

IRB #: IRB-2019-38

Title: Video analytics for safety, security, and privacy

Creation Date: 8-26-2019

Status: **Unsubmitted**

Principal Investigator: DAVID BARBARASH

Study Personnel

Study Personnel

In this section you will name all staff who will participate in the study.

**A Principal Investigator (PI) is responsible for all aspects of a research study.
STUDENTS ARE NOT AUTHORIZED TO BE PRINCIPAL INVESTIGATORS**

Provide the name of the Principal Investigator of this study.

All faculty (tenured, tenure-track, research and clinical) are eligible to be Principal Investigators. Others requesting to submit proposals as the Principal Investigator for the first time must [obtain special approval](#).

Name: DAVID BARBARASH

Organization: PWL HORT/LANDSCAPE ARCHIT

Address: 625 Agriculture Mall Drive , West Lafayette, IN 47907-0000

Phone:

Email: dbarbara@purdue.edu

If you cannot find the name of the Purdue University personnel that you are looking for using the "Find People" button above, please list them here. We will need to verify their information and load into the system.

(First Name: Last Name: Purdue e-mail address)

Primary Contact

Provide the name of the Primary Contact of this study. The Primary Contact will be copied on all correspondence regarding the IRB review. Note that the Primary Contact and the Principal Investigator may be the same. The Primary Contact must be a current

Purdue University faculty, staff, postdoc, or student and must have a role as key personnel on the study.

Name: DAVID BARBARASH

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Address: 625 Agriculture Mall Drive , West Lafayette, IN 47907-0000

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Key Personnel

Key personnel: The Principal Investigator and any project staff, students, postdoctoral staff, internal or external to Purdue University who contribute in a substantive way to the scientific development or execution of a project (including, but not limited to, consent, data collection or analysis).

Does your study have additional Key Personnel?

Check all that apply.

Yes, I have key personnel from Purdue University

Yes, I have more key personnel from another external site (outside of Purdue).

No, the only personnel on the project are the PI and Point of Contact.

Key Personnel From Purdue University

- *The Principal Investigator and Primary Contact are considered Key Personnel. You do not need to list these names again. Provide the name(s) of any other key personnel from Purdue University for this*

study using the "find people" button below.

If your collaborating key personnel are not affiliated with Purdue University, please indicate this in the next section.

- *Provide the name(s) of any other key personnel from Purdue University for this study using the "find people" button below.*
- *If your collaborating key personnel are not affiliated with Purdue University, please indicate this in the next section.*

Name: YUNG-HSIANG LU

Organization: PWL ELECTRICAL & COMPUTER ENG

Address: 501 Northwestern Avenue , West Lafayette, IN 47907-0000

Phone:

Email: yunglu@purdue.edu

If you cannot find the name of the Purdue University personnel that you are looking for using the "Find People" button above, please list them here. For researchers outside of Purdue university, please use the next section and click "external investigators".

(First Name: Last Name: Purdue e-mail address)

Provide a brief description of each person's role in the study.

Examples:

Prof. Principal will oversee all aspects of the study design and conduct

John Researcher will recruit and consent participants and collect data

Purdue Pete will analyze collected study data.

Dr. Yung-Hsiang Lu will handle data storage and security while overseeing and guiding student research teams in generating custom software to analyze recorded video.

Prof. David Barbarash will oversee student research teams with direction towards recording, mapping, and analyzing human behaviors visible from the camera feeds.

Research Sites

Where will the study take place?

✓ Purdue University

Please check the following locations.

✓ West Lafayette

Polytechnic Institute Statewide Sites

Extension Sites

Regional Campus

Please provide a brief description of the Purdue University location(s).

Provide building names or event names if applicable.

Bechtel Innovation Center

External Site (non Purdue University)

Getting started with your submission

Welcome to the submission system for the Purdue HRPP/IRB. Before you begin, you should be familiar with the framework of human research protections and how they relate to your proposed study. The materials to help you appear on our website.

Be certain that all personnel have completed online training prior to submitting the protocol.

The choices you make on the first two sections will help populate the required sections for your submission. Please look through the options and make the choice closest to your research. You can always seek assistance by scheduling an appointment with the HRPP Office or reviewing the materials at www.irb.purdue.edu.

Exempt study

Please look at the list of studies below. Determine if your proposed study design might fit into one of these descriptions.

Exempt research still requires review by the Human Research Protection Program. Choose this option if you believe your study is:

- ✓ ● Research in a common educational setting (e.g. school, daycare) about normal educational practices.
- Educational Test, Survey, Interview, or Observation of Public Behavior
- A benign intervention involving short puzzles, games and their outcomes on human behavior conducted during a single day.
- Secondary Analysis of data, documents, records, pathological or diagnostic specimens that are publicly available or properly deidentified.
- Taste and Food Quality Evaluation or Consumer Acceptance Studies.

Please choose a category. The proper sections will populate based on your selection.

Research conducted in established educational settings with normal education practices like:

1. *Research on regular and special education instructional strategies*
2. *Research on the effectiveness of, or the comparison, among instructional techniques, curricula, or classroom management methods*

Research that ONLY includes interactions through:

- *Surveys with adults*
- *Interviews with adults*
- ✓ • *Focus Groups with adults*
- *Educational Tests (cognitive, diagnostic, aptitude, achievement)*
- *Observation of public behavior*

Benign Behavioral Interventions.

Interventions that are brief in duration, harmless, painless, not physically invasive, not likely to have a significant adverse lasting impact on the subjects, and the investigator has no reason to think the subjects will find the interventions offensive or embarrassing.

Secondary analysis of samples or data.

NOTE: ?Before you will be able to submit this protocol, you will need to know the terms and conditions associated with receiving the existing data or specimens. You might also need to know the original intended use from the study's consent form. Contact the provider of the data or specimens to obtain this information before proceeding. You may also contact the Purdue IRB (irb@purdue.edu) for guidance

Food and Taste Acceptance

The research is only a taste and food acceptance quality evaluation or food consumer acceptance study

Non-exempt study

Research that does not fit into an exempt category typically involves the collection of new data from a participant.

Just-in-time

I have been contacted by a sponsor (often NSF or NIFA/USDA) to provide documentation of IRB

approval, (such as Just-in-Time or JIT) but my application to the IRB is dependent on other factors such as:

- completion of instruments
- prior animal studies
- purification of compounds

Note: This category should be utilized ONLY if the above criteria apply. If study procedures are discernible at the time of the sponsor request, please do not select this option. The research team should affirm that their sponsor will accept documentation for a development protocol.

If you request this study type, the title of the IRB protocol must exactly match the title of the grant proposal. Many funding agencies will not accept protocols with different titles.

Quality Improvement

My research involves activities without a plan to conduct research (Case Report or Quality Improvement project)

I need to know if my project is considered "Human Subjects Research"

I would like to request that another IRB Review this study. (Request for Purdue IRB to defer to another site).

When Purdue University will be engaged in human subject research with one or more institutions, investigators may submit a Request for Deferral asking that the review be deferred to one institution's Institutional Review Board (IRB).

Category Two Exemption Educational Test, Survey, Interview, or

Educational Test, Survey, Interview, or Observation of Public Behavior

Researchers are reminded that while the submission of an informed consent document is not reviewed as part of an exempt application, researchers still have an ethical obligation to ensure that participants are fully informed about the nature of a research project so that they can make an informed decision to participate

Confirm that your research involves the collection of information ONLY using one or more of the following:

- Surveys (not involving children)
- Interviews (not involving children)
- Focus Groups (not involving children)
- Educational Tests (cognitive, diagnostic, aptitude, achievement)
- Observation of public behavior (e.g. a public place where there would not be an expectation of privacy such as a public street or park but not a public school, a business, or a hospital)

Yes

No

Which best describes the interaction(s) involved in your study?

Use of educational tests (cognitive, diagnostic, aptitude, achievement)

Survey procedures

Interview procedures

Focus groups

Observation of public behavior

Does the research involve children?

Yes

No

Will your research project involve any visual or auditory recording?

Yes

No

Please describe the audiovisual data you will collect. Detail if there will be any practices to reduce disclosure of a person's identity (facial blurring, darkened lighting, voice masking etc.)

Cameras already placed on the shop room floor of the Bechtel Innovation center will record video to a secure file server on Purdue's campus. No audio will be recorded or stored.

Does the research require access to student education or health records?

Education records include any records held by the educational institution that contain personally identifiable information about students, including records related to an individual student's performance, such as written or electronic records typically found in transcripts (grades/courses/GPA/test scores), student work products such as tests, homework assignments and interactions with online student learning systems. Education records of students in most K-12 and colleges/universities are subject to regulations under the Family

Educational Rights and Privacy Act (FERPA).

Protected Health Information (PHI) is covered under the HIPAA Privacy Rule which provides federal protections for personal health information held by covered entities and gives patients an array of rights with respect to that information.

Yes

No

Will the research generate information that, if revealed outside the research, could reasonably place the subjects at risk of criminal or civil liability, or damage their financial standing, employability, educational advancement or reputation?

This means that the research involves the collection of sensitive information about the subject, such as information about illegal behaviors, mental health issues, sensitive health conditions, genetic information, or negative opinions/attitudes about employers or teachers. A disclosure of this information outside of the research (breach of confidentiality) could pose legal risks or risks of social stigmatization to the subjects.

Yes

No

Does the research collect information about the subject in such a manner that their identity can be readily ascertained by the study team, directly or through identifiers linked to the subjects?

This means that the information is collected with direct identifiers (name, address, email, phone number, social security number, student ID, patient ID) OR indirect identifiers, such as a code that can link back to the subject or data elements that could be combined to readily re-identify an individual (dates, employment history, etc.).

Yes

✓ No

Privacy refers to a person's desire to control access of others to themselves. Describe the steps that will be taken to protect and assure the privacy of the subject.

Detail specific actions the research team will take to ensure that privacy is protected through each phase of the study

(e.g. recruitment, mailings to subjects, phone calls with subjects, research visits).

Examples of issues:

- *Potential subjects may not want to be approached for research purposes by someone they do not know.*
- *Potential subjects may not want others to know they have a disease or were previously treated for a condition; therefore, you may want to avoid sending a recruitment letter in the mail that may be opened by others.*
- *Subjects may not want to be seen in areas that may stigmatize them or reveal a certain belief or physical/mental health condition.*

Recording will not interfere with the subjects' normal activities. Students must swipe their Purdue ID cards to gain access to the space and are aware and informed about the cameras places throughout the facility. The cameras are already used to monitor machinery use and safety. This enters the open areas of the Bechtel center under standard public realm rules where no expectation of privacy is to be granted.

This project does not identify any individual; thus, this study does not know whether the same person is recorded multiple times. Individuals recorded and analyzed through the camera feeds will not be associated with their ID swipes, nor will this study access or log any data from the swipe access system. This study does not care about who an individual is, only that they are an independent entity within the camera field of view.

Video will be stored on computers with password protection. The computer will be located in Dr. Lu's research Lab EE 220C. All video files will be encrypted; thus, even if the computer were compromised or stolen, the files are not readable without the encryption key. Only the Purdue students supervised by the PI and the Co-PIs have the decryption key and can see the video. The video will be stored for no longer than six months during this study. Sound will not be recorded.

Will subjects receive payment or other incentives for their participation in the study?

Yes

✓ No

Provide a brief summary of your research

Dozens of people are injured on industrial manufacturing and processing floors each day. This study seeks to improve manufacturing process safety and efficiency by tracking where people move, linger, and focus attention on while on a shop floor. The first stages of this study will use the existing camera network within the Bechtel Innovation Center as its primary data source. As software is written to analyze the video, additional open-source public-realm videos may be used to test the system.

The initial steps for investigation is to determine if a multi-camera system can coordinate identification of individuals and track their location and movement across multiple frames of video. Secondly, determining directionality of focus/attention will be explored.

If successful, analyzed data can be used to improve safety and operational security within lab and shop floors across Purdue's campus by identifying problem areas, adjacency, and flow within these discreet spaces.

Exempt-Your research appears to be eligible for exemption under Category 2. You will be guided to answer just a few more items before submitting your protocol.

This exemption determination is subject to review by the HRPP Office. Please do not begin your research until you receive the final determination letter. All personnel listed in the application must complete training prior to conducting research.

Please click continue to move on to the next required sections.

Funding Source(s)

CURRENT Funding Source(s)

To review your protocol appropriately with differing sponsor standards, the HRPP must have the accurate funding source. It is a PI's responsibility to update funding sources as a modification to the protocol and associated forms when funding changes.

Please list any sources of funding that are **confirmed** by contract, agreement, or other support of a sponsor.

You will list any pending sources in the next question.

Externally sponsored (federal, state, corporate, foundations, industry, donor)

Internal Purdue University Departments (Includes departmental funds, start-up funds)
(Note, this does not include Purdue Research Foundation or Purdue Research Park companies-please list as external sponsor above).

- ✓ None - There are no confirmed funding sources at this time.

ANTICIPATED Funding Source(s)

To review your protocol appropriately with differing sponsor standards, the HRPP must have the accurate funding source. It is a PI responsibility to update funding sources as a modification to the protocol and associated forms when funding changes.

If you are a student or staff member filling this out on behalf of a Principal Investigator (PI), please be certain to affirm with the PI that this information is accurate.

Please list any sources of funding where sponsorship is **anticipated** or pending a final decision.

- ✓ Externally sponsored (federal, state, corporate, foundations, industry, donor)
Please search for the sponsor(s) here. Be certain to include any funding that originates or includes US federal sources.
-

Provide a list of pending support for this project.

National Science Foundation - NSF

If you do not see the name of the funding source using the "Find Sponsors" button above, please enter the full sponsor name in the text box below.

Internal Purdue University Departments



(Note, this does not include Purdue Research Foundation or Purdue Research Park companies-please list as external sponsor above).

There are no pending funding sources at this time.

If the protocol does not have a sponsor, please detail how the study will be conducted without funding.

Presently, the study is being managed by two Purdue faculty as part of their regular research loads, with a team of Purdue undergraduate students enrolled on a for-credit independent study course addressing the research goal. Student contributions will result in listed authorship on forthcoming publications.

Conflicts of Interest or outside activities must be disclosed and managed prior to IRB approval. For more information about these policies, please consult the resources listed in the question marks in each section.

The IRB may request confirmation of proper disclosures.

Does this IRB protocol involve any work, advice, or service for an entity other than Purdue University?

For example, if this activity is done as an outside consulting activity, or employee's start-up company, this activity will not qualify for review by the Purdue IRB and an outside IRB or service must be sought.

- I attest that I understand the outside activities policy and that all members of the research team are conducting this project on behalf of Purdue University.

Do you or any investigator(s) participating in this study have a significant financial interest (SFI) related to this research project?

Receiving more than \$5,000 in compensation from, or having ownership interests in, outside entities, constitute Significant Financial Interests that need to be disclosed. Definitions of SFI, Investigator and Institutional Responsibilities, can be found at <https://www.purdue.edu/policies/ethics/iib2.html#definitions>.

Yes

- No

Do you or any person affiliated with the protocol have or know of any arrangement or understanding, tentative or final, relating to any future financial interest, financial relationship, future grant, position, or advisory role either related to the protocol, or dependent on the outcome of the research under the protocol?

Yes

No

Is there anything not disclosed above which you believe might constitute a conflict of interest or an appearance of a conflict of interest in connection with the protocol?

Yes

No

Do you have any other supporting documents to attach?

Investigators are invited to submit reference lists, study instruments, supporting information, training data, device pictures, or other relevant items for their study that were not addressed in the application.

Yes

Attach any other documents. Please use a file name that describes the document.

You may attach multiple files to this entry.

PLEASE DO NOT UPLOAD PARTICIPANT DATA OR IDENTIFIABLE RESEARCH DATA.

No