Study Title: Assessment of Biochemical Pathways and Biomarker Discovery in Autism Spectrum Disorder

This is a research study. The study doctor Elliott H. Sherr, M.D., Ph.D. from the Department of Neurology and/or a research coordinator will explain this study to you.

Research studies include only people who choose to take part. Please take your time to make your decision about participating in this study, and discuss your decision with your family or friends if you wish. If you have any questions, you may ask the researchers.

You are being asked to take part in this study because:

1. Your child has been given a diagnosis of Autism Spectrum Disorder (ASD), a similar disorder characterized by social and/or behavioral deficits, or is suspected of developmental delay.

AND/OR

2. Your child has a particular chromosomal change. A chromosomal change is a specific change inside the DNA of a person that may affect their development and/or health.

Why is this study being done?

Dr. Sherr and his colleagues at UCSF conduct clinical research seeking to advance the understanding of autism spectrum disorders (ASD) as well as other developmental disorders. With these investigations, we are trying to understand how biochemical pathways may affect thinking, behavior and overall development.

How many people will take part in this study?

Approximately 100 people with ASD or other developmental disorder or chromosomal change will take part. Additionally, 200 parents and 50 siblings will take also enroll and take part.

What will happen if I take part in this research study?

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

1. The researchers will gather information about you from a brief telephone interview or online questionnaire.
2. You will visit UCSF’s Pediatric Clinical Research Center (PCRC) or the UCSF Neurosciences Clinical Research Unit (NCRU) at Mission Bay and you will give a blood sample. The blood will be drawn by putting a needle into a vein in your arm. One to two tubes of blood (10-20mL, approximately one to two tablespoons) will be taken. This will take about five minutes. If you are not able to visit UCSF to donate the
blood sample, we will provide you with a kit that you can take to your local clinical lab or doctor’s office. The kit will contain tubes, instructions, and shipping supplies, and a prepaid return shipping label.

3. You may be asked if you would like numbing cream (LMK) to reduce the discomfort associated with the blood draw. The research coordinator will administer the cream 20-30 minutes before the blood draw.

4. You and/or your child may be asked to provide an additional blood sample for further analysis at a later study visit. Approximately 10-20 mL of blood will be collected during each visit for up to two additional visits. The additional samples will not be obtained in the same visit as the first blood donation but would occur at least two weeks apart for each draw. The volume of blood that will be drawn in this study will not exceed 50 mL over an 8 week period. Giving an additional sample of blood is entirely optional.

5. Your height, weight, and head size will be measured. Vitals will also be taken.

6. You may be asked to complete a series of questionnaires and/or a telephone interview regarding your social, verbal, and behavioral traits. This is expected to take 1 hour.

**How long will I be in the study?**

The research activities outlined above will require up to three hours of your time.

**Can I stop being in the study?**

If you first agree to participate and then change your mind, you are free to withdraw from the study and discontinue your participation at any time. If you choose to tell the researchers why you are leaving the study, your reasons for leaving may be kept as part of the study record. Your decision will not affect your ability to receive medical care and you will not lose any benefits to which you would otherwise be entitled. Also, the investigators or other member of the research team may stop you from taking part in this study at any time if he or she believes it is in your best interest, if you do not follow the study rules, or if the study is stopped.

**What risks can I expect from being in the study?**

Drawing blood may cause temporary discomfort from the needle stick. Other risks associated with having blood drawn are slight but may include fainting or feeling light-headed, bruising, and infection. There is also a small risk that you might feel distressed or nervous about having blood drawn (venipuncture).

You might feel worried about the possibility of your personal information and/or participation in this study not being kept confidential. The risk of unwanted sharing of health information will be minimized by ensuring that all study records that identify you will be kept completely confidential. A unique study subject number will be used on sample tubes as well as databases containing your follow-up testing and questionnaire information. Only select members of the primary research team will have access to the original data. The information you provide will be stored in a locked file cabinet.

Parent Participant
Genetic information (also known as genotype data) and the medical record data (also known as phenotype data) may be shared broadly in a coded form for future genetic research or analysis. We may give certain medical information about you (for example, diagnosis, blood pressure, age if less than 85) to other scientists or companies not at UCSF, including to a controlled access government health research database, but we will not give them your name, address, phone number, or any other identifiable information. Research results from these studies will not be returned to you.

Donating data may involve a loss of privacy, but information about you will be handled as confidentially as possible. Study data will be physically and electronically secured. As with any use of electronic means to store data, there is a risk of breach of data security. Genetic information that results from this study does not have medical or treatment importance at this time. However, there is a risk that information about taking part in a genetic study may influence insurance companies and/or employers regarding your health. Taking part in a genetic study may also have a negative impact or unintended consequences on family or other relationships. It is possible that future research could one day help people of the same race, ethnicity, or sex as you. However, it is also possible through these kinds of studies that genetic traits might come to be associated with your group. In some cases, this could reinforce harmful stereotypes.

There will be no direct benefit to you from allowing your data to be kept and used for future research. However, we hope we will learn something that will contribute to the advancement of science and understanding of health and disease. If the data or any new products, tests or discoveries that result from this research have potential commercial value, you will not share in any financial benefits. If you decide later that you do not want your information to be used for future research, you can notify the investigator in writing at (415)502-8039, and any remaining data will be destroyed. However, we cannot retract any data has been shared with other researchers.

There may be risks that are unforeseen and no one knows about yet. The researchers will let you know if they learn anything that might make you change your mind about your participation in the study.

For more information about risks, ask one of the investigators or research coordinators.

**Are there benefits to taking part in the study?**

There will be no direct benefit to you from participating in this study. However, the information that you provide may help health professionals better understand social deficits observed in autism spectrum disorders and/or other neurologic, psychiatric, or behavioral disorders and may support the development of novel therapeutic strategies.

**What other choices do I have if I do not take part in this study?**

Parent Participant
You are free to choose not to participate in the study. If you decide not to take part in this study, there will be no penalty to you. You will not lose any of your regular benefits, and you can still get care from our institution the way you usually do.

Will my information be kept private?

We will do our best to protect the information we collect from you and your medical record. Information which identifies you will be kept secure and restricted. However, your personal information may be given out if required by law. If information from this study is published or presented at scientific meetings, your name and other identifiers will not be used. Information which identifies you will be destroyed when this research is complete. The following organizations may look at information about you or in your medical and research record:

- UCSF’s Committee on Human Research
- Government agencies involved in keeping research safe for people, such as the Food and Drug Administration (FDA).

Sensitive research information: Participation in research may involve a loss of privacy, but information about you will be handled as confidentially as possible. There is a risk that information about taking part in a study about ASD may influence insurance companies and/or employers regarding your health. However, no information obtained in this study will be placed in your medical records nor will it be provided to any insurance entity or place of employment, except in the situation described as follows: your participation in this study may be noted in your medical record at UCSF. If you do not already have a medical record at UCSF, one will be created for you if you complete some or all of the research activities associated with this study at UCSF’s medical center. Your consent forms and documentation of the blood draw procedure may be included in this record. Therefore, other doctors at UCSF may become aware of your participation. However, hospital regulations require that all health care providers treat information in medical records confidentially.

What are the costs of taking part in this study?

There will be no cost to you for any of the study procedures. In the event that you have your blood drawn outside of UCSF for the purposes of this research study, we will reimburse you up to $30.00 to cover the costs of the blood draw at an offsite facility. In addition to reimbursing up to $30.00 for costs of the blood draw outside UCSF, we will also reimburse you for the cost of parking during your visit(s) to UCSF for the cognitive and behavioral assessments.

Will I be paid for taking part in this study?

In addition to the study reimbursements outlined above, you will receive compensation in cash or check upon completion of all of the study activities described under the section, “What will happen if I take part in this research study?”

You will receive $20 for each blood draw and height, weight, and head size measurements.
You will receive $30 for the completion of all surveys, questionnaires, and psychological assessments.

In the event that you are reconsenting for the purpose of providing data linkage to this study, and the study components listed above have already been completed, there will be no additional study compensation provided.

If completion of the study components listed above is satisfied by data linkage, no study visit is required to collect that data or sample and no study compensation will be provided for that study component.

**What happens if I am injured because of taking part in this study?**

It is important that you tell Dr. Sherr if you feel that you have been injured because of taking part in this study. You can tell the doctor in person or call (415) 502-8039.

**Treatment and Compensation for Injury:** If you are injured as a result of being in this study, treatment will be available. The costs of the treatment may be covered by the University of California, depending on a number of factors. The University does not normally provide any other form of compensation for injury. For further information about this, you may call the office of the Committee on Human Research at 415-476-1814.

**What are my rights if I take part in this study?**

Taking part in this study is your choice. You may choose to take part or not to take part in the study. If you decide to take part in this study, you are free to leave the study at any time. No matter what decision you make, there will be no penalty to you and you will not lose any of your regular benefits. Leaving the study will not affect your medical care. You can still get medical care from our institution. We will tell you about new information or changes in the study that may affect your willingness to continue in the study. In the case of injury resulting from this study, you will not lose any of your legal rights to seek payment by signing this form.

**Who can answer my questions about the study?**

You can talk to the researchers about any questions, concerns, or complaints you have about this study by calling the research staff or Dr. Sherr at (415) 502-8039.

If you wish to ask questions about the study or your rights as a research participant to someone other than the researchers or if you wish to voice any problems or concerns you may have about the study, please call the Office of the Committee on Human Research at 415-476-1814.

Parent Participant
About Using Tissue for Research

As part of your participation in this research, a tissue sample (blood) will be collected. We would like to keep some of the tissue that is leftover for future research. If you agree, the tissue specimen(s) will be kept in storage in what is called a “tissue bank.” Dr. Sherr’s tissue bank at UCSF will house tissue specimens collected for the purposes of this research study.

Parent Participant
We do not know for sure if your tissue specimen(s) or information will be used, but they might be used in research about neurological, psychiatric and behavioral disorders. Your specimen(s) and any information about you will be kept until it is used up or destroyed. If you decide later that you do not want your tissue specimen(s) and information to be used for future research, you can notify the investigator and/or a member of the research team by calling (415) 502-8039 and/or in writing, and any remaining identifiable tissue specimen(s) and information will be destroyed if they are no longer needed for your care. All written requests should be directed to Elliott Sherr, M.D., Ph.D. at 675 Nelson Rising Lane, Box 3206, San Francisco, CA 94158. However, if any research has already been done using portions of your tissue specimen(s), the data will be kept and analyzed as part of those research studies. Reports about research done with your tissue will not be given to you or your doctor. These reports will not be put in your health record. The research will not have an effect on your care.

Things to Think About

- The choice to let us keep the leftover tissue specimen(s) for future research is up to you. No matter what you decide to do, it will not affect your care.
- If you decide now that your tissue specimen(s) can be kept for research, you can change your mind at any time. Just contact us and let us know that you do not want us to use your tissue. Then any tissue that remains will no longer be used for research.
- Sometimes tissue specimens are used for genetic research (about diseases that are passed on in families). Even if we use your tissue for genetic research, we will not put the results in your medical record.
- We may give your tissue specimen(s) and certain medical information about you (for example, diagnosis, age, developmental history, etc.) to other scientists or companies not at UCSF, including a government health research database, but we will not give them your name, address, phone number, or any other information that would identify you. Reports about any research will not be given to you or your doctor.
- You will not be charged for donating your tissue specimen(s). If any new products, tests or discoveries that result from this research have potential commercial value, you will not share in any financial benefits.
- Your personal health information cannot and will not be used for additional research without additional approval from either you or a review committee.

- There is a risk that someone could trace your information and sample back to you. Even without your name or other identifiers, your genetic information is unique to you. The researchers believe the chance that someone will identify you is very small, but the risk may change in the future as people come up with new ways of tracing information.
- In some cases, this information could be used to make it harder for you to get or keep a job or insurance. There are laws against the misuse of genetic information, but they may not give full protection. There can also be a risk in knowing genetic information. New health information about inherited traits that might affect you or your blood
relatives could be found during a study. The researchers believe the chance these things will happen is very small, but cannot promise that they will not occur.

Benefits

There is no direct benefit to you for donating your tissue specimen(s) and agreeing to have your tissue specimen(s) stored and potentially used for research. However, the benefits of research using tissue include learning more about what causes neurological, psychiatric and behavioral disorders and other diseases, how to prevent them, and how to treat them.

The greatest risk to you is the release of information from your health records. We will do our best to make sure that your personal information will be kept private. The chance that this information will be given to someone else is very small.

Making Your Choice

Please read each sentence below and think about your choice. After reading each sentence, please initial either the "Yes" or "No" box. If you have any questions, please talk to your doctor or nurse, or call our research review board at 415-476-1814. No matter what you decide to do, it will not affect your child’s care.

1. My tissue may be kept for use in research to learn about, prevent, or treat neurological, psychiatric and/or behavioral disorders.

2. My tissue may be kept for use in research to learn about, prevent or treat other health problems (for example: diabetes, Alzheimer's disease, or heart disease).

3. Someone may contact me in the future to ask me about whether or not I’m interested in taking part in more research.

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OPTIONAL: Affiliated Study Data and Sample Linkage

If you have participated in other studies affiliated with the leading investigator of this study (Dr. Elliott Sherr) OR with the sponsor of the study (e.g. the Simons Foundation, Simons Simplex Collection etc.), there may be opportunities to use previously collected information or biological samples from these prior studies to contribute to this current project. We are also asking for your consent to share the data we collect during this study here at the University of Parent Participant
California, San Francisco with the Simons Foundation and the SSC@IAN in order to add to the information that was collected during your participation in the SSC. Please note your decision to indicate your participation in other studies is **OPTIONAL** and **VOLUNTARY**. After reading each sentence, please initial either the "Yes" or "No" box.

**YES** | **NO**
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I have participated in other studies affiliated with the leading investigator of this study (Dr. Elliott Sherr) OR with the sponsor of the study (Simons Foundation, Simons Simplex Collection).

Name of Study: ____________________________

**YES** | **NO**
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I allow the research team to **obtain** and use my information/biological samples, previously collected from other studies affiliated with the leading investigator of this study (Dr. Elliott Sherr) OR with the sponsor of the study (Simons Foundation, Simons Simplex Collection).

**YES** | **NO**
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I allow the research team to **share** information obtained about me during this study to be made available to the Simons Foundation. Data that will be shared may include, identifying information, demographic information, survey measures, medical history, body measurements, and data derived from the collected blood sample.

Please note that it is not required for your participation to indicate whether or not you participated in another study.
CONSENT

You have been given copies of this consent form and the Experimental Subject's Bill of Rights to keep. You will be asked to sign a separate form authorizing access, use, creation, or disclosure of health information about you.

PARTICIPATION IN RESEARCH IS VOLUNTARY. You have the right to decline to participate or to withdraw at any point in this study without penalty or loss of benefits to which you are otherwise entitled.

1. Participant Signature

I agree to participate by signing below.

Date ___________________ Participant’s Signature ___________________ Print Name ___________________

2. Study Staff Signature

Date ___________________ Signature of Person Obtaining Consent ___________________ Print Name of Person Obtaining Consent ___________________