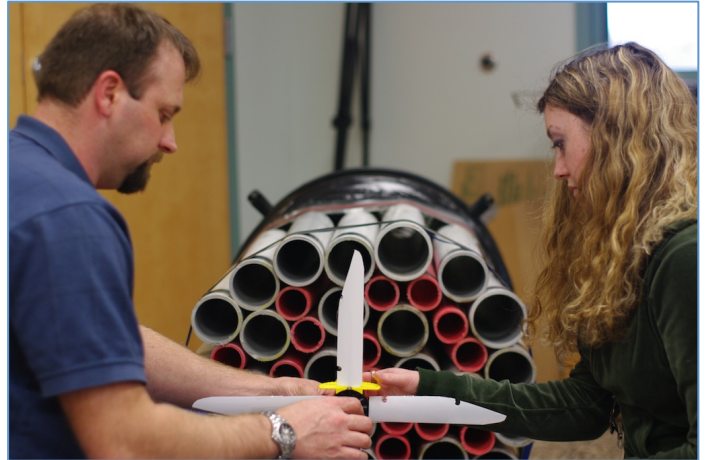
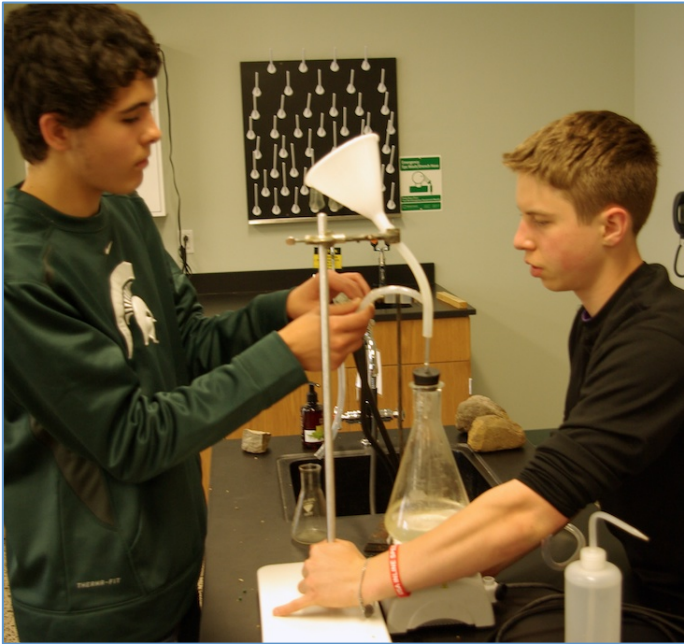


NYSF *Youth Science Discovery Experience:*



The **Youth Science Discovery Experience** is a semi-residential honors program focused on research projects in various fields. YSDE also offers broader exposure to science careers through lectures from visiting scientists. The pilot and second session were funded by a grant from the National Aeronautics and Space Administration.

The **National Youth Science Foundation®**, Inc. is a nonprofit 501(c)(3) corporation that provides informal science education for secondary school students through the National Youth Science Camp®, the West Virginia Youth Science Camp, and the Green Bank session of the West Virginia Governor's School for Math and Science.

Mission

The Youth Science Discovery Experience exists to connect high school students and teachers with scientists and research, bridging the gap between the traditional classroom and real-world science in the field and in the lab, and opening students' eyes to new perspectives and paths toward scientific careers.

Program Elements

Research Teams: A YSDE cohort consists of forty students and five mentors, organized into five research teams. Students are the researchers, and mentors help provide leadership. Each team consults with a scientist who introduces the project and helps along the way.

Research Projects: The research project is the focal point of the YSDE program. Each team works on a unique project throughout the program. A scientist provides guidance and technical assistance, but the team ultimately makes its own decisions on project strategies and conducts its own research.

Lecture Series: The Youth Science Discovery Experience includes a lecture series that introduces science careers, highlights scientific methods and principles, and exposes students to topics they may not encounter in the typical classroom curriculum.

Whole-Group Activities: In addition to working on small group research projects, the cohort comes together for whole-group activities that emphasize problem solving and develop science reasoning skills to support the research projects.

Seminars: Each afternoon the YSDE staff offers a variety of informal presentations in arts, science, and recreation. Seminars are required, but students have their choice of topics. Seminars serve to balance the focused research element of YSDE with exploration of new ideas and activities. Topics may be academic, artistic, recreational, or interdisciplinary.

Field Trips: YSDE takes place in a unique natural setting, surrounded by wildlife refuges, state parks, and national forests. Outdoor field trips offer breaks from the rigorous academic work of preparing research presentations. Backcountry trips also serve to strengthen relationships among traveling companions and develop leadership skills and confidence.

Colloquium: The research colloquium is the academic culmination of the Youth Science Discovery Experience. Each group presents its project results through a live presentation and a summary poster at the conclusion of the program.

Program Overview:

The Youth Science Discovery Experience includes 10 days of intensive programming divided between two sessions during a semester. The opening and closing sessions are five days each.

Session 1 (March 20-24): Students arrive in Canaan Valley for orientation. Research projects are introduced, and teams consult with scientists to plan strategies and begin work. Whole-group activities emphasize the scientific method and research tools, while lectures and seminars offer opportunities for exploration.

Session 2 (April 24-28): Students regroup and share project work they have done since the opening session. Lectures, whole-group activities, and afternoon seminars balance focused research with broader perspectives. Teams wrap up their research and prepare presentations. The research colloquium is the capstone of the closing session.

Logistics

Facilities and YSDE Environment

YSDE facilities include laboratories, a computer center, and conference space located along the Blackwater River in Tucker County, West Virginia. The area provides an outstanding natural lab for teaching and fieldwork.

Meals

Breakfast is served at the hotel. Lunch and dinner are served at Canaan Valley Institute and catered through local businesses.

Transportation

NYSF will cover all shuttling costs within the program. Participants are responsible for their transportation to and from the program.

Typical Daily Schedule

7:00am	Wake up
8:00	Breakfast
9:00	Bus to Canaan Valley Institute
9:30	Research team meetings and project work
12:30pm	Lunch
1:30	Seminar Block 1
3:00	Seminar Block 2
4:45	Whole-group inquiry
6:00	Dinner
7:00	Science talk
9:00	Bus back to rooms
10:30	Bathroom time (students in their own rooms)
11:00	Lights out



A YSDE student filters sediment for a watershed modeling project.

Whole-Group Activities

Whole-group activities at YSDE can take any form that helps develop reasoning and problem solving skills and facilitates thoughtful discussion. These generally involve using games, puzzles, logic, and inquiry in fun, creative ways.

Seminars

Informal afternoon seminars at YSDE help balance the long-term focus of the research projects with opportunities to explore new ideas and activities. Some seminars are intellectual, some introduce crafts or new skills, and some involve physical and outdoor activities. Highlights have included:

Structural Geology	Mountain Biking
Yoga	Snowshoeing
Irish Dance	Archery
Knitting/Crocheting	Non-Newtonian Fluids
Geocaching	Cupcake Decoration
Owl Pellet Dissection	Snow Cuisine: Ice Cream and Maple Candy
Historical/Sight-seeing Field Trips	How to Read Poetry

Outdoor Program

The YSDE outdoor program takes participants into the woods for a variety of activities including hiking, mountain biking, and snowshoeing. While personal gear is welcome, the only equipment participants need to provide for themselves is clothing, boots, and rain gear.

YSDE staff lead the outdoor trips, sometimes joined by scientists. Orientation and support are available for those longer on interest than expertise.

Research Colloquium

The Youth Science Discovery Experience concludes with the research colloquium. Each team presents results and outlines potential questions for future research. Throughout the program, participants come to recognize that scientific research is more about process than product, and that scientific knowledge is dynamic, representing the best we know so far based on the available information. The presentations are formal progress reports that show what questions have been asked, how they were pursued, what conclusions the research yielded, and what new questions were discovered along the way.

The colloquium is open, and friends and family are welcome to join YSDE participants and scientists for the event. Certificates for YSDE participation are presented in a brief closing ceremony after the colloquium, and a farewell luncheon follows before students depart.

Application Process

The Youth Science Discovery Experience uses a common application for student participants and teacher staff. Teachers working for YSDE will receive a stipend for supervisory and programming responsibilities. Please complete the General Application online and email supporting documents. Reference letter should be sent by post or email from the author. The completed YSDE application includes four parts:

1. General Application (http://nysfoffice.org/YSDE_App/addrecord)
2. Letter detailing your qualifications and reasons for applying.
3. A resume detailing your academic achievements, coursework, and extra-curricular activities
4. A letter of support from a teacher or research mentor (for students) or from a principal or superintendent (for teachers). Hard copy or email from the reference is acceptable.

Application details are available at www.ysde.org or by contacting YSDE director Josh Stevens at josh.stevens@nysf.com.

