

INDIANA UNIVERSITY INFORMED CONSENT STATEMENT FOR

“Human-Centered Robotics Experiences for Education in Engineering, Computer Science, and Society”

We are doing a research study to learn how robots can be used in STEM education to engage more children in learning about science, technology, mathematics, and their societal applications. We would like to ask your child to be in this research study.

The study is being conducted by Prof. Selma Sabanovic and Prof Cindy Hmelo-Silver from Indiana University Bloomington, and Professor Seta Bogosyan from University of Alaska Fairbanks. It is funded by the National Science Foundation.

STUDY PURPOSE

Your child is being asked to be in this research study because he/she is a member of a program or classroom where we are conducting this study.

The purpose of this study is to understand how a curriculum using problem-based learning methods and human-centered robotics as a theme can help:

- introduce students in grades 6-12 to STEM education through robotics projects that emphasize the interconnections between the scientific, technical, and social aspects of technology;
- increase knowledge and *participation of students* in STEM areas and careers;
- raise awareness and knowledge among students (both mentoring undergrads/grads, and 6-12 students) and teachers about *telepresence applications of robotics* as an emerging form of educational, medical, and other services; and
- increase students' awareness of various environmental and cultural contexts.

We expect the strong social focus of HCR theme to possibly be more appealing for a diverse group of students. Our choice is inspired by existing research and informal discussions with students and teachers. The successful outcomes of the project will *contribute to the pedagogy* of STEM education by demonstrating how themes connecting technology with social context can attract more diverse students to STEM, specifically female, minority, and rural students.

NUMBER OF PEOPLE TAKING PART IN THE STUDY:

If you agree to allow your child to participate, he/she will be one of several hundred subjects who will be participating in this research.

PROCEDURES FOR THE STUDY:

If you agree for your child to be in the study, he/she will participate in the normal activities of the program or classroom. Researchers will make audio and video recordings of the normal curriculum and collect artifacts (drawings, models, etc) that your child creates. Your child will not be asked to do anything beyond the normal curricular activities.

Any video data collected in these implementations will be analyzed by researchers and may be used for professional development with participating teachers, presented in scholarly conferences and papers, or used within “video cases” referenced by teachers and researchers. In a video case, videos and documents will be and published on a password-protected website for professionals interested in the design of the robotics curriculum.

Your child may choose to stop participating in the study at any time. (Note that this does not mean your child has been given permission to ignore the expectations of your teacher's/school curriculum, just this study.)

RISKS OF TAKING PART IN THE STUDY:

There may be an unintentional loss of confidentiality; the study poses no significant risks above and beyond the risks posed by a regular school curriculum. All records are kept either in a password-protected database or in locked drawers and rooms. Every effort is made to maintain confidentiality, including no mention of child/adult by name or by educational center. . All video will be kept in a locked location or password protected computer. All video/audio will be transcribed for further analysis.

BENEFITS OF TAKING PART IN THE STUDY:

We cannot predict whether there will be any direct benefit to your child as an individual participating in this study, but subjects may experience a number of educational benefits, which may include:

- Having an opportunity to learn disciplinary content in an engaging and personally meaningful context;
- Learning 21st century STEM (science, technology, engineering, and math) skills and content knowledge as they interact with others;
- Learning about robotics and their potential applications in everyday contexts;
- Interacting with their peers as they learn things together in a protected environment;

ALTERNATIVES TO TAKING PART IN THE STUDY:

Instead of being in the study, you may opt-out your child at any time – and all information and data associated with your child will be discarded.

CONFIDENTIALITY

Efforts will be made to keep your child's personal information confidential. We cannot guarantee absolute confidentiality. For example, personal information may be disclosed if required by law. Your child's identity will be held in confidence in reports in which the study may be published and databases in which data may be stored. If we have raw audio recordings or video recordings, only Prof. Selma Sabanovic, Prof. Cindy Hmelo-Silver, Dr. Matthew Francisco, Dr. Orion Lawlor, and their graduate and undergraduate research assistants will have access. Any video included in a video case will be available to a wider audience, but will be posted on a password protected site and will not be available for download. Video, audio, and other recordings will primarily be used for analytical purposes. However, collected data may also be used for educational purposes, for example, conference presentations or journal publications. All video and digital recordings, with the exception of published video cases, will be destroyed after five years.

Organizations that may inspect and/or copy your research records for quality assurance and data analysis include groups such as the Indiana University Institutional Review Board or its designees, the study sponsor, National Science Foundation, and (as allowed by law) state or federal agencies, specifically the Office for Human Research Protections (OHRP who may need to access your child's research records.

PAYMENT

Neither you nor your child will receive payment for taking part in this study.

CONTACTS FOR QUESTIONS OR PROBLEMS

For questions about the study, contact the researcher Dr. Selma Sabanovic at (812) 361-5242 or selmas@indiana.edu.

For questions about your rights as a research participant or to discuss problems, complaints or concerns about a research study, or to obtain information, or offer input, contact the IU Human Subjects Office at (812) 856-4242 [for Bloomington] or (800) 696-2949 or email at irb@iu.edu.

VOLUNTARY NATURE OF STUDY

Taking part in this study is voluntary. You may choose not to allow your child to take part or may remove your child from the study at any time. Leaving the study will not result in any penalty or loss of benefits to which your child is entitled. Your decision whether or not to allow your child to participate in this study will not affect your current or future relations with Indiana University or the site where the study takes place.

HUMAN-CENTERED ROBOTS RESEARCH STUDY: PARENT'S CONSENT

In consideration of all of the above, if you are open to your child participating, please return this form.

My child's full name is (Please print): _____ **School:** _____

Date of Birth: _____ **Grade:** _____

Please check *one* box below indicating the level of participation your child will have in this robotics study:

- I permit my child to fully participate in this research study.
- I permit my child to participate in this research study, but I would NOT like video or audio data to be collected. Pre and post tests and interviews will still be collected.
- I do NOT permit my child to participate in this research study. My child will participate in all activities, but will not be audio or video recorded. No data (including pre or post-test assessments) will be collected.

Parent/Guardian Name (PRINTED)

Parent/Guardian Name (SIGNED)

Date