health-related biomedical or behavioral outcomes. For more information, see the full definition of clinical trial here.*

If Yes, you will need to fulfill the following requirements (regardless of funding):

a. All key personnel must complete the Good Clinical Practices (GCP) training. For information on this requirement, visit the IRB website here.

b. This protocol must be registered on ClinicalTrials.gov. Provide the National Clinical Trial (NCT) identifier number: _____

If you have any questions regarding registering a study on ClinicalTrials.gov, email the UAB Center for Clinical and Translational Science at ccts@uab.edu.

7. Multi-Site Studies

a. Is this a multi-site study with the UAB investigator as the lead investigator? ☐Yes ☒No

b. Is this a multi-site study with UAB as a coordinating site? ☐Yes ☒No

c. If Yes to a or b, describe the management of information obtained in multi-site research that might be relevant to the protection of participants. Include, at a minimum, how the following items are managed:

- IRB approvals from other sites
- Unanticipated problems involving risks to participants or others. (For example, if there is an unanticipated problem involving risks to participants or others, which site is responsible for reporting it?)
- Interim results
- Protocol modifications

_____

8. Drugs

Will any drugs or supplements be *used or studied* in this protocol? ☐Yes ☒No

If Yes, attach the completed Drug Review Sheet.

9. Devices

a. Will any devices be *studied* in this protocol? ☐Yes ☒No

b. Will any *not FDA-approved* devices be *used or studied* in this protocol? ☐Yes ☒No

If Yes to a or b, attach the completed Device Review Sheet.

10. Special Approvals

a. Does this protocol involve the use of radioisotopes? ☐Yes ☒No

If Yes, attach documentation of approval from the Radiation Safety Division.

b. Does this protocol include patients with contagious infections (e.g., mumps, measles, chickenpox, TB, meningitis)? ☐Yes ☒No

If Yes, attach documentation of approval from the Infection Control Committee of the appropriate facilities.

c. Does this protocol involve obtaining remnant biopsy or surgical material from the Department of Pathology or any other source? ☐Yes ☒No

If Yes, attach documentation of approval from the entity or individual providing the materials (e.g., the UAB Division of Anatomic Pathology Release of Pathologic Materials).

d. Does this protocol require obtaining any remnant clinical laboratory specimens, body fluids, or microbiological isolates from the Department of Pathology or any other source? ☐Yes ☒No
If Yes, attach documentation of approval from the entity or individual providing the materials (e.g., the UAB Division of Laboratory Medicine Release of Pathologic Materials).

e. Does this protocol use stored (existing) specimens from a repository? ☐Yes ☒No
If Yes, attach documentation of approval for use of specimens, and describe how existing specimens are labeled: _____

11. Use of Specimens

Does this protocol involve the collection of specimens? ☐Yes ☒No
If Yes, complete 11.a-11.h.
If No, skip to Item 12.

a. How will specimens be obtained, processed, distributed, and stored? _____

b. How will specimens be labeled (e.g., unique identifier, medical record number, Social Security number, name, date of birth)? _____

c. How will clinical data associated with the specimens be collected and stored? _____

d. What participant-identifying information will be collected and linked to the specimens? _____

e. What steps will be taken to maximize the confidentiality of linked identifiers? For example, procedures could include using a password-protected computer database to link identifiers, with limited personnel knowledgeable of the password, or coded identifiers released without the ability to link to clinical data (also called "stripped" or "anonymized" specimens). _____

f. Is genetic testing planned as part of this protocol? ☐Yes ☐No
If Yes, describe the planned genetic testing here. _____

g. Will specimens be stored for future use? ☐Yes ☐No
If Yes, indicate whether they will be used for the disease under study in this protocol or research on other diseases. _____

h. Will specimens be shared with other investigators in the future? ☐Yes ☐No
If Yes, answer i. and ii.
i. What identifiers, clinical information and demographic information will be shared; or will the specimens be stripped of identifiers (i.e., anonymized)? _____
ii. Outline your procedure for assuring IRB approval for release and use prior to release of specimens.
_____
NOTE: Investigators who receive and/or use these specimens must document approval from the appropriate IRB(s) before the specimens may be released.

12. Gene Therapy

Does this protocol involve gene therapy or administering recombinant materials to humans? ☐Yes ☒No
If Yes, submit the Gene Therapy Project Review Panel Report ***-OR-*** the Protocol Oversight Review Form For Clinical Vaccine Trials, as applicable.

13. HIPAA Privacy and Security

Will the PI or others obtain, review, or make other use of participants' "protected health information" (i.e., information, whether oral or recorded in any form or medium that (a) is created or received by a health care provider and (b) relates to past, present, or future physical or mental health or condition of an individual; or provision of health care; or payment for provision of heath care)? ☒Yes ☐No
If Yes, complete Items 13.a-13.f.
If No, skip to 14.

a. Will the data/information be stored or managed electronically (on a computer)?

☒Yes ☐No

b. Is the principal investigator requesting that the UAB IRB waive patient HIPAA authorization from another institution or entity (e.g., insurance company, collaborating institution)? ☐Yes ☒No

If Yes, attach copies of the privacy notices from each institution/entity, and provide the name of each institution/entity: _____

c. Indicate which of the entities would provide health information for this protocol, maintain health information as it was collected for this protocol, and/or store health information after it has been collected for this protocol.

- ☒ UAB Hospital or UAB Hospital - Highlands
- ☒ The Kirklin Clinic of UAB Hospital or Acton Road (and/or associated clinics)
- ☐ UAB Callahan Eye Hospital
- ☐ Children's of Alabama
- ☐ Jefferson County Department of Health
- ☐ School of Dentistry
- ☐ School of Health Professions
- ☐ School of Medicine
- ☐ School of Nursing
- ☐ School of Optometry
- ☐ University of Alabama Health Services Foundation
- ☐ UAB Health Centers
- ☐ Viva Health
- ☐ Ophthalmology Services Foundation
- ☐ Valley Foundation
- ☐ Medical West - UAB Health System Affiliate
- ☐ None - **If None, skip to Item 14.**

d. Indicate any information systems that will be the sources of information used for the protocol.

- ☒ A system maintained centrally by UAB Health System (these include the following: HealthQuest for registration, billing, and patient administration; PowerInsight (clinical data warehouse); Cerner IMPACT for PowerNotes for meds, Lab, Radiology, UED, Surgery

  NOTE: If a researcher needs information in a specified format or a specified time, the researcher must confirm with the unit who can supply the information/service that the request can be met before writing the information/service into the research protocol. In addition, the researcher must be aware that these services may have a cost attached that should be considered in the research budget.

  To request access to clinical systems for research purposes, visit https://www.oneuabmedicine.org/web/hsis/technical-support, click "Accounts Request" and complete the form indicating access for research purposed.
- ☐ Another system on a UAB server - Describe: _____

e. Indicate which of the listed identifiers will be accessed, associated and/or linked with the protected health information (PHI) used for this protocol.

- ☒ Names
- ☒ Geographic subdivisions smaller than a state
- ☒ Elements of dates (except year) related to an individual
- ☒ Telephone numbers
- ☐ Fax numbers

☐ Email addresses
☐ Social security numbers
☒ Medical record numbers
☐ Health plan beneficiary numbers
☐ Account numbers
☐ Certificate/license numbers
☐ Vehicle identifiers and serial numbers
☒ Device identifiers and serial numbers
☐ Biometric identifiers
☐ Web universal resource locators (URLs)
☐ Internet protocol address numbers
☐ Full-face photographic images
☒ Any other unique identifying number - Describe: **subject id code**
NOTE: Codes are not identifying as long as the researcher cannot link the data to an individual
☐ None - **If None, skip to Item 14.**

f. Choose one plan to describe your use of the personal health information:

☐ The data collected meet the specifications for a "limited data set" (LDS)
-If the LDS will leave the covered entity or will be received from another covered entity you will need a Data Use Agreement

☒ Research staff will obtain authorization from each participant to use the information **(for PD subjects with dystonia)**
-Include the HIPAA Authorization form, complete except for participant name and IRB protocol number, as the final page of the consent form

☒ PI requests waiver of authorization to use the information **(for PD subjects without dystonia)**
-Attach Waiver of Authorization and Informed Consent form

PROPOSED RESEARCH

- The IRB will not accept grant applications and/or sponsor's protocols in lieu of the items as outlined below.
- Do not separate responses from items. Instead, insert your response to each item below the item, keeping the information in the order of this form.

14. Purpose - in nontechnical, lay language

a. Summarize the purpose and objectives of this protocol in one short paragraph. **The purpose of this study is to measure brain rhythms from new directional deep brain stimulation (DBS) lead technology to better understand and treat dystonia associated with Parkinson's disease (PD). In this study, we will contrast brain activity in PD patients with and without dystonia with recordings from the DBS lead and the surface of the brain using electrodes that will already be in place for Dr. Walker's study, IRB-161018001, also known as the BRAIN initiative study.**

b. Describe how outcomes will be measured for this protocol. **We will measure brain waves from the implanted directional DBS lead in surgery and investigate whether these brain waves predict improvement by DBS measured by the Burke Fahn Marsden dystonia scale after surgery.**

15. Background - in nontechnical, lay language

Summarize in 2-3 paragraphs past experimental and/or clinical findings leading to the design of this protocol. Include any relevant past or current research by the PI. For drug and device studies, summarize the previous results (i.e., Phase I/II or III studies). **Although DBS helps motor symptoms, improvement varies across trials, individual patients, and over time. A major limitation to the advancement of DBS therapy is the lack of established biomarkers to tailor stimulation parameters in an individual. Emerging segmented ("directional") DBS leads provide opportunities to optimize therapy, but the**

additional contacts on these leads greatly magnify the complexity of programming adjustments in clinic.

Dystonia in PD is neglected as a research topic, but it is relatively common, especially in patients considering DBS. Dystonia "off" dopaminergic medications occurs most frequently in early onset PD, where it initially manifests as an involuntary twisting of the foot. Dystonia and other leg symptoms (freezing of gait, shuffling, balance problems, bradykinesia) limit mobility and can improve with DBS, but they are often more resistant to therapy versus arm symptoms. We and others have shown feasibility for interleaved DBS (a form of current steering or fractionation) in the STN / substantia nigra pars reticulata region to improve refractory freezing of gait from PD. New directional lead designs (pictured below), which include 8 rather than 4 contacts, allow flexibility to expand on this field shaping approach to better treat dystonia and other resistant leg symptoms versus conventional DBS.

We have pioneered minimally invasive electrophysiology biomarkers to leverage newly available directional DBS technology. These biomarkers have substantial potential to provide new knowledge about dystonia pathophysiology and motor system somatotopy (the anatomic representation of arm, leg, mouth, etc.). Here we will explore whether local field potentials (LFPs), recorded simultaneously from cortex with electrocorticography and from basal ganglia through the contact segments on the directional lead, can guide novel biomarker-driven strategies to better treat "off" dystonia and other motor symptoms in the legs.

16. Participants (Screening and Selection)

a. How many participants are to be enrolled at UAB (if other sites relying on UAB IRB, list the number for each site)? **30**

If multi-site study, total number at all sites/institutions: _____

b. Describe the characteristics of anticipated or planned participants (if multiple groups, repeat list for each group).

Sex: **both**

Race/Ethnicity: **all**

Age: **1. Age ≥18 years and ≤70 years.**

Health status: **subjects with Parkinson's disease**

c. From what population(s) will the participants be derived? **Recruitment will occur at any of the above during Dr. Walker's IRB-161018001 study**

Describe your ability to obtain access to the proposed population that will allow recruitment of the necessary number of participants: **Dr. Walker is the PI from the study in which we will recruit subjects.**

d. Describe the inclusion/exclusion criteria:

Inclusion:

- **Subjects enrolled in Dr. Walker's IRB-161018001 study that have Parkinson's disease with and without dystonia**

Exclusion:

- **Not enrolled in Dr. Walker's IRB-161018001 study**

e. If participants will comprise more than one group or stratification, describe each group (e.g., treatment/intervention, placebo, controls, sham treatment) **and** provide the number of participants anticipated in each group. **10 Parkinson's disease subjects with dystonia and 20 Parkinson's disease subjects without dystonia**

f. Indicate which, if any, of the special populations listed below will be involved in the protocol. Include the Special Populations Review Form (SPRF) if indicated.

☐ Pregnant Women: Attach SPRF—Pregnant Women, Fetuses, Neonates/Nonviable Neonates

☐ Fetuses: Attach SPRF—Pregnant Women, Fetuses, Neonates/Nonviable Neonates
☐ Neonates/Nonviable Neonates: SPRF—Pregnant Women, Fetuses, Neonates/Nonviable Neonates
☐ Prisoners: Attach SPRF—Prisoners
☐ Minors (<18 years old): Attach SPRF—Minors
☒ Employees or students at institution where research conducted
☐ Persons who are temporarily decisionally impaired
☐ Persons who are permanently decisionally impaired
☐ Non-English Speakers

For each box checked, describe why the group is included **and** the additional protections provided to protect the rights and welfare of these participants who are vulnerable to coercion: **We occasionally have subjects who work at UAB. Their participation is completely voluntary, and it is very unlikely that they would be directly linked to the PI or study team with respect to their work responsibilities. We would not consent patients who work immediately with or under any study personnel, and we would emphasize the voluntary nature of the study and that enrolling or not enrolling would have no bearing on their status as an employee or as a student otherwise**

g. List any persons other than those directly involved in the protocol who will be at risk. If none, enter "None": **none**

h. Describe the recruitment process (e.g., medical record review, referrals, letter of invitation, existing patients) that will be used to seek potential participants (e.g., individuals, records, specimens). Research recruitment by non-treating physicians/staff may require completion of Partial Waiver of Authorization for Recruitment/Screening. **Subjects will be recruited from Dr. Walker's IRB-161018001 study and approached at their baseline visit. Study records from Dr. Walker's IRB-161018001 and EMR will be reviewed for inclusion into this study. Note that the subjects without dystonia will not be seen specifically for this research. Only their data from the other study will be used. We have added an optional research section for use of data for future research in the IRB-161018001 consent. Only subjects with Parkinson's disease that do not have dystonia and are agreeable to use their data will be included in this study.**

i. If you will use recruitment materials (e.g., advertisements, flyers, letters) to reach potential participants, attach a copy of each item. If not, identify the source (e.g., IRB Protocol Number for approved databases) from which you will recruit participants. **n/a**

j. Describe the screening process/procedures for potential participants. **Subject records from Dr. Walker's IRB-161018001 study and the EMR will be screened for inclusion.**

17. Protocol Procedures, Methods, and Duration - in nontechnical, lay language

a. Describe the procedures for all aspects of your protocol. Tell us what you are doing. **This study occurs during five visits that are already scheduled as part of Dr. Walker's IRB-161018001 study. If subjects have dystonia associated with Parkinson's disease, we will consent and administer one additional rating scale (Burke-Fahn-Marsden Dystonia Rating Scale) to assess the severity of dystonia. This scale will add no more than 5 minutes to their other study visit.**

To measure the effects of DBS on dystonia, we will measure the change in the Burke-Fahn-Marsden Dystonia Rating Scale at 2, 4, 6, and 12 months after surgery versus preoperative baseline. This will allow us to contrast the effects of omnidirectional versus directional STN DBS on dystonia symptoms in patients with PD.

Note that the subjects with Parkinson's disease without dystonia will not be seen specifically for this research. Only their data from the IRB-161018001 study will be used. We have added an optional research section for use of data for future research in the IRB-161018001 consent. Subjects with

Parkinson's disease that do not have dystonia and are agreeable in the consent to use their data will be included in this study.

We will review and collect subject information from the UAB electronic medical record as well as collect data from their participation in the BRAIN Initiative study.

b. What is the probable length of time required for the entire protocol (i.e., recruitment through data analysis to study closure)? **3 years**

c. What is the total amount of time each participant will be involved? **~18 months (depends on when pre-op baseline visit occurs)**

d. If different phases are involved, what is the duration of each phase in which the participants will be involved? If no phases are involved, enter "None." **none**

e. List the procedures, the length of time the procedure takes, the total # of times the procedure is performed, and indicate whether each is performed solely for research or would already be performed for treatment or diagnostic purposes (routine care) for the population.
-Insert additional table rows as needed.
-If procedure is sometimes research and sometimes routine care, include on separate lines with number of times as each.

Procedure	Length of Time Required of Participants	Total # of Times the Procedure is Performed	Research (Res) –OR- Routine Care
Study visit 1: Consent and Burke-Fahn-Marsden Dystonia Rating Scale	**~20 min**	**1**	☒Res ☐Routine
Study visit 2: Burke-Fahn-Marsden Dystonia Rating Scale	**5 min**	**1**	☒Res ☐Routine
Study visit 3: Burke-Fahn-Marsden Dystonia Rating Scale	**5 min**	**1**	☒Res ☐Routine
Study visit 4: Burke-Fahn-Marsden Dystonia Rating Scale	**5 min**	**1**	☒Res ☐Routine
Study visit 5: Burke-Fahn-Marsden Dystonia Rating Scale	**5 min**	**1**	☒Res ☐Routine

f. Will an interview script or questionnaire be used? ☒Yes ☐No
If Yes, attach a copy.

g. Will participants incur any costs as a result of their participation? ☒Yes ☐No
If Yes, describe the reason for and amount of each foreseeable cost. **Travel/parking**

h. Will participants be compensated? ☒Yes ☐No

If Yes, complete i-v.

i. Type: (e.g., cash, check, gift card, merchandise): **check or direct deposit (UAB employee/staff only) Reimbursement for travel expenses may also be provided on a case-by-case basis and would be discussed with study personnel in advance if needed.**

ii. Amount or Value: **$35**

iii. Method (e.g., mail, at visit): **mail or direct deposit (UAB employee/staff only)**

iv. Timing of Payments: (e.g., every visit, each month): **within four weeks after each visit**

v. Maximum Amount of Compensation per Participant: **$175**

18. Benefits

Describe the potential benefits of the research. **Subjects may not benefit directly from taking part in this study. However, the knowledge gained may eventually help us to better optimize surgical targeting and to develop better stimulation strategies, based on a deeper understanding of how DBS alters the function of brain circuits in people with Parkinson's disease.**

19. Risks - in nontechnical, lay language

a. List the known risks for participants as a result of participation in the research. This should not include the minimal risk of loss of confidentiality. However, it should include any physical, psychological, social, economic, and/or legal risks. If there is a greater than minimal risk of loss of confidentiality describe why this is so. Do not list risks associated with the standard-of-care procedures.

NOTE: Risks included here should be included in the consent form or information sheet, as applicable.

The only risk would be fatigue from adding an additional rating scale to the subjects existing visit for the BRAIN initiative study. Subject may require a break.

b. Estimate the frequency, severity, and reversibility of each risk listed. **Minor and readily reversible**

c. Is this a therapeutic study or intervention? ☐Yes ☒No

If Yes, complete i.-iii.

i. Describe the standard of care in the setting where the research will be conducted: _____

ii. Describe any other alternative treatments or interventions: _____

iii. Describe any withholding of, delay in, or washout period for standard of care or alternative treatment that participants may be currently using: _____

d. Do you foresee that participants might need additional medical or psychological resources as a result of the research procedures/interventions? ☐Yes ☒No

If Yes, describe the provisions that have been made to make these resources available. _____

e. Do the benefits or knowledge to be gained outweigh the risks to participants? ☒Yes ☐No

If No, provide justification for performing the research: _____

20. Precautions/Minimization of Risks

a. Describe precautions that will be taken to avoid risks and the means for monitoring to detect risks.

Because this study only requires record review (from EMR and BRAIN initiative study) as well as one additional scale, the risks are very minimal. However, we will offer the subject a break when the scale is being administered to reduce fatigue.

If the protocol involves drugs or devices skip Items 20.b. and 20.c. and go to Item 21. Instead include this information in the Drug Review Sheet or Device Review Sheet, as applicable.

b. If hazards occur to an individual participant, describe (i) the criteria that will be used to decide whether that participant should be removed from the protocol; (ii) the procedure for removing such participants when necessary to protect their rights and welfare; and (iii) any special procedures,

precautions, or follow-up that will be used to ensure the safety of other currently enrolled participants. **Minimal risk study and no procedures would put the subject at risk for this study.**

c. If hazards occur that might make the risks of participation outweigh the benefits for all participants, describe (i) the criteria that will be used to stop or end the entire protocol and (ii) any special procedures, precautions, or follow-up that will be used to ensure the safety of currently enrolled participants. **Minimal risk study and no procedures would put the subject at risk for this study.**

21. Informed Consent

We will obtain consent for PD with dystonia subjects. We will obtain Waiver of authorization and informed consent for the PD subjects without dystonia as that will only be record/study record review.

a. Do you plan to obtain informed consent for this protocol? ☒Yes ☐No

If Yes, complete the items below.

If No, complete and include the Waiver of Informed Consent or Waiver of Authorization and Informed Consent, as applicable.

b. Do you plan to document informed consent (obtain signatures) for this protocol? ☒Yes ☐No

For PD with dystonia subjects only.

If Yes, complete the items below.

If No, complete the items below **and** include the Waiver of Informed Consent Documentation.

c. How will consent be obtained? **Study personnel with consenting privileges will discuss the study details with eligible participants previously identified through a review of clinic records. If the patient is interested, an informed consent discussion will be conducted and an informed consent form will be signed. All conversations regarding the study will be held in a private setting such as a clinic room or physician's office.**

d. Who will conduct the consent interview? **The PI or study personnel as listed in 3.**

e. Who are the persons who will provide consent, permission, and/or assent? **Study participant**

f. What steps will be taken to minimize the possibility of coercion or undue influence? **Potential subjects will be informed of risks and benefits, informed about voluntary participation and it will be emphasized that their participation will in no way affect their routine care.**

g. What language will the prospective participant and the legally authorized representative understand? **English**

h. What language will be used to obtain consent? **English**

i. If any potential participants will be, or will have been, in a stressful, painful, or drugged condition before or during the consent process, describe the precautions proposed to overcome the effect of the condition on the consent process. If not, enter "None." **none**

j. If any protocol-specific instruments will be used in the consenting process, such as supplemental handouts, videos, or websites, describe these here and provide a copy of each. If not, enter "None." **none**

k. How long will participants have between the time they are told about the protocol and the time they must decide whether to enroll? If not 24 hours or more, describe the proposed time interval and why the 24-hour minimum is neither feasible nor practical. **We are requesting a waiver of the 24-hour period for the dystonia subjects that will be approached during their baseline visit of the IRB-161018001 study. This study adds minimal additional time of their other study visit and minimal risk.**

22. Procedures to Protect Privacy

Describe how you will protect the privacy interest of the participants. Include how you will make sure others cannot overhear your conversation with potential participants and that individuals will not be publicly identified or embarrassed. **Recruitment of potential subjects will be conducted behind closed doors in an effort to minimize the ability of others to overhear these conversations. Research visits will be conducted individually and not in a group setting. Individuals will not be publicly identified or embarrassed.**

23. Procedures to Maintain Confidentiality

a. Describe how you will store research data to maintain confidentiality (both paper records and electronic data), including how access is limited. If data will be stored electronically anywhere other than a server maintained centrally by UAB, identify the department and all computer systems used to store protocol-related data. **All participant information will be coded with an assigned participant identification number, and study forms will not contain any other individually identifying information. All information and data will be grouped by identification number which is linked to participant name in a linking document. This linking document will be kept in a secure space in the Sparks Center accessible to study personnel only. In publications or presentations of the data, subjects will not be identified by name. Hard copies of data will be kept in the same manner as described above.**

De-identified clinical data will be shared with The Michael J. Fox Foundation for Parkinson's Research (the study funder). This data may be kept for storage at a central repository either hosted by The Michael J. Fox Foundation, its collaborators, or consultants and will be kept indefinitely.

b. Will any data from this protocol be given to any person, including the subject, or any group, including coordinating centers and sponsors? ☒Yes ☐No

If Yes, complete i-iii.

i. Who will receive the data? **MJFF and NIH (funder of BRAIN initiative study**

ii. What data will be shared? **Aggregate data, progress report data, and data to MJFF repository**

iii. How will the data be identified, coded, etc.? **de-identified**

24. Genomic Data Sharing (GDS) n/a

Researchers who collect genomic data as part of a NIH grant funded after January 25, 2008 may be required to submit those data to a NIH database for broad scientific sharing. See Genomic Data Sharing in the IRB Guidebook for more information.

a. Does this protocol involve the proposed submission of genetic data into genomic repositories created to share genetic information for research purposes? ☐Yes ☐No

b. Will UAB be uploading the final genomic data to the central repository (e.g., dbGaP)? ☐Yes ☐No

If Yes to both a and b, submit a Detailed Data Sharing Plan to the IRB for review. This plan should include any known data use limitations and indicate whether aggregate-level data are appropriate for general research use. For guidance see the NIH Genomic Data Sharing Policy.

c. Submit a copy of the NIH Institutional Certification Form.

To determine which certification form to include, answer i-ii.

i. Was this protocol funded prior to January 25, 2015? ☐Yes ☐No

- **If yes,** and consent will be obtained, submit the Extramural Institutional Certification - Before January 25 - With Consent.
- **If yes,** and consent will not be obtained, submit the Extramural Institutional Certification - Before January 25 - Without Consent.

ii. Was this protocol funded after January 25, 2015? ☐Yes ☐No

- **If yes,** submit the Extramural Institutional Certification - After January 25.

25. Additional Information

In the space below, provide any additional information that you believe may help the IRB review the proposed research, or enter "None." _____