

Dear Parent and Student,

The National Radio Astronomy Observatory (NRAO) and West Virginia University will be sponsoring an out-of-school science experience this year at your child's school, the Pulsar Search Collaboratory (PSC). Your child has expressed interest in joining a PSC club to learn about radio astronomy and pulsar searching through online educational experiences provided by NRAO, and to search for pulsars. Pulsars are rare astronomical objects that emit intense bursts of energy and may be the key to fully understanding Einstein's theories. We hope this activity allows students to contribute to science and to begin to see themselves as scientists. As part of evaluating the project and fulfilling the educational research mission of the National Science Foundation which funds the project, we hope to understand students' ideas about themselves as scientists and their plans for their future careers and how these relate to science. PSC club members will be asked to complete a few short surveys over the course of the year to explore their thinking about science to understand the effect of the PSC on the decision to pursue a career in science or engineering. PSC students' use of online materials will also be analyzed to improve the online learning experience.

For your child to participate, a parent or guardian must sign the attached consent form. The PSC club member must also sign an assent form (also attached). There are no known risks in participating in this study. Your child's grades will not be affected, and all responses are confidential – we won't share them with anyone else. For information regarding your child's rights as a research subject, to discuss problems, concerns, or suggestions related to the research, to obtain information or offer input about the research, contact the Office of Research Integrity & Compliance at (304) 293-7073.

To participate, the parent or guardian must sign the the attached consent form, the student the assent form, and return it to the PSC club teacher leader.

Thank you for your help with this important research study!

Sincerely,

Kathryn Williamson, PhD, West Virginia University
kewilliamson@mail.wvu.edu

John Stewart, PhD, West Virginia University, Department of Physics and Astronomy
jstewart1@mail.wvu.edu

Please contact John Stewart with any questions about the educational research.

Parent or Legal Guardian Consent Information Form

Principal Investigator: Dr. Maura McLaughlin, Department: Physics, Protocol Number: 1504666275
Co-Investigator(s): John Stewart, Kathryn Williamson, and Sue Ann Heatherly

Study Title: Collaborative Research: Developing STEM self-efficacy and science identities through authentic astrophysics research in online and face-to-face environments (STEM-ID)

Contact Persons: In the event you have any questions about this research, you should contact Dr. John Stewart at jcstewart1@mail.wvu.edu. For information regarding your rights as a research subject, to discuss problems, concerns, or suggestions related to the research, to obtain information or offer input about the research, contact the Office of Research Integrity & Compliance at (304) 293-7073.

Introduction: As part of the Pulsar Search Collaboratory (PSC) your child will be enrolled in a student of out-of-class science experiences research study which has been explained to you by the PSC club leader.

Purpose: This study seeks to understand the effect of the Pulsar Search Collaboratory (PSC) on students' science career decision making and how those effects change with time. It also seeks to understand how PSC programmatic elements, both online and in the club setting, affect students' interest in science and their desired to continue in the club. This information will help improve the PSC experience. Results of general interest will be shared with the academic community. This study is being conducted by Drs. Maura McLaughlin and John Stewart of the West Virginia University Physics and Astronomy Department and Drs. Sue Ann Heatherly and Kathryn Williamson at the National Radio Astronomy Organization Green Bank Telescope.

Description of Procedures: By printing your name and signing the form on the next page, you consent to allow information collected by surveys given in the PSC clubs and information collected about your child's use of the PSC website to be used for this research. Your child does not have to answer all the questions on the surveys if he or she does not want to. You also consent allow your child to receive once yearly follow-up emails and short online surveys about his or her current career choice and attitudes about science after leaving the PSC through the sophomore year of college. You also acknowledge that you understand that all communication within the PSC web portal is considered public communication.

Discomforts: There are no known risks associated with participating in this study. **Alternatives:** You do not have to participate in this study. **Benefits:** The knowledge gained from this study may eventually benefit others. **Financial Considerations:** There are no fees associated with or compensation for this research.

Confidentiality: Any information about your child that is obtained as a result of your participation in this research will be kept confidential. Once the complete dataset is collected, your child will be assigned an id number, and all personal identifying information will be removed from the dataset. All web information will be stored under this id. Only Dr. Stewart will be able to access to the id and your personal identifying information.

Voluntary Participation: Participation in this study is voluntary. You are free to withdraw your consent for your child to participate in this study at any time. Your child is free to remove his or her consent to participate at any time. Refusal to participate will involve no penalty to your child. Refusal to participate or withdrawal from the study will not affect your child's grades or eligibility to participate in athletics.

You have been given the opportunity to ask questions about the research, and you have received answers concerning areas you did not understand.

Upon signing this form, you agree to allow your child to participate in this study: **Collaborative Research: Developing STEM self-efficacy and science identities through authentic astrophysics research in online and face-to-face environments (STEM-ID).**

Signatures

Signature of Person Conducting Consent Discussion

Printed Name

Date

Time

Statement of Parent or Guardian

My child appears to understand the research to the best of his or her ability and had agreed to participate.

Signature of Parent or Guardian

Printed Name

Date

Time

Upon signing this form, you will receive a copy.

Assent Form

Principal Investigator: Dr. Maura McLaughlin, Department: Physics, Protocol Number: 1504666275
Co-Investigator(s): John Stewart, Kathryn Williamson, and Sue Ann Heatherly

Study Title: Collaborative Research: Developing STEM self-efficacy and science identities through authentic astrophysics research in online and face-to-face environments (STEM-ID)

Contact Person: In the event you have any questions about this research, you should contact Dr. John Stewart at jcstewart1@mail.wvu.edu. For information regarding your rights as a research subject, to discuss problems, concerns, or suggestions related to the research, to obtain information or offer input about the research, contact the Office of Research Integrity & Compliance at (304) 293-7073.

Introduction: You have been asked to participate in this research study that has been explained to you by the PSC club leader.

Purpose: This study seeks to understand the effect of the Pulsar Search Collaboratory (PSC) on students' science career decision making and how those effects change with time. It also seeks to understand how PSC programmatic elements, both online and in the club setting, affect students' interest in science and their desired to continue in the club. This information will help improve the PSC experience. Results of general interest will be shared with the academic community.

Description of Procedure: By printing your name and signing the form on the next page, you consent to allow information collected by surveys given in the PSC club and information collected about your use of the PSC website to be used for this research. You also consent to receive follow-up emails and short surveys about your current career choice and attitudes about science through your sophomore year of college. You also acknowledge that you understand that all communication within the PSC web portal is public communication. You are not required to answer all questions on the surveys if you do not want to.

Discomforts: There are no known risks associated with participating in this study. **Alternatives:** You do not have to participate in this study. **Benefits:** The knowledge gained from this study may eventually benefit others. **Financial Considerations:** There are no fees associated with or compensation for this research.

Confidentiality: We promise that anything we learn about you in this study will be kept as secret as possible.

Voluntary Participation: You do not have to do this. No one will be mad at you if you refuse to do this or if you decide to quit. You have been allowed to ask questions about the research, and all of your questions were answered.

I willingly agree to be in this research.

Signatures

Signature of Subject

| Printed Name | Date | Time |
|--------------|------|------|
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The minor has had the opportunity to have questions addressed. The minor willingly agrees to be in the study.

Signature of Investigator or Co-Investigator

| Printed Name | Date | Time |
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