

# NATIONAL CENTER FOR YOUTH SCIENCE EDUCATION

*Envisioning the STEM Education Center*



**NATIONAL YOUTH SCIENCE FOUNDATION®**

P.O. Box 3387 \* Charleston, WV 25333-3387 \* [www.nysf.com](http://www.nysf.com) \* (304) 205-9724

Cover Photos	Description
<b>Top</b>	Exterior, front view of the Canaan Valley Institute Research and Education Center showing the storm-water constructed wetland.
<b>Middle Left</b>	Youth Science Discovery Experience students work with Ed Watson, Hydrologist at the Canaan Valley Institute on a stream restoration project at CVI.
<b>Bottom Left</b>	A Youth Science Discovery Experience student works on the design of a wind turbine at the Canaan Valley Institute.
<b>Bottom</b>	Youth Science Discovery Experience students launch a rocket they constructed at the Canaan Valley Institute.

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The **National Youth Science Foundation**<sup>®</sup> (NYSF), Inc. is a nonprofit 501(c)(3) corporation established in 1983 to provide **Science, Technology, Engineering, and Mathematics**-focused programs for students from all across the country and around the world.

The NYSF's flagship program, the **National Youth Science Camp**<sup>®</sup>, was first held in 1963 and now spans more than 50 years of service to the STEM community. The NYSC is a four-week session in the mountains of West Virginia that combines some of the brightest students in the country with accomplished scientists for lectures and outdoor adventures. Many students return later in their own STEM careers as guest presenters and perpetuate the traditions of the camp.

### **Mission Statement**

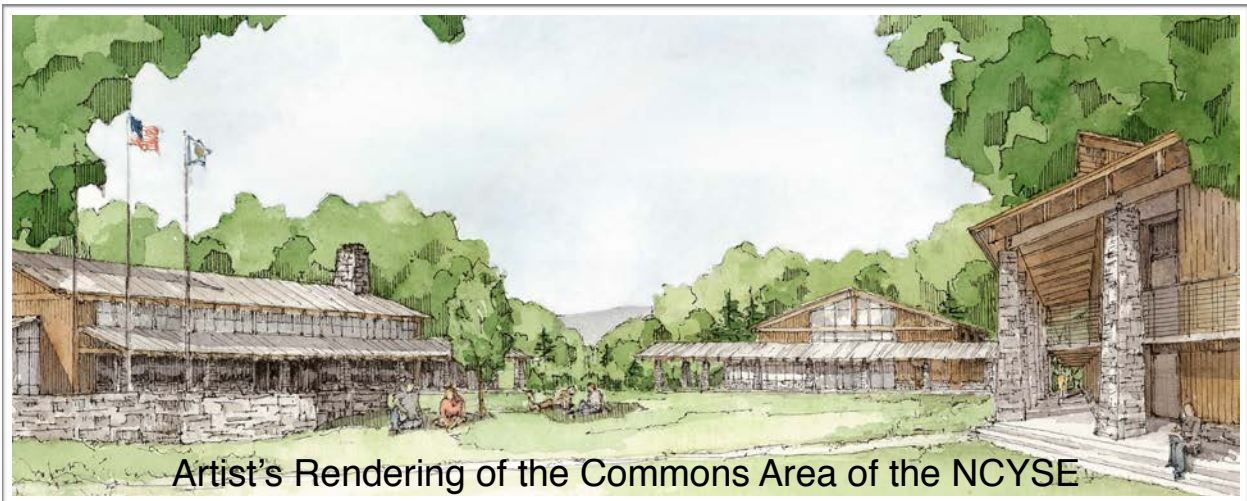
The mission of the National Youth Science Foundation is to inspire lifelong engagement and ethical leadership in science, technology, engineering, mathematics, and related professions through its proven educational model for mentoring, challenging, and motivating students. By building communities among students, teachers, and professionals, NYSF programs bridge the gap between the traditional school curriculum and careers in science, technology, engineering, mathematics, and related professions.

## National Center for Youth Science Education

In the 1980s, the National Youth Science Foundation (NYSF) committed to a bold plan to construct a National Center for Youth Science Education (NCYSE). The NCYSE will allow the NYSF to expand and improve its programs and become a focal point that encourages and inspires youth to pursue education and careers in science, technology, engineering, and mathematics (STEM).

In 2009, after a decade-long search, the NYSF purchased 111 acres alongside the Blackwater River near Davis from the Canaan Valley Institute (CVI) to serve as the future home of the NCYSE. This purchase agreement included assurances from CVI that the NYSF would have first-right of use of CVI facilities in the event that they became available and required important action by the NYSF set forth below. This agreement was a key facet in planning the future facility.

In 2010 the NYSF published its *NCYSE Master Plan* that called for the construction of critical spaces in support of the NYSF's flagship program, the National Youth Science Camp (NYSC) and other, new STEM-focused programs. See <http://masterplan.nysf.com> to review this master plan.



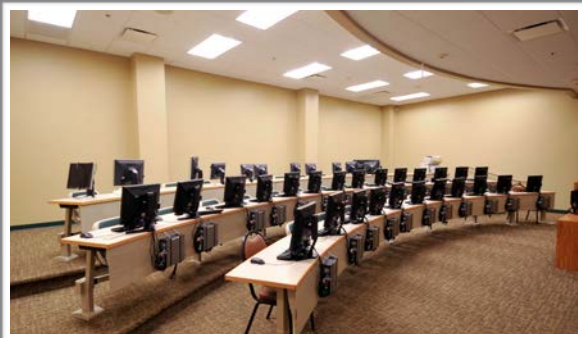
As required, the NYSF worked to develop access to its property. In 2015, a bridge linking Camp 70 Road to the south side of the Blackwater River will be constructed. This will provide important access to the NYSF's property and the Splash Dam South Trail of the Heart of the Highlands Trail System. Additional connection to the Little Canaan Wildlife Management Area is possible.

## Disposition of the CVI Facilities

In 2009, with funding from the National Oceanographic and Atmospheric Administration (NOAA), CVI completed construction of two buildings: the **Research and Education Center** and the **Research Support Building**.

### Research and Education Center

- **LEED Certified** by the United States Green Building Council
- **Conference Hall** (3,500 ft<sup>2</sup>) for 120 people (dividable)
- **Research Laboratory** (1,000 ft<sup>2</sup>) research laboratory capable of supporting 4 independent researchers
- **Teaching Laboratory** (1,000 ft<sup>2</sup>) for as many as 17 students
- Tiered 39-station **Computer Laboratory** (1,500 ft<sup>2</sup>)
- Within the 2,500 acre **Little Canaan Wildlife Management Area**
- Located near the **Canaan Valley National Wildlife Refuge**



Recently, CVI advised NOAA that financial pressure and limited business options required CVI to be relieved of its responsibilities in operating and maintaining these buildings and property. Based on the standing agreement with CVI, the NYSF immediately petitioned NOAA requesting that

the NYSF be selected as the steward of this important education facility so that the NYSF could advance its plans to develop STEM education programs as a critical step towards the National Center for Youth Science Education.

While NOAA acknowledged in 2009 the NYSF's right to use by virtue of its agreement with CVI, NOAA has provided the United States Fish and Wildlife Service the first opportunity to the CVI facilities.



## STEM Education Center

Consistent with the NYSF's long-term objective to develop the NCYSE on its property adjacent to CVI, the NYSF would transform CVI's research and education facilities into the **STEM Education Center**. Located within a ten-minute walk from the NYSF's planned NCYSE, the STEM Education Center would accelerate the NYSF's move to Tucker County and permit the NYSF to operate STEM education programs there as soon as 2016.



## Programs and Plans

The NYSF has extensive experience in operating STEM education programs in West Virginia, including:

- National Youth Science Camp (1963 to present)
- WV Governor's School for Math & Science (2005 through 2014)
- WV Youth Science Camp (1994 and 1995; 2011 to present)
- Youth Science Discovery Experience (2010 through 2014)<sup>1</sup>
- Youth Science Leadership Institute (2002 and 2006)
- Community Science Seminar (2002 and 2003)

Over its more than 50-year history, approximately 6,000 students have participated in NYSF programs, including:

- Marissa Mayer - President and CEO of Yahoo!
- Wes Bush - CEO and President Northrop Grumman Corporation
- Robert Mercer - Co-CEO of Renaissance Technologies
- David Thompson - Chairman, President, and CEO of Orbital Sciences Corporation

The NYSF expects to develop financial support through public and private initiatives to complete the necessary improvements at CVI and the NCYSE. The NYSF anticipates requesting to be recognized as a Regional Network Hub in the West Virginia STEM Network as proposed by the Governor's STEM Council. A Regional Network HUB serves as the nucleus of STEM activity within a geographic region.

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<sup>1</sup> Held at the Canaan Valley Institute.

According to the Governor’s STEM Council Report, “The goal of a HUB is to amplify and accelerate the impact of existing STEM programs within a particular region. It is designed to support STEM programs and schools, increase the ability of existing STEM assets to generate regional impact, grow linkages between and support of existing STEM assets in a region, identify gaps in the system, and connect other STEM initiatives to that region’s STEM efforts.”



## **Economic Impact**

The NYSF envisions two stages of development of the National Center for Youth Science Education in Tucker County.

### **Stage One (completed by 2016)**

CVI facilities would be transformed into the STEM Education Center and enhanced to annually support the National Youth Science Camp, one or two other summer programs, and additional activities throughout the year. Milestones would include:

- Securing sufficient funds (approximately \$2,000,000) to complete renovations and and construction.
- Construction of robust, temporary, seasonal housing (capacity 200).
- Renovating or constructing sufficient sanitary services.
- Enhancing food service capability to provide 200 meals, 3 times per day.
- Reconfiguring CVI office space to provide education space during the summer and indoor housing for as many as 40 students during the winter.
- Designating the STEM Education Center as a Hub in the West Virginia STEM Network as proposed by the Governor’s STEM Council.

### ***Impact of Stage One***

- Annually serve approximately 1,000 students.
- Create 40 seasonal jobs.
- Create 10 to 20 year-round jobs ranging from the service sector (food service, maintenance, etc.) to professional. Some of these positions would be filled by current Tucker County residents.

## **Stage Two (2016 - 2020)**

Remaining facilities would be constructed. Milestones would include:

- Securing sufficient funds (approximately \$30,000,000) to complete NCYSE improvements and construction of facilities.
- Extending utilities to the NYSF property on the south side of the Blackwater River.
- Construction of permanent, four season facilities including the dining hall; student, staff, and guest housing; and other improvements identified in the NCYSE Master Plan (<http://masterplan.nysf.com>).

### ***Impact of Stage Two***

- Annually serve approximately 3,500 students.
- Create 40 seasonal jobs.
- Create 20 to 30 year-round jobs ranging from the service sector (food service, maintenance, etc.) to professional. Some of these positions would be filled by current Tucker County residents.

## **Multiplier**

NYSF facilities and programs will have a lasting and expanding positive economic impact on the Tucker County community. The NYSF has operated sessions of the Youth Science Discovery Experience at the Canaan Valley Institute. As the NYSF's presence grows, so will the economic impact - both through employment opportunities and services.

## **Potential Adverse Consequences**

If the NYSF is not allowed full access to the CVI facilities:

- Development of the NCYSE will be significantly delayed and potentially jeopardized.
- It will be necessary to fully fund, develop, and construct the NCYSE before moving NYSF programs to Tucker County.
- Concerns remain over potential access to utility extensions (currently available on CVI property) as well as access to NYSF property via CVI roads that connect to WV Route 93 (Corridor H).

## **Important Contact Information**

### ***Tucker County Commission***

<http://www.tuckercountycommission.com>

211 First Street, Suite 307

Parsons, WV 26287

(304) 478-2866 ext. 207; Fax (304) 478-2446

E-mail: Joel Goughnour, tuckergwa@gmail.com

### ***Dr. Kathryn D. Sullivan***

Administrator, National Oceanographic and Atmospheric Administration

Under Secretary of Commerce for Oceans and Atmosphere

National Oceanic and Atmospheric Administration

1401 Constitution Avenue, NW

Room 5128

Washington, DC 20230

### ***Mr. Edward C. Horton***

Chief Administrative Officer

National Oceanographic and Atmospheric Administration

1305 East West Highway

Silver Spring, MD 20910

### ***Secretary Sally Jewell***

United States Department of the Interior

1849 C Street NW

Washington, DC 20240

### ***Honorable Jay Rockefeller***

United States Senate

531 Hart Senate Office Building

Washington, DC 20510

(202) 224-6472; Fax (202) 224-7665

<http://www.rockefeller.senate.gov/public/>

### ***Honorable Joe Manchin III***

United States Senate

306 Hart Senate Office Building

Washington, DC 20510

(202) 224-3954; Fax (202) 228-0002

<http://www.manchin.senate.gov/public/>



***Honorable Shelly Moore Capito***

United States House of Representatives  
2366 Rayburn H.O.B.  
Washington, DC 20515  
(202) 225-2711; Fax (202) 225-7856  
<http://capito.house.gov>

***Honorable Earl Ray Tomblin***

Office of the Governor of West Virginia  
1900 Kanawha Boulevard, East  
Charleston, WV 25305  
(304) 558-2000 or (888) 438-2731  
<http://www.governor.wv.gov/>

***Dr. Michael J. Martirano***

State Superintendent of Schools  
1900 Kanawha Boulevard, East  
Charleston, WV 25305  
(304) 558-2681  
[superintendent@wvde.state.wv.us](mailto:superintendent@wvde.state.wv.us)  
<http://wvde.state.wv.us/superintendent/>

***Ronald G. Pearson***

Chairman, Board of Trustees  
National Youth Science Foundation  
P.O. Box 1065  
Charleston, WV 25324  
(304) 347-3238

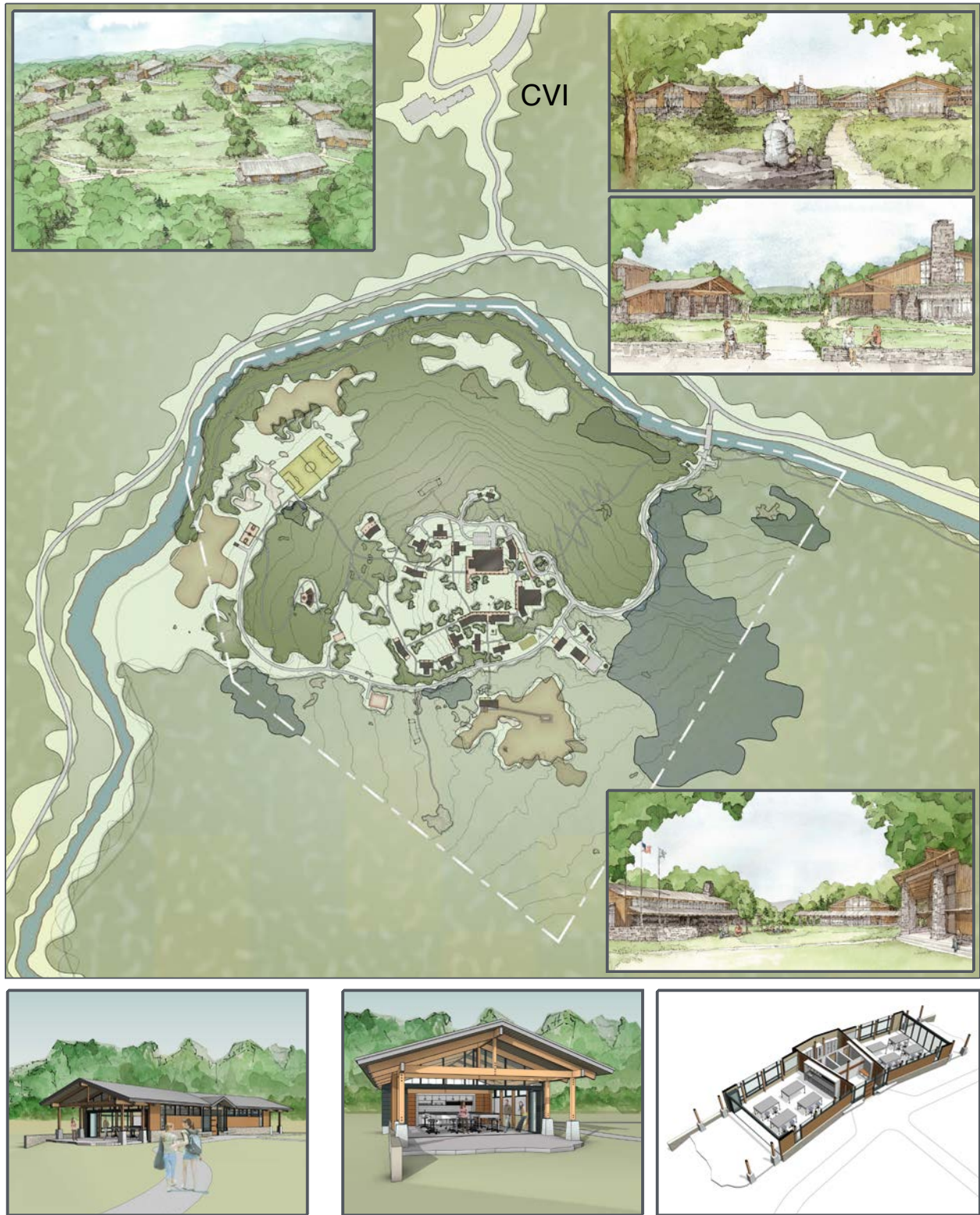
***Dr. Andrew N. Blackwood***

Executive Director  
National Youth Science Foundation  
P.O. Box 3387  
Charleston, WV 25333-3387  
[andrew.blackwood@nysf.com](mailto:andrew.blackwood@nysf.com)  
(304) 205-9724



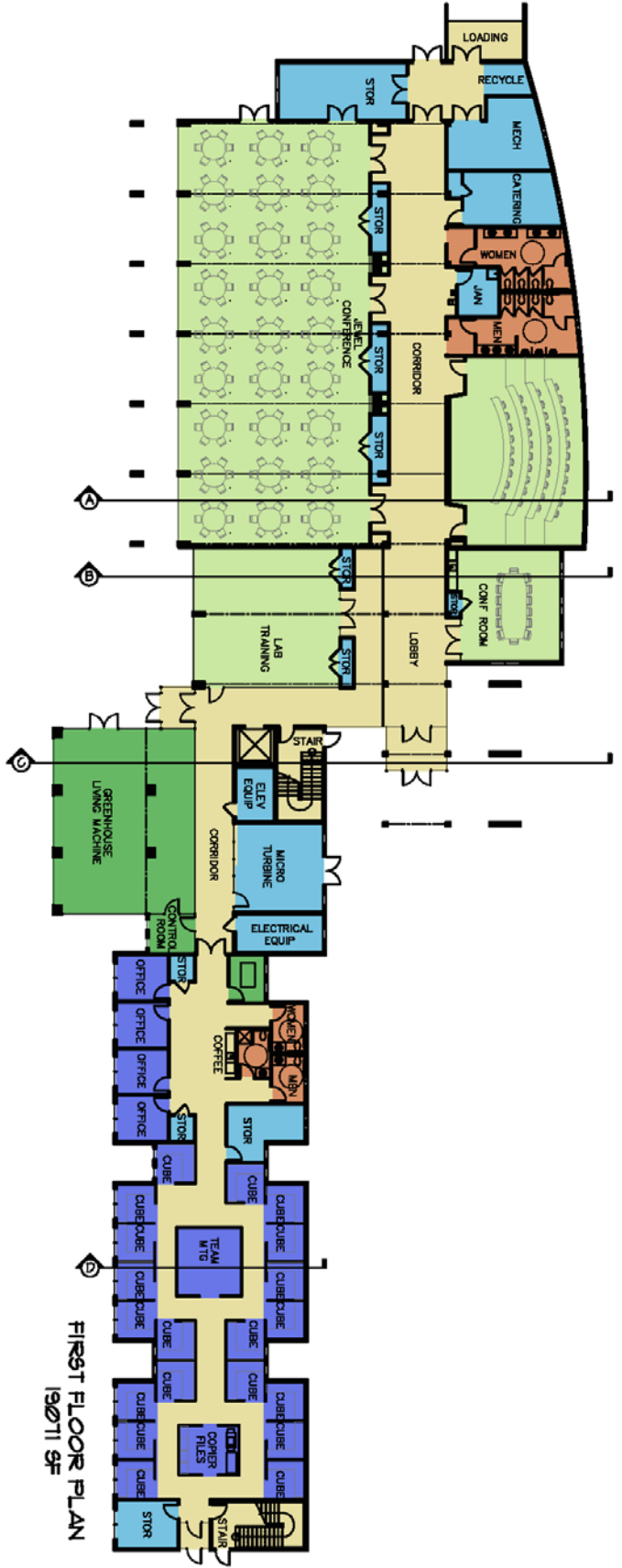
# Diagrams, Maps, and More

National Center for Youth Science Education (<http://masterplan.nysf.com>)



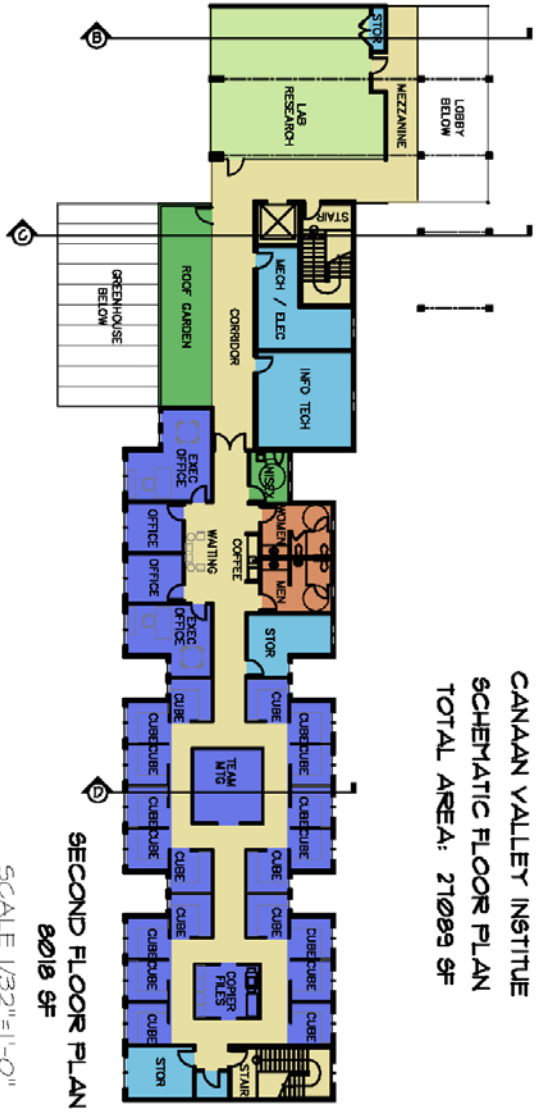
# Canaan Valley Institute Overview





FIRST FLOOR PLAN  
19071 SF

Portions of the second floor of the Research and Education Center would be converted to four-season housing for year-round STEM programs.



SECOND FLOOR PLAN  
8018 SF

SCALE 1/32"=1'-0"

CANAAN VALLEY INSTITUTE  
SCHEMATIC FLOOR PLAN  
TOTAL AREA: 27089 SF