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2019 WEST VIRGINIA GOVERNOR'S STEM INSTITUTE AT Green Bank  
*Faculty Application*

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**PERSONAL INFORMATION**

Name:

E-Mail Address:

Mailing Address:

Telephone Number:

**EDUCATION AND EXPERIENCE**

Degree(s)

*\*Provide information for the type of degree you obtained and the school where it was received. If you do not hold a degree listed, write N/A.*

Bachelor's Degree:

Master's Degree:

Doctoral Degree:

Teaching Certification(s):

Experience

*\*Provide information about any teaching experience you have below. List your current teaching position, and the classes you teach or have taught in the past. Current college students may list student teaching experiences, but indicate that the position was as a student teaching position and not a position as a full-time employee.*

Current Teaching Position

Math/Science/Technology Courses Currently Teaching or Have Taught:

Have you ever taught at Governor's School for Math and Science (GSMS) or Governor's Honors Academy (GHA)?      If so, list the year(s).

List any other teaching experience(s) that you feel has helped strengthen your ability to teach the kinds of students you will work with at GSI. Continue on next page.

**REFERENCES**

*\*Provide the names and contact information for two professionals who will write your recommendations OR a recommendation from Sue Ann Heatherly.*

NAME:

E-MAIL:

PHONE NUMBER:

NAME

E-MAIL:

PHONE NUMBER:

The Green Bank Observatory GSI will engage faculty in leading STEM Explorations related to the central theme of astronomy research which will incorporate computational thinking, engineering and astronomical data analysis. Additionally, faculty will be deeply engaged in mentoring a team of student researchers in their research projects. A brief description of the program can be found below.

Please describe your philosophy regarding inquiry-based teaching and strategies you will employ to mentor a student team toward a successful research experience, while fostering individual independence and student collaboration.

<p><b>IMPORTANT NOTE!</b></p> <p>This application must be submitted via e-mail to <a href="mailto:sheather@nrao.edu">sheather@nrao.edu</a> and <a href="mailto:cheryl.keffer@k12.wv.us">cheryl.keffer@k12.wv.us</a>. Please read the information below to get an idea of what this year's Green Bank Observatory program will look like.</p>
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*If you have any questions, feel free to e-mail the Green Bank Observatory GSI director Sue Ann Heatherly [sheather@nrao.edu](mailto:sheather@nrao.edu), 304-456-2209*

**2019 WEST VIRGINIA GOVERNOR'S STEM INSTITUTE**  
**Green Bank Observatory**  
**Faculty Information**

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**DATES:** Sunday, June 30 – Saturday, July 13, 2019 (staff arrive on the 29th)

**Typical Daily GSI Schedule – posted each morning**

7:00 AM	Wake-Up
7:30	Breakfast
8:15	Morning Exercise
8:45	Announcements and Sign-up for Afternoon Activities
9:00	Foundations
10:00	STEM Explorations (all students participate in each activity) <ul style="list-style-type: none"> <li>• Engineering (Group 1)</li> <li>• Scientific Digital Visualization (Group 2)</li> <li>• Computer Science (Group 3)</li> </ul>
12:15 PM	Lunch
1:15	Afternoon Seminars <ul style="list-style-type: none"> <li>• Recreational Activities (volleyball, running, swimming pool, etc.)</li> <li>• Research Projects (observations, meet with scientist, etc.)</li> <li>• Literature and art opportunities</li> </ul>
5:15	Dinner
6:00	Whole group competitions
7:00	Research Talk
8:00	Free Time (Internet, Frisbee, Phone, etc.)
8:30	Snacks
8:45	Small Group Meetings with Teachers and Mentors
9:00	Free Time
10:15	Bunk House Meeting
10:30	Lights Out

**FACULTY SALARY:** \$262/day = \$3668.00

GSI-Green Bank will consist of a two-week residential program for 60 rising ninth-graders (30 girls and 30 boys). The GSI-Green Bank program consists of several components: a central research theme of radio astronomy research, foundation talks, STEM Explorations, and enrichment activities. Below is a summary of the activities students will experience. All staff—faculty and undergraduate mentors— may be engaged in all of these activities to varying degrees.

**Central Research Theme: Radio Astronomy**

The central theme for GSI-Green Bank is radio astronomy research with extensive, supporting exposure to advanced topics in science, computing, engineering, and mathematics. For two weeks, students will be on location at the GBO and immersed in the research activities of this national research center. During their stay, they work in teams of 5 to 6 students led by a teacher and supported by a student mentor and a GBO staff scientist. Students will pursue

open-ended research problems through observations on a dedicated 40-foot diameter radio telescope, and robotic 20 Meter Telescope. At the conclusion of the GSI, the student research groups present their findings to each other, GSI staff, and GBO scientists, and guests in a formal academic colloquium that reinforces the need for ongoing research and exploration.

**Foundations Sessions.** Core concepts students can use in their research such as how astronomers analyze the electromagnetic radiation they receive at their telescopes, as well as content related to the research projects will be addressed through a combination of lectures and activities. For example, students might work with data visualization software, or participate in guided experiments with optical spectra to learn how and why celestial objects emit light and radio waves and they hear from practicing scientists about how research is done and how data is analyzed.

**STEM Explorations.** GSI-Green Bank will enhance the central research team with supplemental educational activities called STEM Explorations, which are hands-on investigative small group experiences conducted in 20-student groups in sessions over three-day periods. These sessions will introduce students to the careers that make up the Observatory beyond astronomy such as engineering, machining, and computer science. Explorations complement the primary research theme of radio astronomy and provide students with information that may assist them in understanding their research project.

**Enrichment Seminars and Whole Group Activities.** During many afternoons and evenings, GSI staff will offer a variety of enrichment experiences including guest lectures, hands-on activities, field trips, and other activities that broaden students' understanding of the role of scientific research in society and provides opportunities for students to learn a new skill or develop a new hobby.