

## Parent/Guardian Permission Form

**Title of Study:** Developing STEM Identity in Rural Audiences through Community-based Engineering Design (eIRB # 20719)

**Principal Investigator(s):** Dr. Tameshia Ballard Baldwin ([tsballar@ncsu.edu](mailto:tsballar@ncsu.edu), 919-515-3263), Dr. LaTricia Townsend ([ldtownse@ncsu.edu](mailto:ldtownse@ncsu.edu), 919-513-8544)

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### **What are some general things you should know about research studies?**

Your child is invited to take part in a research study. Your child's participation in this study is voluntary. Your child has the right to be a part of this study, to choose not to participate, and to stop participating at any time without penalty. The purpose of this research study is to gain a better understanding of factors that lead to greater interest in science, technology, engineering and mathematics (STEM) careers among rural middle school students. We will do this by asking your child to complete a few short surveys and participate in interviews and focus groups to talk about their experiences in the engineering design courses.

Your child is not guaranteed any personal benefits from being in this study. Research studies also may pose risks to those who participate. You may want your child to participate in this research because it will help provide a better understanding of their interest levels in STEM and their degree of knowledge of STEM subjects and STEM careers. You may not want your child to participate in this research because there is a minimal time requirement to engage in the research activities.

Specific details about the research in which your child is invited to participate are contained below. If you do not understand something in this form, please ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If, at any time, you have questions about your child's participation in this research, do not hesitate to contact the researcher(s) named above or the NC State IRB office. The IRB office's contact information is listed in the *What if you have questions about your rights as a research participant?* section of this form.

### **What is the purpose of this study?**

The purpose of the study is determine the level of interest, self-efficacy (a person's belief in his or her ability to successfully perform a given task or behavior), knowledge of STEM subjects and STEM career awareness of rural middle school students before and after completing a series of engineering design-focused elective courses. The goal is to determine whether participating in these courses will have a positive impact on those factors.

### **Is my child eligible to be a participant in this study?**

There will be approximately 320 middle school students, 2-4 middle school teachers and 50-75 undergraduate student mentors participating in this study.

In order to be a participant in this study, your child must have your permission to participate and your child must agree to be in the study.

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## Informed Consent/Assent for Participation in Research

Your child cannot participate in this study if they do not want to be in the study or you do not give them permission to be in the study.

### **What will happen if your child takes part in the study?**

If you agree to allow your child to participate in this study, they will be asked to do all of the following:

1. Take a 20-25 minute online survey once at the beginning of the engineering design course and again at the end of each year of the program.
2. Take a 20-25 minute STEM content knowledge assessment once at the beginning of each engineering design course and again at the end of each course.
3. Take a short 5-10 minute course feedback survey at the end of each engineering design course.
4. Participate in interviews/focus groups 1-2 times per year to talk about their experiences in the engineering design courses and be observed by researchers 1-2 times per year during informal visits to the course. The interviews/focus groups will last no more than one hour in duration, and will be held either in-person at your child's school, or virtually via Zoom.
5. Agree to allow researchers to access your child's 5<sup>th</sup> and 8<sup>th</sup> grade End of Grade (EOG) science test scores from school administrators, if available. The 5<sup>th</sup> grade EOG will serve as the baseline for students' knowledge of science and the 8<sup>th</sup> grade EOG will serve as a final measure of their science knowledge after taking the engineering design courses.
6. In the event no End of Grade (EOG) science test scores are available (as is the case with spring 2020 due to COVID-19), take a 60 minute online EOG Science released exam developed by the North Carolina Department of Public Instruction as a proxy for the EOG tests to replace the missing data.

The total amount of time that you will be participating in this study is approximately 2-2.5 hours for each year of participation in the program.

### **Recording and images**

If you want your child to participate in this research, you must agree to allow your child to be video/audio recorded during the interviews/focus groups. If you do not agree to allow your child to be video/audio recorded, they cannot participate in this research.

### **Risks and benefits**

There are minimal risks associated with participation in this research.

There are no direct benefits to your child's participation in the research. The indirect benefits are that this study will help researchers better plan and execute programs that will have a positive impact on rural middle school students' interest in STEM research and careers.

### **Right to withdraw your participation**

Your child can stop participating in this study at any time for any reason. In order to stop your child's participation, please contact Dr. Tameshia Baldwin by email at [tsballar@ncsu.edu](mailto:tsballar@ncsu.edu) or by phone at 919-515-3263. If you or your child choose to withdraw consent and to stop participating in this research, you can expect that the researcher(s) will redact your child's identifiable information from their data set, securely destroy your child's data, and prevent future uses of your child's identifiable information for research purposes wherever possible. This is possible in some, but not all, cases.

### **Confidentiality, personal privacy, and data management**

Trust is the foundation of the participant/researcher relationship. Much of that principle of trust is tied to keeping your child's information private and in the manner that we have described to you in this form. The information that your child shares with us will be held in confidence to the fullest extent allowed by law. Confidentiality cannot be guaranteed during the focus groups, but we will ask participants not to share responses outside of the group. Protecting your child's privacy as related to this research is of utmost importance to us. However, there are very rare circumstances related to confidentiality where we may have to share information about you or your child. These are limited to instances in which imminent harm could come to your child or others.

How we manage, protect, and share your child's data are the principal ways that we protect your child's personal privacy. Data generated about your child in this study will be de-identified. Data that will be shared with others about your child will be de-identified.

**De-identified.** De-identified data is information that at one time could directly identify your child, but that we have recorded the data so that your child's identity is separated from the data. We will have a master list with your child's code and real name that we can use to link to your child's data. While we might be able to link your child's identity to your child's data at earlier stages in the research, when the research concludes, there will be no way your child's real identity will be linked to the data we publish.

To help maximize the benefits of your participation in this project, by further contributing to science and our community, your child's de-identified information will be stored for future research and may be shared with other people without additional consent from you.

### **Compensation**

There will be no compensation for participation in this study.

### **What if you child is a student?**

Your child's participation in this study is not a class requirement and their participation or lack thereof, will not affect their class standing or grades.

### **Sponsorship and Funding**

This research is funded by the National Science Foundation. This means that the sponsor is paying the research team for completing the research. The researchers do not, however, have a direct financial interest with the sponsor or in the final results of the study. If you would like more information, please ask the researcher(s) listed in the first page of this form about the funding and sponsorship.

### **What if you have questions about this study?**

If you have questions at any time about the study itself or the procedures implemented in this study, you may contact the researcher, Dr. Tameshia Baldwin by email at [tsballar@ncsu.edu](mailto:tsballar@ncsu.edu) or phone at 919-515-3263

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## Informed Consent/Assent for Participation in Research

### **What if you have questions about your rights as a research participant?**

If you feel your child has not been treated according to the descriptions in this form, or their rights as a participant in research have been violated during the course of this project, you may contact the NC State IRB (Institutional Review Board) Office. An IRB office helps participants if they have any issues regarding research activities. You can contact the NC State IRB Office via email at [irb-director@ncsu.edu](mailto:irb-director@ncsu.edu) or via phone at (919) 515-8754.

### **Consent To Participate**

By signing this parental consent form, I am affirming that I have read and understand the above information. All of the questions that I had about this research have been answered. I have chosen to participate in this study with the understanding that I may stop participating at any time without penalty or loss of benefits to which I am otherwise entitled. I am aware that I may revoke my consent at any time.

Child's printed name \_\_\_\_\_

Parent's printed name \_\_\_\_\_

Parent's signature \_\_\_\_\_ Date \_\_\_\_\_

Investigator's signature \_\_\_\_\_ Date \_\_\_\_\_