

Each participant must register with a separate form. Space is limited. Participants will be notified **BY EMAIL** of acceptance on a first-come, first-served basis. Registration is limited to girls in grades 5-8 or equivalent.

Participant Name: \_\_\_\_\_

Home Address: \_\_\_\_\_

Mailing Address (if different): \_\_\_\_\_

Home Phone: \_\_\_\_\_ Cell (or other) Phone: \_\_\_\_\_

Grade (circle one): 5 6 7 8 Age: \_\_\_\_\_ T-shirt size: YM YL AS AM AL AXL

Where do you go to school? \_\_\_\_\_

Email address (primary contact means): \_\_\_\_\_

**Session Color Group Preference**

List your top three session color groups in order of preference (see attached pages for descriptions). All three blanks **must** be completed with unique color group choices. Every effort will be made to place participants in one of their top color choices; however, this is not guaranteed.

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

**Snacks and lunch will be provided:**

If you have any allergies, dietary restrictions, or special needs, please let us know: \_\_\_\_\_

**Emergency Contact Information (REQUIRED)**

Parent/Guardian Name: \_\_\_\_\_ Relationship to child: \_\_\_\_\_

Phone: \_\_\_\_\_ Email address: \_\_\_\_\_

Other Emergency Contact Name and Phone: \_\_\_\_\_

**Disclaimer: In order to participate, both the consent and assent forms must be signed and returned.**

Parent/Guardian Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Please answer the following questions to the best of your ability.**

How interested are you in STEM? A ton Some A little None

Have you previously participated in any STEM-related activities outside of school? Yes No

Specifically, have you attended a past Seeding Your Future event? 2014 2015 2016 2017 (please circle all that apply)

Do you feel like you are able to do STEM? Yes No

Do you feel like you understand why STEM is important? Yes No

How interested are you in doing STEM for a career? A ton Some A little Not at all

What excites you about STEM? \_\_\_\_\_

If you have any questions, contact the conference organizers at [seedingyourfuture@gmail.com](mailto:seedingyourfuture@gmail.com) or visit [seedingyourfuture.weebly.com](http://seedingyourfuture.weebly.com)

**Registration forms must be received by September 7, 2018.**

Sponsored by:

**Please mail to:**

Sytil Murphy  
Associate Professor of Physics  
Shepherd University  
P.O. Box 5000  
Shepherdstown, WV 25443

**Or email to:**

[seedingyourfuture@gmail.com](mailto:seedingyourfuture@gmail.com)



## Seeding Your Future Conference Color Groups

HOW SYFC WORKS: Each participant attends three to four workshops, which are clustered into “color groups.” For example, the RED color group below will attend workshops 2, 8, 16, and 18. Participants rank their top three color group choices on the registration form. Every effort will be made to place participants in one of their top color choices; however, this is not guaranteed. All groups are unique and aim to “seed your future.” Each color group is limited and fills on a first-come/first-served basis. The conference is limited to 150 participants. Workshops are listed in numerical order, not in the order of presentation. Participants will receive an email confirmation of their registration but will not know their color group until the day of the event. Each participant attends the three to four workshops listed in their color group. Please note that SYFC is an event for middle-schoolers only. We do not have space to accommodate parents. Thanks for understanding.

RED..... 2, 8, 16, 18  
ORANGE..... 3, 4, 13, 17  
DAISY ..... 4, 6, 8, 16  
LIME..... 3, 7, 13, 24  
PINK..... 6, 10, 12

BLUE ..... 12, 14, 20  
PURPLE..... 1, 4, 7, 11  
JADE..... 1, 15, 21  
MAROON.... 4, 10, 19, 23  
TAN..... 1, 18, 23, 24

SAPPHIRE... 11, 14, 22  
GREY..... 5, 9, 10, 20  
BLACK ..... 9, 18, 19, 23  
WHITE ..... 5, 15, 22

### Workshop Abstracts:

#### 1. **Seeing Sounds, Hearing Pictures** Presented by Dr. Ruth Conley

Did you know that computers allow us to both see and hear sounds? We also use computers to understand and modify sound. In this workshop you will listen to, view, and process sounds on the computer. You'll even make your own audio composition to take home!

#### 2. **The Eureka Moment** Presented by Dr. Sytil Murphy

While in the bath, Archimedes determined that heavier objects displace more water, allowing him to check if the king's crown was pure gold. After this insight, Archimedes ran naked down the street yelling “EUREKA!” Based upon Archimedes' Principle, we will determine the composition of the modern penny.

#### 3. **The Eyes: A Pathway to Your Soul or Your brain?** Presented by Dr. Heidi Dobish

Come and explore how your eyes perceive color, depth and so much more. This session will include demonstrations and a chance for you to create an eye with play-dough!

#### 4. **Frannie and the Water Factory** Presented by Dr. Fran Brown

Learn the science and awesomeness of certified water supply operations! Build your own direct filters and learn how your city keeps your water safe.

#### 5. **Surviving the Zombie Apocalypse** Presented by Dr. Jeff Groff

Learn how to use interactive computer models simulated with NetLogo to investigate the dynamics of a zombie outbreak. We will look at how humanity's survival depends on zombie hunter effectiveness, the prevalence of natural or acquired immunities to the zombie plague, and the ability of zombies to seek out and infect healthy individuals.

#### 6. **Hooray for DNA!** Presented by Dr. Carol Plautz

Learn about the importance of DNA and the cells of your body, then step up to the lab bench and isolate and visualize your OWN DNA!

#### 7. **Can You Dig It?** Presented by Dr. Karen Adams

What does math have to do with unlocking the secrets of King Tut's tomb or finding the Titanic? Join in this archaeological exploration and learn how cool math tricks piece together the puzzles of the past!

#### 8. **Animate Your Name** Presented by Ms. Elaine Schwing

Come learn computer programming basics by using Code.org's tools to animate each letter of your name. You will be able to send yourself the final product to show off to friends and family!

#### 9. **Assessing Local Freshwater Resources** Presented by Ms. Cecilia Melton

Human activities may impact water quality in local fresh water sources, like the Town Run and the Potomac River. In this workshop, we will examine our impacts on local water resources. We will analyze our local fresh water resources to determine if human impacts are threatening water quality.

#### 10. **SlimeFest!** Presented by βββ

In this workshop, you will learn how to make and customize your own slime! Take home your creation after learning about polymers!

#### 11. **Dr. Warburton's Biochemistry Emporium** Presented by Dr. Robert Warburton

In the past, Dr. Warburton looked at the digestion of liver and bioluminescence. This year, he couldn't decide on just one idea, so this workshop will feature a biochemistry inspired experiment.

## Seeding Your Future Conference Color Groups

### 12. **Programming Grab Bag** Presented by Mr. Adam Paige

Want to learn how to do some programming? In this workshop, you will be able to explore ways to program computers and apply your programs to things like building and designing a computer game.

### 13. **Water Bugs and Stream Pollution** Presented by Dr. Peter Vila

We all need clean drinking water and many love playing in streams. But how do you determine if your stream is healthy? Aquatic insects are fascinating creatures and can also be used to detect water pollution problems. Find out why and how aquatic insects are used to detect healthy waters.

### 14. **YouTube Chemistry** Presented by Dr. Jacquelyn Cole

There is some awesome science happening on YouTube so we'll try them out in the lab. We will insta-freeze water, write invisible notes, play with gallium, melt Legos, and more!

### 15. **Colorful Chemistry** Presented by Dr. Dan DiLella

The color of an object such as a shirt or a ball depends on the materials from which it is made. However, when a chemical reaction occurs, it is often possible to produce colors that are different from the starting materials. You will perform several chemical reactions resulting in surprising color changes.

### 16. **Thinking Outside the Box: Odd and Unexpected Mental Processes** Presented by Dr. Lindsey Levitan

We often think of our minds as computers – objectively processing information to arrive at correct conclusions. Everyday mental processes can miss things right in front of us, stumble on seemingly simple tasks, and draw radically incorrect conclusions. Come learn about how the mind really works.

### 17. **Rock Down to Electrochemical Avenue** Dr. Jordan Mader

Electrochemistry is the driving force behind batteries, solar cells, and fuel cells. Learn about how these reactions work by transferring electrons from one substance to another. Then, you can create your own work of art using electrochemistry!

### 18. **H<sub>2</sub>O Catalysis (Science of Bath Bombs)** Presented by Chemistry Society

Want to know how catalysis works and the purpose of catalysis in everyday life? Come learn about it in and make your own bath bomb!

### 19. **Amazing Mushrooms!** Presented by Dr. Laura Robertson

The fungal kingdom includes the mushrooms that you eat on your pizza, the yeast that bakes your bread, and the mold used to make blue cheese. We will learn the parts of a mushroom (useful for identification), look at different species through the microscope, and make a mini mushroom grow kit!

### 20. **I See What You're Saying: Sight and Hearing in the Brain** Presented by Dr. Chris Lovelace

Without our brain, we wouldn't be able to perceive or respond to things around us. You'll learn what parts of the brain help us see and hear and then look at a real human brain! We will do an experiment on how the brain processes vision and hearing by measuring response to lights and sounds.

### 21. **Digital Fabrication with Lasers!** Presented by Mr. Kevin Dartt

Digital fabrication is the process of using computer aided drawing programs in conjunction with robots to create precise parts, but don't let that intimidate you! Participants will use computer software to create a design of their own that will be etched onto a decorative box using a laser engraving machine.

### 22. **Create It Online!** Presented by Mr. Jason Miller

Create your own story book, cartoon, or game online. We'll use the Scratch web site where millions of kids learn computer programming and share their creations. WARNING: you may find yourself creating programs on Scratch all the time!

### 23. **An Ocean of Motion** Presented by Mr. Devon Umstead

The ocean is a dynamic place, with water moving from location to location. This motion is a very important factor in climate and biology, leading to a variety of underwater environments. Density is among the most important factors for the motion of water and will be studied in this workshop!

### 24. **From Two Dimensions to Three** Presented by Ms. Amanda Harmon

A photograph is a two-dimensional (2D) representation of an object. It is now possible to take a series of these 2D images and use them to recreate a three-dimensional (3D) model of that object. In this workshop, you will experience this process.

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# Parental Consent Form

The Seeding Your Future Conference is a one-day event aimed at increasing middle-school aged girls interest in topics related to STEM. On the registration form and during the conference, participants will be asked to complete surveys for the purpose of evaluating conference activities and interest level in STEM. Participants may also be photographed or video-taped during the conference. Survey responses, photographs, and videos may be used by the conference organizers and funding agencies for the purposes of evaluating this year's conference, professional presentations on the conference, and/or promotional materials.

Because the participants are minors, in order for the conference organizers to be able to use the responses and images/videos of the conference participants, both parental consent and assent from the minor are needed. This form, which follows federal guidelines, provides parental consent for participation in the research and promotional aspects of the conference. Declining to allow participation in these aspects does not prohibit participation in the conference.

**Study Name:** Seeding Your Future Conference

**Aim of Research Project:** Evaluate and promote the Seeding the Future Conference, evaluate participant interest level in science and math.

**Experimental Procedures:** Participants will complete surveys throughout the conference evaluating conference activities. Participants will also be video-taped and/or photographed.

**Study Duration:** All activities associated with this study will be completed as part of the conference.

**Number of Participants:** 150

**Alternate Procedures:** None.

**Confidentiality:** All information provided will be kept anonymous upon publication or presentation. However, identifiable features, like faces, may be present in the photographs and videos. Your inclusion in this research is voluntary. For further information about this research project and your rights within it, please contact Dr. Sytil Murphy at [smurphy@shepherd.edu](mailto:smurphy@shepherd.edu) or 304-876-5782.

Your participation involves no foreseeable risks and no direct benefits to you. In the event of a research related injury, please contact Dr. Jason Best, IRB chair (304-876-5331).

- I agree to allow the conference organizers to use my child's responses and images for the above purposes.
- I do not agree to allow the conference organizers to use my child's responses and images for the above purposes.

\_\_\_\_\_  
Parent/Guardian Name (print)

\_\_\_\_\_  
Parent/Guardian Signature

\_\_\_\_\_  
Date

**Any questions regarding your rights as a research participant may be addressed to the Shepherd University Institutional Review Board (Dr. Jason Best, IRB Chair, 304-876-5331). All research projects that are carried out by investigators at Shepherd University are governed by the requirements of the University and the Federal Government.**

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## Participant Assent Form

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Because the participants are minors, in order for the conference organizers to be able to use the responses and images/videos of the conference participants, both parental consent and assent from the minor are needed. This form, which follows federal guidelines, provides the attendee the opportunity to assent to participation in the research and promotional aspects of the conference. Declining assent to participate in these aspects does not prohibit participation in the conference.

**Study Name:** Seeding Your Future Conference

**Aim of Research Project:** Evaluate and promote the Seeding the Future Conference, evaluate participant interest level in science and math.

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Your participation involves no foreseeable risks and no direct benefits to you. In the event of a research related injury, please contact Dr. Jason Best, IRB chair (304-876-5331).

- I agree to allow the conference organizers to use my responses and images for the above purposes.
- I do not agree to allow the conference organizers to use my responses and images for the above purposes.

\_\_\_\_\_  
Participant Name (print)

\_\_\_\_\_  
Participant Signature

\_\_\_\_\_  
Date

**Any questions regarding your rights as a research participant may be addressed to the Shepherd University Institutional Review Board (Dr. Jason Best, IRB Chair, 304-876-5331). All research projects that are carried out by investigators at Shepherd University are governed by the requirements of the University and the Federal Government.**