## 2024 WEST VIRGINIA GOVERNOR'S STEM INSTITUTE AT WVU
### *Faculty Application*

**PERSONAL INFORMATION**

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|---|---|
| Name | |
| Email | |
| Mailing Address | |
| City, State, Zip | |
| Telephone/Cell Phone | |

*The theme for the 2024 West Virginia Governor's STEM Institute is "STEM Sports Stars: Unleashing the Power of Science, Technology, Engineering, and Math in Sports." The institute consists of two identical sessions—each eight days long—in which faculty can use the same plans twice (each session will host different students, so students will only learn the lessons/conduct the research one time). Altogether, each faculty member will be required to teach a class lasting 1.5 hours a day for four days (for a total of 6 hours of class time) and conduct a research project with students for 2 hours a day for five days plus an additional 5 hours on the last day of the program (for a total of 15 hours of research time). Please include a detailed day-by-day outline of what each of the four class sessions and each of the five research periods would include when you submit this application. The selection of faculty members will be based largely on the class description/research project plans submitted by those wishing to be faculty members; therefore, sufficient time should be dedicated to this portion of the application. You do not need to submit full lesson plans, but you must lay out a detailed plan that follows this year's theme in order for the selection committee to follow your idea.*

NOTE: If you have taught at GSI, you do not need to complete the sections below titled "Education and Experience" and "References."

## EDUCATION AND EXPERIENCE

<u>Highest Degree</u>: *Provide information for the type of degree(s) you have earned and the school(s) where they were received.*

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Teaching Certification(s):

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<u>Experience:</u> *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 please indicate that the position was as a student teaching position and not a position as a full-time employee.*

Current Teaching Position:

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

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Have you ever taught at a WV Governor's School?  If so, list the year(s) and the school(s).

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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.

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**REFERENCES** *Provide the names and contact information for two professional references.*

| | |
|---|---|
| Name | |
| Email | |
| Phone Number | |
| Name | |
| Email | |
| Phone Number | |

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### IMPORTANT NOTE!
This application must be submitted via email to ggibson@k12.wv.us and by **January 31, 2024**.
Please read the information below to get an idea of what this year's GCSI program at WVU will look like.

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*If you have any questions, please feel free to email the WVU GSI directors…*
Gretchen Gibson (ggibson@k12.wv.us) or Bill Gibson (wgibson@k12.wv.us)

**All faculty members working with students at GSI must have a background check completed and on file with the university.**

# 2024 WEST VIRGINIA GOVERNOR'S STEM INSTITUTE AT WVU
## Faculty Information

**DATES:**
  Session One: July 6, 2024 – July 13, 2024
  Session Two: July 14, 2024 – July 21, 2024

**DAILY SCHEDULE:**
  Breakfast: 7:30a.m.-8:30a.m.
  Class One: 8:30a.m.-10:00a.m.
  Break: 10:00a.m.-10:15a.m.
  Class Two: 10:15a.m.-11:45a.m.
  Break: 11:45a.m.-12:00p.m.
  Lunch: 12:00p.m.-12:45p.m.
  Research Time: 1:00p.m.-3:00p.m.
  Afternoon Activity: 3:00p.m.-5:00p.m.
  Dinner: 5:00p.m.-6:30p.m.
  Evening Activity: 6:30p.m.-9:00p.m.

> THE STUDENTS IN THE TWO CLASSES WILL BE DIFFERENT STUDENTS; THEREFORE, TEACHERS MAY WRITE ONE LESSON PLAN AND USE IT FOR BOTH CLASSES EACH SESSION.

> FACULTY IS GIVEN FREE TIME DURING AFTERNOON ACTIVITIES.  FACULTY MUST ATTEND SOME, BUT NOT ALL, EVENING ACTIVITIES.

  **\*NOTE:** The last full day of each session will not include class time.  Morning and afternoon will be dedicated solely to research time.

**FIELD TRIPS:**
  There will be a field trip to Kennywood Amusement Park near Pittsburgh for each session.  GSI will leave for the park after lunch and return around 11pm.  Faculty members must be present the entire day to supervise students on both field trips.

**SALARY:**
  Faculty will be paid $350 per day (TOTAL PAY: $5600 for 16 days) for teaching at GSI at WVU.

  **2024 THEME:** STEM Sports Stars: Unleashing the Power of Science, Technology, Engineering,   and Math in Sports
   \*Class and research plans need to center around the theme.

**CLASS/RESEARCH TIME:**
- While class and research materials should both be focused on the program's theme (which must include math and/or science applications), faculty will have a different roster of students in their classes than their research groups.  Therefore, the material taught in class and the research project do not have to be directly connected.
- **CLASS LESSON PLANS**
    - Lesson plans should be structured with a definite plan for the students and teacher to follow during each 1.5-hour session.  However, they should <u>NOT</u> resemble a traditional lesson plan (with lectures and notetaking).  This is an

extension program in which students should be learning through the use of hands-on exploration and application of concepts.
- o Each faculty member is allotted money to purchase materials needed for class (the GSI directors will purchase the materials and have them available for teachers on a daily basis). Materials will be purchased before the program begins and then on a regular basis as needed as the program progresses.
- o The same class lesson plans may be used for the 8:30-10:00a.m. and 10:15-11:45a.m. class times (the students will be different for the two timeframes) and for both sessions (Session One and Session Two) of the program.
- o Each class will have between 6-10 students.
- ● **RESEARCH TIME LESSON PLANS**
  - o Lesson plans should include a project idea for students to research and then produce a finished product to showcase for parents and students on the last day of the session. Faculty may select the project idea or may allow students to be involved in coming up with their final product to present on the last day; however, if students will be selecting the project, faculty must provide a narrowed down focus of what the research project will include and how they will guide students in determining what the project will be.
  - o Each faculty member is allotted money to purchase materials needed for research (the GSI directors will purchase the materials and have them available for teachers on a daily basis). Materials will be purchased before the program begins and then on a regular basis as needed as the program progresses.
  - o The same project idea/presentation may be used for both sessions of the program. However, if students are selecting their own research project, teachers may do different projects for each session.
  - o Each research group will have between 6-10 students.

**SAMPLE CLASS LESSON PLANS/RESEARCH PROJECTS:**
As a guideline to help with this application, below is a description of the class/research project that was created and used by a faculty member to follow the theme "Amusement Parks and Fairs." Please note that this is just a short description of what was completed during GSI; when submitting the application, applicants need to give a day-by-day breakdown of what they plan to do with students in addition to an overview of the class and research "big idea."

**CLASS:** Students explored various mathematical models for representing data (polynomial, exponential, piecewise, and step functions) and learned about rate of change in the real world. They explored applications of rate of change in terms of algebra (slope) and calculus (derivatives) and used the concepts to look at velocity and acceleration in the setting of designing amusement park rides.

**RESEARCH:** Students used mathematics and the concepts of position, velocity, and acceleration to design roller coasters using various materials.
Students worked in groups of 2-3 people, and they were told that the goal was for a marble to take a 30-second roller coaster ride that included turns

and drops.  Students researched roller coaster design and safety and then made their own roller coasters.  Groups presented their roller coasters to local businesses in an attempt to "sell" their designs.  A representative from each business scored the groups using a scoring rubric (designed by the students to rank each roller coaster).  The highest scoring group was awarded the "contract" to build the roller coaster for the amusement park.  Students presented their roller coasters, rubrics, and pictures/written commentary of the roller coaster design process on the last day of the
session for parents/other students to see.