

PARTICIPANT CONSENT FORM

Instrumented On-Road Study of Motorcycle Riders

SPONSORS: National Highway Traffic Safety Administration

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WHAT IS THE PURPOSE OF THIS RESEARCH?

This project is designed to reveal methods for reducing motorcyclist fatalities and injuries, through the collection and analysis of riding data collected during real-world riding. The work proposed here will provide 160 riders with systems to record their good and bad experiences in detail, as they ride their own bikes over the course of a year. These data will be reduced and analyzed to develop guidance on topics including: conditions that are present when riders have trouble, actions of other vehicles, evasive maneuvers that are possible, safe rider behaviors, unsafe rider behaviors, the sequence of events that end in a crash or near-crash, and potential countermeasures.

WHAT SHOULD I KNOW BEFORE DECIDING TO PARTICIPATE?

1. You are providing permission for us to collect data (including video) whenever your motorcycle is used. If during the course of your participation unusual circumstances arise where someone else uses your motorcycle, we will delete their data from trips in which they are identified riding your motorcycle. However, as we are primarily interested in your riding, we want you to be the primary rider of your motorcycle for the duration of the study. If you expect that others may ride your motorcycle more than a few times in the coming year, please do not participate.
2. There will be video of your face and portions of your body and the roadway. Audio will not be recorded. The video and other data that personally identifies you, or could be used to personally identify you, will be held under a high level of security at one or more data repositories. Your data will be identified with a code rather than your name. Finally, only qualified researchers will be authorized to have access to data that personally identifies you, or can be used to personally identify you, and the level to which they have access will be based on their level of authorization.
3. No identifying information will be collected on passengers.
4. For the duration of the project you will be responsible for your insurance coverage. If you are in a crash, please contact emergency services as you normally would. We will then ask for more information, as detailed below.

5. You may withdraw from the study at any time. If you do withdraw from the study before your scheduled end date, you must agree to allow us to retrieve the data collection system from your motorcycle as soon as is feasible.

WHAT DO I HAVE TO DO IF I CHOOSE TO PARTICIPATE?

The study involves a one-year data collection effort in which a data collection system containing sensors and cameras will be installed on your motorcycle to record a variety of riding measures. As a participant, you will complete the following activities:

1. Have your motorcycle equipped (see the section below: “What will I have to do to get my vehicle equipped for the study?”).
2. Ride as you normally would.
3. Be the primary rider of your motorcycle. While we realize that it may be necessary on occasion to allow others to ride your motorcycle, we ask that this be kept to a minimum.
4. Make an appointment for us to collect the driving data from your vehicle in about 8 months. This appointment could take up to one hour and will be scheduled to take place at a location that is convenient for you such as your home, work, school, or at a local shopping mall. You will not need to do anything at these appointments apart from providing access to the motorcycle; a trained technician will handle everything else.
5. While you are in the study, we ask that you not ride your motorcycle into any areas where cameras are not allowed, including any international border crossings, military bases, or similar facilities.
6. Advise other riders of the video equipment installed in your vehicle and ask them not to ride into areas where cameras are not allowed. Let these other riders know that data will be collected when they ride but will not be retained or analyzed.

WHAT WILL I HAVE TO DO TO GET MY MOTORCYCLE EQUIPPED FOR THE STUDY?

1. Bring your motorcycle to an install facility in your area at the scheduled day and time to have the data collection system installed. The time for an install will vary with the motorcycle between approximately 1 hour and 6 hours. You will be provided with an estimate of the time for your motorcycle before you are scheduled to bring in your motorcycle. The system will require a connection to the vehicle power, turn signals, and brake lamp. These connections will provide additional data as well as power for the system; by agreeing to participate, you are providing us permission to get information from your motorcycle as well as to install new sensors. Before we begin installation, we will show you where we will

place the system and also show you pictures of what the completed installation will look like. The main unit of the system weighs approximately 7 lbs. It will be mounted to provide full clearance during any maneuvers. Presence of the equipment will be equivalent to carrying a laptop computer in a small saddlebag. Your motorcycle will be returned to its original state when your participation ends.

2. While the system is being installed on your motorcycle, you will be provided a comfortable area in which to complete the consent process and testing, which should take about 1 - 2 hours. Specifically, you will be asked to:
 - a. Provide us with proof of a valid U.S. motorcycle rider's license, proof of vehicle insurance, and proof of ownership (vehicle registration showing you as an owner or co-owner of the motorcycle).
 - b. Review and sign this informed consent form.
 - c. Undergo a standard vision test.
 - d. Fill out questionnaires. The questionnaires vary in length and take between 5 and 15 minutes each to complete. They contain questions about: your health history and health status; driving behavior, history and knowledge. You will be asked to fill out one or more final questionnaires after completing your participation in the study.
3. Allow our technicians to start your motorcycle as needed during the installation and testing process.
4. When your motorcycle is ready, we will show you the data collection system and provide you with information about who to contact if you have any problems with your motorcycle that could be related to the data collection system, or if you notice any maintenance issues with the system (for example, a camera or device that comes loose).

WHAT DO I DO AFTER MY MOTORCYCLE IS EQUIPPED FOR THE STUDY?

1. Once you have completed all of the questionnaires, you will receive your first payment of \$100 via direct deposit or check.
2. Ride as you normally would for one year.
3. If you are in a crash while in the study, including dropping your bike while stationary, we ask that you do four things (in the following order):
 - a. Seek emergency help the way that you normally would.
 - b. Call us at (800) xxx-xxxx to notify us as soon as it is safe to do so.

- c. Allow a member of the research team to interview you about the crash if we decide that your crash should be investigated in more detail. This interview would ideally take place soon after the crash, but only when you are comfortable and able to do so.
 - d. Allow us to have access to the police accident report, if any, which results from the crash.
4. We will make an appointment with you to collect the driving data from your motorcycle in approximately 8 months. We expect that we will just need to make one appointment while you are in the study, though it is possible that additional appointments may be necessary. These appointments will typically take about 15 minutes, but could take up to one hour depending on what needs to be done. They will be scheduled to take place at a location that is convenient for you such as your home, work, school, or at a local shopping mall. You will not need to be with the motorcycle when the data are collected, but you will need to provide us with access to the motorcycle. As mentioned above, we also will collect data from the motorcycle after a crash, either at a place of your choosing or where the motorcycle was taken after the crash.
 5. While you are in the study, do not ride your motorcycle into any areas where cameras are not allowed, including any international border crossings.

WHAT HAPPENS WHEN THE STUDY IS OVER?

1. After one year, you will be asked to return to the install facility so that we may remove the system from your motorcycle. While your motorcycle is being worked on, we will ask you to fill out some final questionnaires. This process is expected to take about two hours. After this session is complete, you will receive your final payment of \$100 via direct deposit or check.
2. When you leave the study, we may ask you whether we can keep your contact information to contact you for participation in future follow-on studies. This will be optional, and if you do not agree, we will delete your contact information one year after data collection is complete at VTTI.
3. As we collect the data, we will begin data analysis and reporting. It is likely that you will see references to the results of the study in the news or elsewhere. However, these reports will not identify participants by name, nor will personally identifying video be shown.

WHAT ARE THE RISKS OF PARTICIPATING IN THIS STUDY?

The operation of the motorcycle with the equipment will be similar to riding with a small laptop or something similar in a saddle bag, and thus carries a similar risk as when you operate the motorcycle normally. However, if you violate state or local driving laws (such as riding under the influence or exceeding posted speed limits), the instrumentation could record evidence of these violations. This has the potential to pose greater than minimal risk of legal harm. A variety of strategies and procedures have been developed to reduce the potential for legal or economic harms. These strategies include encrypting the data obtained by sensors and cameras,

using a code number to identify you with the code key maintained in a secure location, and obtaining a Certificate of Confidentiality. More details on these strategies are provided below.

All data collection equipment is mounted such that, to the greatest extent possible, it does not pose a hazard or problem for you when you ride. None of the data collection equipment should get in the way of your normal field of view. Placing the data collection system on your motorcycle will have a minimal effect on handling characteristics, similar to a laptop in your saddlebag, as described above. You are not being asked to change the way you ride, when you ride, or where you ride, except for your visits to the install facility at the beginning and end of the study.

There are non-riding risks resulting from participation. Five cameras will be placed on your motorcycle. If you ride into an area where cameras are not allowed, including international border crossings, certain military and intelligence locations, and certain manufacturing plants, there is a risk that you may be detained or arrested or that your motorcycle may be impounded. For this reason, by signing this Informed Consent and thereby agreeing to participate in the study, you also are agreeing not to drive into any such areas while you are in this study. We have provided a card which can be used to explain your motorcycle's role in the study while still maintaining your privacy and keeping confidential your role in the study.

Throughout the study, we will take all possible steps to protect your privacy and keep confidential your role in the study and the confidentiality of your personally identifying information. To help us protect your privacy, we have obtained a Certificate of Confidentiality from the U.S. Department of Health and Human Services National Institutes of Health. With this Certificate, the researchers and study sponsors cannot be forced to disclose information that may identify you, even by a court subpoena, in any federal, state, or local civil, criminal, administrative, legislative, or other proceedings. However, the Certificate of Confidentiality does not prevent the researchers from disclosing voluntarily matters such as child abuse, or a participant's threatened or actual harm to self or others. In terms of a vehicle, this could also include items such as driving under the influence of drugs or alcohol, allowing an unlicensed minor to drive the motorcycle, or habitually running red lights at high speed. Such behaviors may result in your removal from the study and reporting of the behavior to the appropriate authorities. In the event of a crash, it may not be possible to prevent the equipment and the data from falling into the hands of the police or an insurance company; if this happens, however, the data are still encrypted and inaccessible and unreadable to these individuals.

However, you, too, are responsible for taking steps to protect your privacy and for keeping confidential your role in this study. Do not post this information on public websites or tell people about your participation. Treat this information the same way that you protect other personal, sensitive information such as your bank account numbers or computer passwords. If you do not keep confidential your role in the study, there is a risk that some of the data collected during the study, including your personally identifying information, may be used against you in a court case or other legal proceeding.

The risk to you of completing the questionnaires and vision tests while the data collection equipment is being installed in your vehicle is no more than when you are doing activities in your daily life like filling in forms.

WHAT ARE THE BENEFITS OF PARTICIPATING IN THIS STUDY?

While there are no direct benefits to you from this research, you may find this study interesting. No promise or guarantee of benefits is being made to encourage your participation. Participation may help us measure and improve human, roadway, or vehicle related factors that affect the safety of motorcyclists.

HOW WILL MY DATA BE KEPT CONFIDENTIAL AND SECURE AND WHO WILL HAVE ACCESS TO MY DATA?

Any data collected during this study that personally identifies you or that could be used to personally identify you will be treated with confidentiality. As soon as you begin participating in this study, your name and other identifying information will be separated from the raw data collected while you ride your motorcycle and replaced with a number. That is, your raw data will not be attached to your name, but rather to a number (for example, Rider 0011). The raw data collected while you ride your motorcycle will be encrypted (made unreadable) from the moment it is collected until it is transferred to one or more secure central storage locations. Your name also will be separated from any data about you, either provided by you in response to questionnaires or gathered by researchers during the study, including crash investigation data, and will be replaced by the same driver number (for example, Rider 0011).

Several types of information and data about you and your motorcycle will be collected during the study:

1. **Contact information** includes your name, address, email address, phone numbers, and similar information used to contact you when needed. It will be stored securely in electronic form during the course of the study and destroyed after the study is complete (unless you grant permission for us to keep your contact information when the study is over). This information will not be linked to or mingled with your study data, and will not be used in any research or analysis.
2. **Auxiliary study information** includes your Social Security Number, license plate number, bank account information (for those using direct deposit) and similar information. This information is used to verify your identity and to make payments for your participation. This information will be stored at VTTI in electronic form (securely encrypted) and destroyed after the study is complete. This information will not be linked to or mingled with your study data, and will not be used in any research or analysis.
3. **Rider data** includes your answers to questionnaires and vision test results. This data will not contain your name or any identifying information and will be used in analyses, both on its own and in combination with the riding data, motorcycle data, and additional crash data. This data will be stored securely in electronic form throughout the lifetime of the data (defined below).

4. **Motorcycle data** includes your motorcycle make and model, its condition, and how it is equipped. This data will not contain your name or any identifying information and will be used in analyses, both on its own and in combination with the rider data, riding data, and additional crash data. This data will be stored securely in electronic form throughout the lifetime of the data (defined below).
5. **Riding data** includes the data we collect from your motorcycle while you are riding, including video data and sensor data. This information will contain video of your face and GPS coordinates of your trips, both of which could be used to personally identify you. These data will be encrypted (stored in an unreadable format) from the moment of their creation until they are downloaded from your vehicle, transferred to a secure data storage facility, and verified. From this point on they will be decrypted (made readable) on an as-needed basis for each analysis. These data will be used for analysis, both on their own and in combination with the driver data, the vehicle data, and the additional crash data. This data will be stored securely in electronic form throughout the lifetime of the data (defined below).
6. **Additional crash data** includes items we may collect after a crash, including answers to an interview with one of our researchers and the police accident report resulting from the crash. This data will not contain your name or any identifying information and will be used in analyses, both on its own and in combination with the rider data, motorcycle data, and riding data. This data will be stored securely in electronic form throughout the lifetime of the data (defined below).

It is possible that an authorized Institutional Review Board (IRB) may view this study's collected data for auditing purposes. An IRB is responsible for the oversight of the protection of human subjects involved in research.

It is also possible that the study sponsors or investigators may view this study's rider data and riding data for quality control or administrative purposes; in this case, the study sponsors or investigators will be required to maintain the security and confidentiality of any data that personally identifies study participants or that could be used to personally identify study participants.

While riding the motorcycle, a camera will videotape your face with some added space around the head to handle any head movements. An example is shown below. Also, video cameras will capture views of your torso and head, the forward view, and the left and right sides of the motorcycle, and to the rear. All video will be captured and stored in digital format (no tape copies will exist).



If you choose to wear a helmet that exposes your face, or if you choose not to wear a helmet (where legal), your face will be visible in the video, similar to the picture below:



During the data collection phase of this study, all data collected from your motorcycle will be encrypted (made unreadable) from the time of its creation and then stored in a specific password-protected project folder on a secure server; the riding data will only be decrypted (made readable) once it has been stored in this folder. At the conclusion of the collection phase of this study, the rider data, riding data, and additional crash data will be permanently housed at Virginia Tech under the supervision of the Virginia Tech Transportation Institute, the organization overseeing the data collection for the entire study.

Authorized VTTI and NHTSA research personnel, and other researchers authorized by NHTSA will have access to study data that personally identifies you or that could be used to personally identify you. Other researchers may be given access to your rider data, motorcycle data, riding data, and additional crash data, solely for authorized research purposes. Your data will only be maintained in computers that are password-protected. Any future use of your data will require that the research is approved by an Institutional Review Board. In addition, future uses of your data by researchers outside VTTI and NHTSA will require data sharing agreements that adhere to or exceed our commitment to protecting your confidentiality for this project.

VTTI, NHTSA, and other approved researchers may show specific clips of video at research conferences. VTTI or NHTSA also may show specific clips of video to the media, driver's education teachers and students, and others in others involved in efforts to improve highway and road safety. The face portion of the video will be blurred, blacked out, or replaced with an animation for these purposes. Your name and other personally identifying information will never be associated with these video clips. Identifying information will not be shown in association with these video clips. No audio will be replayed at these events, since no audio is being collected as part of this study.

It is expected that the data we capture throughout the course of the entire study, including that from all the approximately 160 participants, will be a valuable source of data on how riders and drivers respond to certain situations and how the roadway and vehicles might be enhanced to improve rider safety. Researchers who study traffic congestion and traffic patterns may also find the data useful. Therefore, it is expected that there will be follow-on data analyses using all or part of the data for years into the future. In consenting to this study, you are consenting to future research uses of the information and videos we gather from you.

If you are involved in a crash while participating in this study, the data collection equipment in your vehicle will likely capture the events leading up to the event. You are under NO LEGAL OBLIGATION to voluntarily mention the data collection equipment or your participation in this study at the time of a crash or traffic offense. We have provided a card which you should keep with you for these cases. The card describes your vehicle's role in the study without identifying you as a participant in the study.

Because the vehicle camera system is storing continuous video, it may capture some incriminating evidence if an at-fault collision should occur. To help us protect your privacy, we have obtained a Certificate of Confidentiality from the U.S. Department of Health and Human Services National Institutes of Health. With this Certificate, neither the researchers nor study sponsors can be forced to disclose information that may identify you, even by a court subpoena, in any federal, state, or local civil, criminal, administrative, legislative, or other proceedings. Identifying information for the purposes of this study includes your contact information, your auxiliary study information, your driving data (including video of your face and GPS coordinates which may identify your home, work, or school locations), or any information in your rider data, motorcycle data, or additional crash data that could be used to personally identify you. While your confidentiality is protected in most cases by the Certificate, you should know that in some rare instances involving alleged improper conduct by you or others, you may be prevented by a court from raising certain claims or defenses unless you agree to waive the confidentiality

protection. The researchers and study sponsors will use the Certificate to resist any demands for information that would identify you, except as explained below.

The Certificate cannot be used to resist a demand for information from personnel of the United States Government that is used for auditing or evaluation of federally funded projects or for information that must be disclosed in order to meet the requirements of the federal Food and Drug Administration (FDA).

This Certificate of Confidentiality does not mean that the Federal government endorses this study. You should understand that a Certificate of Confidentiality does not prevent you or a member of your family from voluntarily releasing information about yourself or your involvement in this research. If an insurer, employer, or other person obtains your written consent to receive research information, then the researchers may not use the Certificate to withhold that information.

The Certificate of Confidentiality also does not prevent the researchers from disclosing voluntarily matters such as child abuse, or subject's threatened or actual harm to self or others. This could also include behaviors such as habitually driving under the influence of drugs or alcohol, allowing an unlicensed minor to drive the motorcycle, or habitually running red lights at high speed. If this type of behavior is observed, we reserve the right to remove you from the study and inform the appropriate authorities of what we have observed. In most cases, we will notify you first of the behaviors we have observed prior to removing you from the study or informing others of our observations. If you are removed from the study, your compensation will be prorated based on the time you have already spent as a participant in the study.

The protections of the Certificate of Confidentiality described herein may not apply to passengers or riders of your motorcycle.

To summarize, your level of confidentiality in this study is as follows:

1. There will be video of your face and portions of your body. The study also will collect health and driving data about you. The video and other data that personally identifies you, or could be used to personally identify you, will be held under a high level of security at the VTTI data storage facilities. Your data will be identified with a code rather than your name.
2. All data collected from identified riders who have not signed a consent form will be deleted. No identifying information will be collected on passengers.
3. For the purposes of this project, only authorized employees of NHTSA and VTTI will have access to study data containing personally identifying information, or that could be used to personally identify you. The data, including face video which has been blurred, blacked out, or replaced by animation, may be shown at research conferences and for the highway and road safety purposes identified above. Under no circumstances will your name and other personally identifying information be associated with the video clips. No audio will be available, since no audio is being collected as part of this study.

4. Data collected in this study may be analyzed in the future for other research projects. The use of your data for future projects will require that research partners obtain Institutional Review Board approval and data sharing agreements that adhere to or exceed our commitment to protecting your confidentiality for this project are executed.
5. A Certificate of Confidentiality has been obtained from the National Institutes of Health. With this Certificate, the researchers and study sponsors cannot be forced to disclose information that may identify you, even by a court subpoena, in any federal, state, or local civil, criminal, administrative, legislative, or other proceedings. While your confidentiality is protected in most cases by the Certificate, you should know that in some rare instances involving alleged improper conduct by you or others, you may be prevented by a court from raising certain claims or defenses unless you agree to waive the confidentiality protection.

WILL I RECEIVE PAYMENT FOR PARTICIPATING IN THIS STUDY?

Total payment for your participation in this research will be \$300 per year, paid to you at 3 times during the study. You are required to provide a valid social security number in order to receive your first payment. Payments will be scheduled as follows:

1. After you have been enrolled in the study, (your motorcycle has been prepared for our study and you have completed the enrollment process, including questionnaires), you will receive \$100 via direct deposit or check. This initial payment covers months one through four of your participation in the study.
2. A second payment of \$100 via direct deposit or check will be received after the 6th month of participation. This payment covers months five through eight of your participation in the study.
3. During the 12th month, after you return to install facility to have the system removed from your vehicle and complete a few final questionnaires, you will receive a final payment of \$100 via direct deposit or check. This payment covers months nine through twelve of your participation in the study. The overall payment for those who complete all requirements will thus be \$300.

If you discontinue your participation early, by your own choice or because you are asked to leave by someone on the study team, you will be paid \$25 for every month of participation in the study (for payment purposes, a partial month at the conclusion would be considered a full month).

WHAT ABOUT INSURANCE?

Please note that since you are driving your own motorcycle, neither study personnel nor their respective organizations are responsible for the expenses that are caused by a crash you may experience. In the event of a crash, you are **not** responsible for any damage to the data collection system that is installed onto your motorcycle.

Participants in a study are considered volunteers, regardless of whether they receive payment for their participation. Under Virginia law, workers compensation does not apply to volunteers; therefore, the participants are responsible for their own medical insurance for bodily injury. Appropriate health insurance is strongly recommended to cover these types of expenses.

If you get hurt in a crash, the medical treatment available to you would be that provided to any person by emergency medical services in the vicinity where the accident occurs. The participant agrees that this agreement shall be construed in accordance with the laws of the Commonwealth of Virginia, notwithstanding any conflicts of law provisions. Further, any and all claims and/or actions against Virginia Tech or the Commonwealth of Virginia shall be brought in a court of the Commonwealth of Virginia.

AM I FREE TO WITHDRAW FROM THIS STUDY AT ANY TIME?

As a participant in this research, you are free to withdraw at any time without penalty. If you choose to withdraw, you will receive partial payment as described in the Payment for Participation section of this form. **You are free to choose not to answer any questions** or respond to any tests that you choose without penalty. If you withdraw or are dismissed from the study, we will retain data collected before your withdrawal/dismissal, but delete any data collected in the interval between when we become aware of the withdrawal/dismissal and before we are able to remove the data collection equipment. If you choose to end your participation in the study earlier than originally planned, we will need to schedule a time to remove the data collection system from your motorcycle. You will not receive your final payment due until we have removed the instrumentation from your motorcycle.

HAS THIS RESEARCH BEEN APPROVED?

Before this experiment begins, the research must be approved by the Institutional Review Board for research involving human subjects at Virginia Tech. You should know that this approval has been obtained and is valid through the date listed at the bottom of this form.

HOW DO I PROVIDE MY CONSENT?

I _____ (participant) have read and understand this consent form and conditions of participation. I understand what is being asked of me. My questions have been answered. I freely agree to participate and have not been coerced into participation. I understand that participation is voluntary and that I may withdraw at any time without penalty.

I certify that I am the owner or co-owner of the motorcycle that will be used in the study and that I am permitting the instruments and sensors to be installed in the motorcycle. I certify that I hold a valid United States motorcycle rider's license, and that the motorcycle that will be used in the study has at least the minimum amount of liability insurance required by the state in which it is registered.

