

University of Pennsylvania  
Office of Regulatory Affairs  
3624 Market St., Suite 301 S  
Philadelphia, PA 19104-6006  
Ph: 215-573-2540/ Fax: 215-573-9438  
**INSTITUTIONAL REVIEW BOARD**  
(Federalwide Assurance # 00004028)

24-Apr-2012

Norman I Badler  
Attn: Lauren Frazier  
[badler@seas.upenn.edu](mailto:badler@seas.upenn.edu)  
[lfrazier@seas.upenn.edu](mailto:lfrazier@seas.upenn.edu)

PRINCIPAL INVESTIGATOR : Norman I Badler  
TITLE : Evaluation of Gesture-Based Controls for Robotic Systems  
SPONSORING AGENCY : Department Of The Army  
PROTOCOL # : 815432  
REVIEW BOARD : IRB #8

Dear Dr. Badler:

The documents noted below, for the above-referenced protocol, were reviewed by Dr. Emma Meagher, Executive Chair of the IRB (or her authorized designee) using the expedited procedure set forth in 45 CFR 46.110 and approved on 23-Apr-2012.

\_HS-ERA Modification Request, submitted 04/20/12 [confirmation code: iifjjjj]  
\_Modification Summary, uploaded 04/20/12  
\_Imaging Release Form, uploaded 04/20/12  
\_Consent Form, uploaded 04/20/12  
\_Questionnaire, uploaded 04/20/12  
\_Email Correspondence, dated 04/20/12

If you have any questions about the information in this letter, please contact the IRB administrative staff. Contact information is available at our website: <http://www.upenn.edu/regulatoryaffairs>.

Thank you for your cooperation.

Sincerely,

IRB Administrator

**University of Pennsylvania**  
Center for Human Modeling and Simulation  
Norman I. Badler, Professor, Computer and Information Science, 215-898-5862  
3330 Walnut St., Philadelphia, PA 19104-6389

**Image Release Form**

**Evaluation of Gesture-Based Control for Robotic Systems**

Thank you for your participation. As explained prior to starting the experiment, your interactions were videotaped. By signing this release form, you are agreeing to allow us to use the images of you collected during this experiment in any manner or media without notifying you, such as publications, slides and web sites. You are waiving the right to review or inspect these images prior to such use.

You can choose to not sign this release form without prejudice to present or future care or services at the University of Pennsylvania. Choosing to not sign this release does not in anyway compromise your data or participation in the experiment. We will still use the data we collected from both the questionnaire and videotape. Not signing the release will only prevent the use of your image by the researchers in a manner other than data retrieval.

By signing below, you assert that:

You give permission for the project personnel to use the video images of you collected as a result of this study in any publications, and waive your rights to review or inspect the recording prior to such use.

Your signing of this form does not release the investigator, the sponsor, the institution nor its agents from liability for negligence.

---

---

Signature of subject

Signature of person obtaining consent

---

---

Print name of subject  
consent

Print name of person obtaining  
consent

This consent form follows federal regulations. Specifically, Title 45 (Public Welfare), Department Of Health and Human Services, National Institutes Of Health, Office For Protection From Research Risks, Part 46 (Protection Of Human Subjects). These regulations can be found

at <http://ohrp.osophs.dhhs.gov/humansubjects/guidance/45cfr46.htm>, specifically sections 46.116 and 46.117.

**University of Pennsylvania**  
Center for Human Modeling and Simulation  
Norman I. Badler, Professor, Computer and Information Science, 215-898-5862  
3330 Walnut St., Philadelphia, PA 19104-6389

**Consent Form**

**Evaluation of Gesture-Based Control for Robotic Systems**

**PURPOSE**

The purpose of this study is to measure the efficacy of different gesture-based control systems. You will test several control systems by navigating a robot through an obstacle course. The overarching goal of this work is to determine which control schemes are the best for soldiers who work with mobile robots. Should you choose to participate, we will videotape your participation for data collection purposes. The images of you collected during the study will not be redistributed without your written consent. You will be asked to complete a brief questionnaire at the end. Your total time is not expected to exceed 1 hour. The study will take place in the SIG Center within Penn Engineering. This research is sponsored by the Department of Defense and is subject to review by the Army Human Research Protections Office.

**RISKS**

The potential risks in this project are minimal. Possible risks are muscle strains and sprains while gesturing. If this occurs, the study will stop, and you can stop or continue at a future time. The electronic devices involved are not expected to cause any physical harm.

**EXCLUSION CRITERIA**

**If you have a condition or injury such that you do not have a full range of wrist, elbow, or shoulder motion, you should not participate in this study.**

**BENEFITS**

There are no direct benefits to you if you choose to participate in this study. However your participation could contribute to the understanding of gesture-based control systems, which could benefit you indirectly and may help other people in the future.

**CONFIDENTIALITY**

Every attempt will be made by the investigators to maintain all information collected in this study strictly confidential, except as may be required by court order or law. Data from the questionnaire answers may be stored on computers but will not be associated with your name. Authorized representatives of the University of Pennsylvania, including members of the Institutional Review Board (IRB), a committee charged with protecting the rights and welfare of research subjects, may be provided access to research records that identify you by name. If any publication or presentations results from this research, you will not be identified by name.

**WITHDRAWAL**

Your decision to take part in this study is a voluntary one. You may terminate your participation anytime without prejudice to present or future care or services at the University of Pennsylvania.

**ALTERNATIVES TO PARTICIPATION**

The alternative to being in this study is to not be in this study.

## **SUBJECT'S RIGHTS**

Should you wish further information regarding your rights as a research subject at the University of Pennsylvania, you may contact the Director of Regulatory Affairs at 215-898-2614.

If you have any questions about the study you may contact the principal investigator (Dr. Norman Badler), listed on the first page of this document.

By signing below, the subject asserts that:

He/she has read and understands this consent form.

He/she gives permission for the project personnel to use the images/videos collected as a result of this study for data collection purposes. Anonymity in all publications will be maintained unless he/she gives written consent to use his/her image.

He/she does not waive any of his/her legal rights by signing this form.

His/her signing of this form does not release the investigator, the sponsor, the institution nor its agents from liability for negligence.

---

Signature of subject

---

Signature of person obtaining consent

---

Print name of subject

---

Print name of person obtaining consent

This consent form follows federal regulations. Specifically, Title 45 (Public Welfare), Department Of Health and Human Services, National Institutes Of Health, Office For Protection From Research Risks, Part 46 (Protection Of Human Subjects). These regulations can be found at <http://ohrp.osophs.dhhs.gov/humansubjects/guidance/45cfr46.htm>, specifically sections 46.116 and 46.117.