Medical University of South Carolina
CONSENT TO BE A RESEARCH SUBJECT
Focal Electrically-Administered Seizure Therapy (FEAST):

Studies at two enrolling sites to further test and refine the treatment:

Right Unilateral Ultrabrief ECT as a Comparison to FEAST

A. **PURPOSE AND BACKGROUND:**

Your doctor has recommended that you receive treatment with electroconvulsive therapy (ECT). You have been asked to participate in a research study. The study seeks to document your clinical progress and brain changes in order to compare a new form of ECT against the current state of the art. **You will be receiving standard state of the art ECT**. The only aspect of your treatment that is research are some additional questions and tests, two MRI scans, and followup visits at 2,4 and 6 months after treatment. The new type of ECT is called Focal Electrically-Administered Seizure Therapy (FEAST). YOU WILL NOT BE GETTING FEAST but will instead be getting standard care. Your participation in this study is purely voluntary. You are being asked to participate in this study because you have a diagnosis of major depression and you have not responded to, or have been intolerant to, other depression therapies. The principal investigator is Dr. Mark George. (843 876 5142) This study is taking place at two sites – MUSC and Georgia Regents University and will involve 60 patients, about 30 of whom will come from MUSC.

You have been told that besides ECT there are other treatments for depression, which include medication, psychotherapy, transcranial magnetic stimulation (TMS) and conventional forms of ECT. These alternative treatments have their own benefits and risks. Why ECT has been recommended for your specific case has been explained to you. ECT is available at many hospitals and you do not have to participate in this research study to receive ECT.

B. **PROCEDURES:**

If you agree to be in this study, the following will happen*:*

Overall, this study simply follows your clinical progress as you receive ECT. So, the only additional time or procedures that are purely for research are some questionnaires at the beginning and weekly through your acute course, and the 2,4 and 6 month followup visits (and the MRI scans if you elect to do those). The procedures and risks below pertain to ECT in general. The only part that is research are the additional questionnaires and scans.

In general, you can stay on most of your medications that would normally be allowed with ECT. We may suggest some changes in your medications (if any) that were used to treat your psychiatric at least five days before you receive FEAST. This is part of standard ECT practice. If there are medications that you are taking that are not allowed in this research study and you need to stop taking them in order to be in the trial, we will discuss the specific risks associated with that. The procedures used in FEAST will be identical to those used in conventional ECT except that the current will flow in one (unidirectional) instead of two directions (bidirectional) and special electrodes will be used to concentrate the current to the right frontal lobe. You will receive treatments at a rate of three a week, usually for two to six weeks, depending on your doctor's clinical judgment of what would be best for you.

During this period, if your depressive condition does not respond to treatment with right unilateral ultrabrief ECT (which is the current standard), your doctor may change the treatment so that you receive an older form of traditional ECT. If the type of treatment is changed, all the testing procedures described below will be administered before the change, as well as following the ECT course.

At each treatment, you will be under the care of an anesthesiologist, a psychiatrist, and a nurse. To receive each treatment you will be brought to a specially equipped room. The treatments are given in the morning, before breakfast. Because the treatments involve general anesthesia, you will have had nothing to drink or eat for at least eight hours before each treatment. When you come to the treatment room, before beginning the treatment, in order to spare you the discomfort from many “needle sticks”, a thin plastic tube (an “IV line” or catheter) will be placed in your arm so that medications can be given to you. You will be given an anesthetic drug that will quickly put you to sleep. You will be given a second drug that will relax your muscles. Because you will be asleep, you will not experience pain or discomfort during the procedure. You will not feel the electrical current, and when you wake up you will have no memory of the treatment.

To prepare for the treatments, monitoring sensors will be placed on your head and other parts of your body. A blood pressure cuff will be placed on one of your limbs. This is done to monitor your brain waves, your heart, and your blood pressure. These recordings involve no pain or discomfort. After you are asleep, a small, carefully controlled amount of electricity will be passed between two electrodes that have been placed on your head. When the current is passed, a generalized seizure is produced in the brain. Because you will have been given a medication to relax your muscles, muscular contractions in your body that would ordinarily accompany a seizure will be markedly softened. The seizure will last for approximately one minute. Within a few minutes, the anesthetic will wear off and you will awaken. During the procedure your heart rate, blood pressure, and other functions will be monitored. You will be given oxygen to breathe. After waking up from the anesthesia, you will be brought to a recovery room, where you will be observed until it is time to leave the ECT area.

You will be closely monitored in terms of the effects of the treatments on your symptoms and thinking and memory. If the evaluation team feels that you are improving at too slow a rate, they may recommend an increase in the electrical dosage administered or they

may recommend that FEAST be stopped. Likewise, if excessive cognitive side effects are seen, Right Unilateral ECT may be stopped and a traditional form of ECT offered.

Clinical Evaluation and Neuropsychological Procedures: Before starting ECT you will participate in interviews and will be asked questions about your current psychiatric condition, any psychological problems you may have had in the past, your family's history of psychological problems, your medical history, and your attitudes about receiving ECT.

A member of your family may also be asked to participate in some interviews to provide further information about your psychological condition and that of members of your family. You will also be asked to complete questionnaires that assess your psychological state.

During your course of treatment and during the week following this course, you will participate in interviews to assess changes in your symptoms. Following the acute course (4 weeks of treatment), we will ask you to participate in clinical interviews at 2 months, 4 months and 6 months following your recovery. If travel is a major problem, some of these interviews may be conducted by telephone by a member of the clinical research staff. They will take place at two, four and 6 months after the end of the ECT acute course.

To assess the effects of treatment on your cognitive abilities (thinking and memory), you will receive a battery of neuropsychological tests during the week before starting ECT, following the sixth/seventh treatment, during the first week after treatment, and two, four, and six months following the completion of ECT. Each administration of this battery will take about an hour. The battery includes a series of tasks to assess your memory for material that you will be asked to learn, for events that occurred in your life, and for public events. On other tasks you will be asked to repeat phrases that you have heard, solve puzzles, and other similar tests of thinking.

At each treatment session, just before you receive ECT, you will be asked to remember a set of information. Following each treatment, after you wake up, you will be asked to recall or recognize this material and you will be administered an additional set of brief neuropsychological tasks.

EEG Procedures: The naturally occurring electrical activity of brain regions will be measured by recording the EEG (electroencephalogram). For the EEG examinations, your scalp will be cleaned and sensors placed on your head and near your eyes. The sensors will not pass any electricity to you, but will be used to measure the brain waves that are naturally occurring. During this examination, measurements will be taken while you lie quietly with your eyes closed and while you lie quietly with your eyes open. These procedures will be conducted prior to treatment, at two or more of your treatment sessions, during the week following treatment, and at two-month follow-up sessions.

Functional Magnetic Resonance Imaging (fMRI) Procedures: You may choose to also have two MRI scans done as part of this research, one before the ECT treatments

and then one right at the end of the acute course, about 4 weeks later on average. The time between the scans will depend on how rapidly you improve, and could be as little as one week or as long as 5 weeks apart.

☐Yes, I agree to participate in the MRI scans.

☐No, I do not wish to participate in the MRI scans.

If you do not wish to participate in the MRI scans, you can skip the following paragraphs.

You are being asked to provide a brain image that will be stored for future research. The procedure used to take the brain image is called a Magnetic Resonance Imaging (MRI) scan. It uses magnetic fields and radio waves, and it is completely non-invasive and not harmful. The scan will take pictures of the brain, which will allow investigators to measure the size and shapes of parts of your brain. You will be in the scanner for less than one hour.

If you agree to participate in this fMRI part of the study, the following will happen:

MRI Procedure:

- You will first be asked questions to find out if there are any reasons as to why you might not be able to have an MRI. We will, for example, ask you questions about whether you have any metal in your body that may interfere with the scanner. This does not include things such as dental fillings or surgical pins that are stainless steel. Some people are uncomfortable in small spaces and we will also ask you about this. Women may not be pregnant or breastfeeding. Women must agree to use an effective form of birth control such as a birth control pill, birth control patch, or condoms. Women who are of childbearing age who may be pregnant will provide a urine sample for pregnancy testing.
- If there are no reasons to prevent you from having an MRI scan and you agree to participate, your first one hour MRI scan will be scheduled. The MRI scanning will occur at the MUSC Center for Advanced Imaging Research MRI scanner located at 30 Bee Street, just across the street from the Psychiatry Building.
- The night before the scan session, we encourage you to have a normal night's sleep. Please do not drink any coffee within 2 hours before the scan.
- Before the scan session, you will meet with a representative of the study (the doctor in charge or one of the research staff) to review what will happen during the scan.
- Pictures of your brain will be collected using a Magnetic Resonance Imaging (MRI) Scanner, which involves the following:
- You will be placed on a table that will slide into the scanner.
- A large plastic cylinder with holes in it will surround your head. This is the part of the scanner which will make the pictures of your brain.
- Foam or a pillow will be placed around your head to keep your head still.

- After you are made comfortable on your back on the table, the table will slide into the MRI scanner. It is wider than your body and you can see out into the room as you are lying down.
- During the scans, you will be asked to lie still and be awake. Occasionally the MRI tech or the research assistant will talk with you and instruct you in how to perform the tasks. You will be able to see the tasks on a computer screen projected into the scanner.
- You will hear loud noises from the scanner during the imaging study. These are normal operating sounds that the scanner makes. You will be given earplugs to help soften the noise. During the imaging session you will be able to talk to the investigators and the MRI technician, and they will be able to talk to you.
- Your scan will be labeled with a numerical code that does not directly identify you in any way other than that you are a research subject in this study. The scan will contain your age and the scan date/time. Your scan will then be stored on secure computers at MUSC. Your and other participants' images will be shared with the ECT investigators and collaborators for this research study.

You may be withdrawn from this imaging study without your consent if the researchers believe it is in your best interest or if you fail to follow study procedures. For example, if there is concern that you have metal in your body we would not allow the MRI scan to proceed.

Repeat Scan – About 4-5 weeks after the first scan, we will invite you back to the MRI center to do exactly the same things as you did on the first scanning visit. We will try and coordinate this scanning session with other testing that is part of the parent study. That may not always be possible and we will then need for you to make a separate visit. Just like the first visit, the second return imaging visit should not last more than one hour.

C. **DURATION:**
Participation in the study will take about 3-5 weeks during the acute treatment phase, with followup visits at 2,4 and 6 months following the acute course. This research is done on top of your clinical care. The additional time required for the research aspect is several hours at the beginning in terms of questions, an additional hour each week for ratings, the MRI visits if you choose to participate in those, and the followup visits, each of which is about 2-3 hours. Thus the total duration and time of the research is about 24 hours over the 6 months.

D. **RISKS/DISCOMFORTS:**
Treatment Procedures: Like other medical procedures, ECT involves some risks. The primary risk of treatment with ECT is that it may not be effective.

A common side effect of ECT is decreased memory functioning. The degree of disruption of memory is likely to be related to the number and type of treatments given. A smaller number of treatments are likely to produce less memory impairment than a larger number of treatments. The memory difficulties with ECT have a characteristic pattern. Shortly following a treatment, the problems with memory are most pronounced.

As time from treatment increases, memory functioning improves. Shortly after the course of ECT, you may experience difficulties remembering events that happened before and while you received ECT. Your spottiness in memory for past events may extend back to several months before you received ECT, and in rare instances, to one, two, or more years. Many of these memories will return during the first few months following the ECT course. However, you may be left with permanent gaps in memory, particularly for events that occurred close in time to the ECT course. In addition, for a short period following ECT, you may experience difficulty in learning and remembering new events. This difficulty in forming new memories should be transient and will most likely subside within several weeks following the ECT course.

Individuals vary considerably in the extent to which they experience confusion and memory problems during and shortly following treatment with ECT. However, in part because psychiatric conditions themselves produce impairments in learning and memory, most patients report that their learning and memory functioning is improved after ECT compared to their functioning prior to the treatment course. Objective tests indicate that many aspects of thinking are improved following ECT, but that, nonetheless, there are specific problems in memory, as described above. A small minority of patients treated with ECT report severe problems in memory that remain for months or even years. The reasons for these exceptional reports of long-lasting impairment are not fully understood. However, as with any medical treatment, individuals who receive ECT differ in the extent to which they experience side effects. Rarely, ECT may result in permanent and extensive gaps in memory.

Because of the possible problems with confusion and memory, it is important that you not make important personal or business decisions during the ECT course or immediately following the course. This may mean postponing decisions regarding financial or family matters. After the treatment course, you will begin a “convalescence period,” usually one to three weeks, but which varies from patient to patient. During this period, you should refrain from driving, transacting business, or other activities for which impairment of concentration or memory may be problematic, until so advised by your doctor.

When you awaken after each ECT treatment, you may experience confusion. The confusion usually goes away within an hour. Shortly after the treatment, you may have a headache, muscle soreness, or nausea. These side effects usually respond to simple treatment, such as Tylenol® for muscle soreness or headache and Reglan® for nausea. More serious medical complications with ECT are rare, and should be very infrequent with FEAST. With modern anesthetic techniques, dislocations or bone fracture, and dental complications very rarely occur. As with any general anesthetic procedure, there is a remote possibility of death. It is estimated that fatality associated with ECT occurs approximately one per 10,000 patients treated. While also rare, the most common medical complications with ECT are irregularities in heart rate and rhythm, which can be effectively treated in nearly all cases.

To reduce the risk of medical complications, you will receive a careful medical evaluation prior to starting ECT. However, in spite of precautions there is a small chance that you

might experience a medical complication. Should this occur, medical care and treatment will be instituted immediately and facilities are available to handle emergencies.

Clinical Evaluation Procedures: There are no anticipated risks to you. You may find the interviews about your psychological condition upsetting, but no more so than the psychiatric interviews you would undergo as part of your care.

EEG Procedures: There are no anticipated risks associated with the EEG examinations.

fMRI Procedures: (The following pertains only to those also doing the fMRI study).MRI tests are non-invasive and painless. There are no known or foreseeable risks or side effects associated with conventional MRI procedures except to those people who have electrically, magnetically, or mechanically activated implants (such as cardiac pacemakers) or to those who have clips on blood vessels in their brain. There are no known additional risks associated with high-speed MRI. Both the conventional and the high speed MRI systems have been approved by the U.S. Food and Drug Administration (FDA) and will be operated within the standards reviewed and accepted by the FDA.

However, an MRI may cause you to feel claustrophobic (uncomfortable in a small space) or anxious from the banging noises made by the machine. Most subjects find the procedure easy, and often fall asleep during the scanning. We ask that you try to stay awake since if you fall asleep and suddenly wake up, you may move and this will affect the image.

Because the MRI machine acts like a large magnet, it could move iron-containing objects in the MRI room during your examination, which could in the process possibly, harm you. Precautions have been taken to prevent such an event from happening; loose metal objects, like pocket knives or key chains, are not allowed in the MRI room. If you have a piece of metal in your body, such as a fragment in your eye, aneurysm clips, ear implants, spinal nerve stimulators, or a pacemaker, you will not be allowed into the MRI room and cannot have a MRI.

Having an MRI may mean some added discomfort to you. In particular, you may be bothered by feelings of claustrophobia and by the loud banging noise during the study. Temporary hearing loss has been reported from the loud noise. You will wear earplugs during the scan to help prevent this.

This MRI scan will be used to answer research questions, not to examine your brain medically. This MRI scan is not a substitute for one a doctor would order. It may not show problems that would be picked up by a medical MRI scan. Nevertheless, a neuroradiologist (a doctor trained in reading MRI brain scans) will review all scans and if they believe that there may be a medical problem in your MRI scan, we will ask your permission to contact your primary care physician. If you do not have a primary care physician, we will assist you in finding a doctor to follow up on any finding that may not be normal.

Another risk relates to the loss of privacy as images will be shared with other scientists. Additional data included with the image are the date and time of the scan and your age at the time of the scan. We will make every effort to protect your confidentiality and make sure that your identity does not become known. All written information will be stored in a locked file cabinet, and electronic data will be encrypted. A limited number of staff members will have access to the data. However, there is a slight risk of a breach of security.

Your brain scan will be labeled with a numeric code only and will not contain your name, initials, date of birth, social security number, or any other information that could identify you directly. The image will contain the date/time of your scan and your age at the time of the scan. The scans will be securely stored at the Center for Biomedical Imaging (CBI) Archive at MUSC.

Research records will be kept confidential to the extent allowed by law. Federal Privacy Regulations provide safeguards for the privacy, security, and authorized access. Research records may be reviewed by the Institutional Review Board, the Office of Human Research Protection, and the Food and Drug Administration (FDA).

Unknown Risks: The experimental treatments may have unknown side effects. The researchers will let you know if they learn anything that might make you change your mind about participating in the study.

E. **BENEFITS:**

The potential benefit of the treatment component of this study is that it may lead to improvement in your psychiatric condition.

The neuropsychological procedures, the neurophysiology procedures, and the MRI procedures will not benefit you directly. Many people suffer from the same type of psychiatric condition and many people receive ECT. The information obtained from this study may benefit others, although there is no way to know for sure if this will be so.

F. **COSTS:**

There is no cost to participate in this research. Specifically, the MRI scans, and additional assessments are covered by the study.

ECT is a medical procedure covered by almost all insurance carriers. You or your insurance company will be billed for the routine clinic visits, and all standard laboratory tests (e.g. routine blood counts and blood chemistry tests) and ECT treatments. You will not be billed for tests required for purposes of research (e.g. MRI exams).

G. **PAYMENT TO PARTICIPANTS:**

When you participate in the two-, four-, and six-month follow-up procedures, you will be paid $20.00 for each hour of time that you contribute. For each MRI scan you will be paid $50.00. If you discontinue your participation you will be paid for the amount of time you have contributed to that point. Payments will be made in cash at the visit. If you

complete these follow-up assessments, which typically involve up to 3 hours, the total compensation would be $180. With two MRI scans at $50 each, the total possible would be $280.

Payments that you receive from MUSC for participating in a research study are considered taxable income per IRS regulations. Payment types may include, but are not limited to: checks, cash, gift certificates/cards, personal property, and other items of value. If the total amount of payment you receive from MUSC reaches or exceeds $600.00 in a calendar year, you will be issued a Form 1099.

H. **ALTERNATIVES:**

If you choose not to participate in this study, you could receive other treatments for your condition. The standard therapies for your condition are talking therapy, medications, transcranial magnetic stimulation, or conventional ECT. You and your doctor have discussed why ECT is likely the next best treatment for you and your depression. If you elect not to participate in this ECT study, you may still receive standard clinical care and standard ECT.

I. **NEW INFORMATION**: If there are significant new findings during the course of the study, you will be notified.

J. **RELEASE OF MEDICAL RECORDS TO ANYONE OTHER THAN THE INVESTIGATORS:** You will be asked to sign a separate release for the release of your medical records.

K. **STUDENT PARAGRAPH:** Your participation or discontinuance will not constitute an element of your academic performance nor will it be a part of your academic record at this Institution.

L. **EMPLOYEE PARTICIPATION**: Your participation or discontinuance will not constitute an element of your job performance or evaluation nor will it be a part of your personnel record at this Institution.

M. **CLINICAL TRIAL REGISTRY DATABANK:** A description of this clinical trial will be available on http://www.ClinicalTrials.gov, as required by U.S. Law. This web site will not include information that can identify you. At most, the web site will include a summary of the results. You can search this web site at any time.

Results of this research will be used for the purposes described in this study. This information may be published, but you will not be identified. Information that is obtained concerning this research that can be identified with you will remain confidential to the extent possible within State and Federal law. The sponsor and the Food and Drug Administration (FDA) will receive copies of the research records. The investigators associated with this study, employees of the sponsor, the FDA, and the MUSC Institutional Review Board for Human Research will have access to identifying information. All records in South Carolina are subject to subpoena by a court of law.

In the event of a study related injury, you should immediately go to the emergency room of the Medical University Hospital, or in case of an emergency go to the nearest hospital,

and tell the physician on call that your are in a research study. They will call your study doctor who will make arrangements for your treatment. If the study sponsor does not pay for your treatment, the Medical University Hospital and the physicians who render treatment to you will bill your insurance company. If your insurance company denies coverage or insurance is not available, you will be responsible for payment for all services rendered to you.

Your participation in this study is voluntary. You may refuse to take part in or stop taking part in this study at any time. You should call the investigator in charge of this study if you decide to do this. The data collected on you to this point remains part of the study database and may not be removed. Your decision not to take part in the study will not affect your current or future medical care or any benefits to which you are entitled.

The investigators and/or the sponsor may stop your participation in this study at any time if they decide it is in your best interest. They may also do this if you do not follow the investigator's instructions.

Volunteers Statement

I have been given a chance to ask questions about this research study. These questions have been answered to my satisfaction. If I have any more questions about my participation in this study or study related injury, I may contact _____. I may contact the Medical University of SC Hospital Medical Director (843) 792-9537 concerning medical treatment.

If I have any questions, problems, or concerns, desire further information or wish to offer input, I may contact the Medical University of SC Institutional Review Board for Human Research IRB Manager or the Office of Research Integrity Director at (843) 792-4148. This includes any questions about my rights as a research subject in this study.

I agree to participate in this study. I have been given a copy of this form for my own records.

If you wish to participate, you should sign below.

Signature of Person Obtaining Consent	Date	Signature of Participant	Date