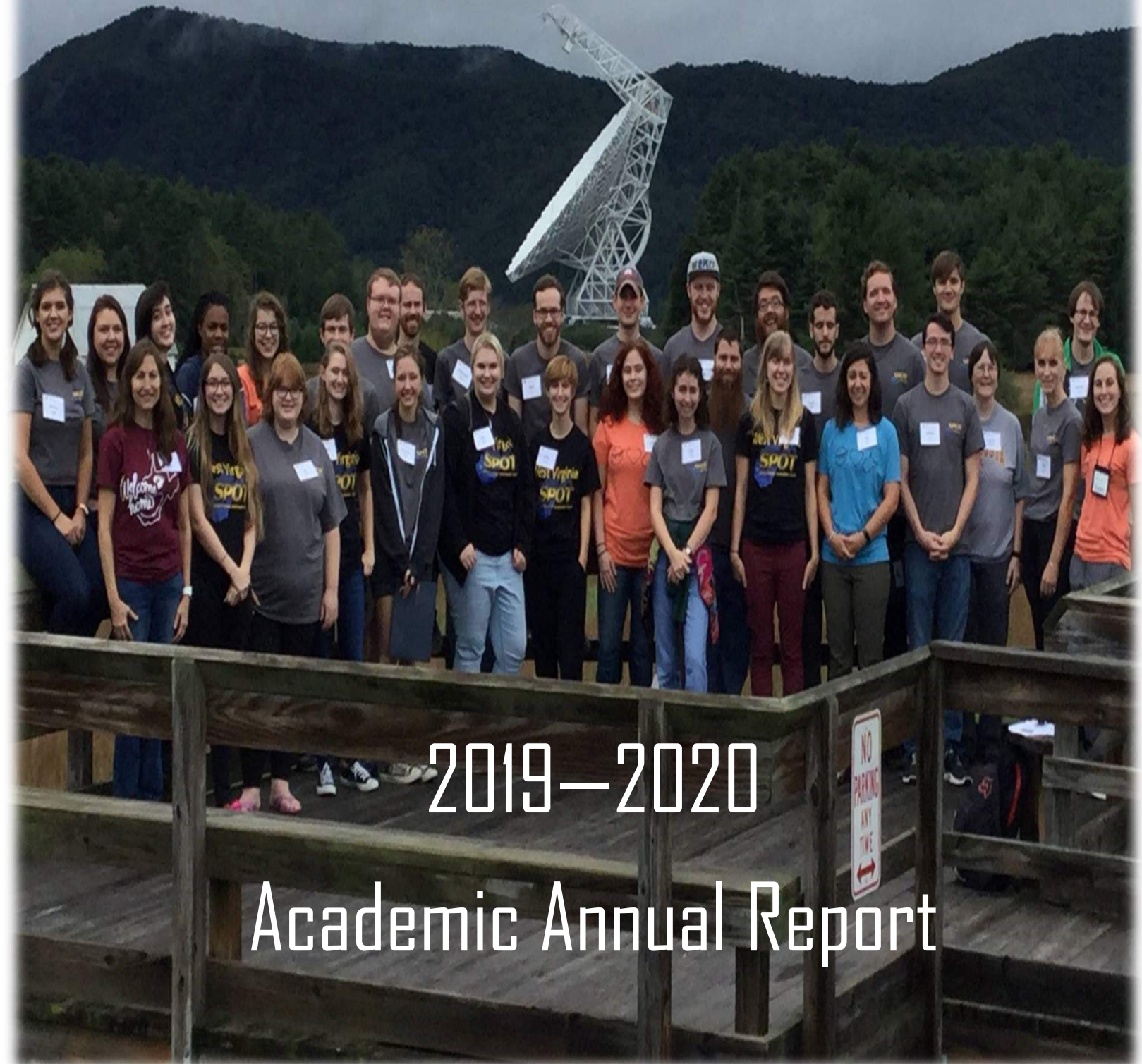


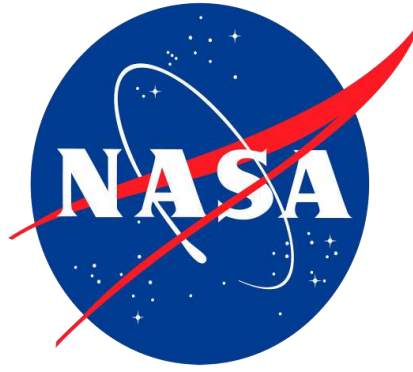


# NASA WEST VIRGINIA SPACE GRANT CONSORTIUM



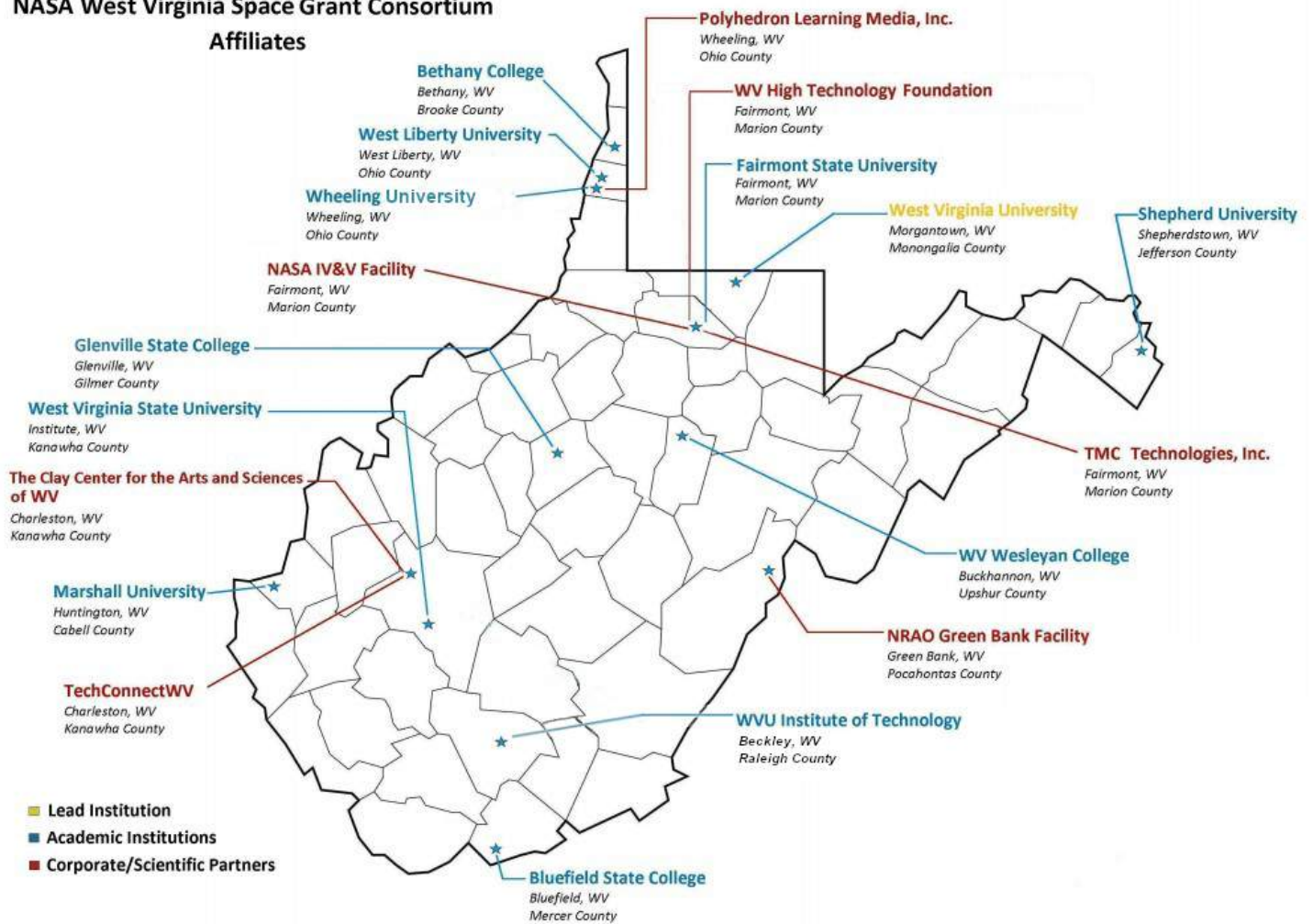
2019—2020

Academic Annual Report



# OUR NETWORK

## NASA West Virginia Space Grant Consortium Affiliates



## Share your Story!

West Virginia University  
P.O. Box 6070  
Morgantown, WV 26506-6070





# OUR SUCCESS

## Cordgenics LLC – A West Virginia Clinical Stage Biotech Company

Cordgenics LLC is a biotech company with a novel drug screening platform technology developed at Marshall University in West Virginia. The company specializes in growing three-dimensional human tumor tissues to evaluate which chemotherapies are likely to help specific cancer patients. The initial research for the platform technology began with seed grants from the West Virginia Space Grant Consortium that led to research collaboration with the Cellular Biotechnology group at the NASA



Johnson Space Center. Pilot grant funding from the Johnson Space Center provided research opportunities to undergraduate and graduate students to validate the platform technology for the generation of pre-clinical data for developing precision medicine tools for cancer treatment.

The company has developed an innovative technology platform for culturing adult stem cells for tissue engineering purposes, and to enrich cancer stem cells from tumor biopsies for high-throughput drug screening applications for the development of individualized cancer treatments. The company is in the clinical stages of developing anticancer drug therapies targeting tumor stem cells to expand the range of treatment options for recurrent ovarian and brain cancer patients. The company was founded by Marshall University professors, Drs. Jagan Valluri and Pier Paolo Claudio with the help of grants from the NASA WV Space Grant Consortium and other sources of funding.

*The following statistics represent the direct student and community engagement throughout the state for the academic year 2019—2020 . All of the students, educators, and community members participated in a WVSGC funded program.*

211

K-12  
Educators

13k+

People reached via  
community events

19 %

Minority student  
Participants in HE

10k+

K-12 student  
Engagement

# WHO WE ARE

The West Virginia Space Grant Consortium (WVSGC) is a National Aeronautics and Space Administration (NASA) sponsored organization established in August 1991 that focuses on research, collaborations with high-technology industries, student fellowships, as well as K-12, and public outreach programs.

*Dedicated to building research infrastructure and the promotion of Science, Technology, Engineering and Math (STEM) education in West Virginia*

## OUR STUDENTS

WVSGC provides students the opportunity to apply for summer internships at both a state and national levels. This past year, we had 19 students placed at five different NASA Centers, and other locations within the State such as Pratt & Whitney Engine Service, Bridgeport, WV, NRAO, Green Bank, and the Clay Center for the Arts and Sciences in Charleston, WV. Ellie White, a Physics major from Marshall University, spent her summer at Green Bank Observatory. Her project focused on working with radio systems to create and train machine learning based detection algorithms. Not only has she presented at the annual WVSGC Board meeting, she was invited to give a TedX Talk by the Marshall University Tedx organization. She has recently accepted a summer internship at University of California, Berkley!

Outside of internships, WVSGC offers undergraduate

and graduate fellowships to students seeking research projects with the guidance of a faculty advisor.

*"I am thankful that I received this opportunity to further my skills and learn ways to incorporate robotics into my future career. This was a wonderful experience and a once in a lifetime opportunity." - Charis Boyer, Fairmont State University*

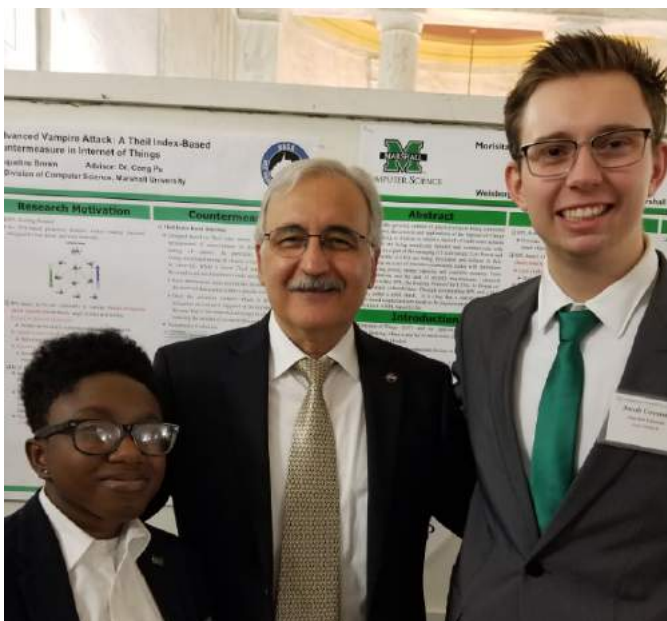
164

Student Research Awards and NIF

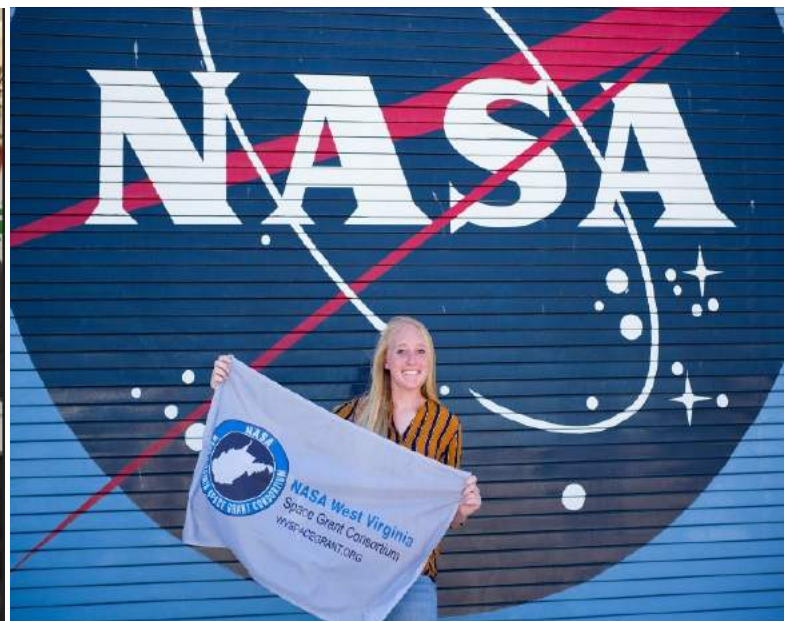
49%

Female student Participants

**Dr. Jaridi meeting WVSGC scholars at Undergraduate Research Day at the Capitol.**



**Eleanor Kearny, WVU undergraduate, standing in front of the NASA meatball at the Ames Research Center, California.**





# OUR RESEARCHERS



## Project AR

Nima ShahabShahmir, a student at West Virginia University Institute of Technology (WVU IT), was awarded an undergraduate fellowship from NASA WVSGC. During that time, he developed an app that uses Augmented Reality as an educational tool that he's temporarily dubbing, "Project AR". The app is designed to allow students to experience augmented reality as a component of their day-to-day coursework. The idea came from when Nima realized that many schools were seeking funding for tablets, but nearly all teenagers today have a smartphone. Some examples of what Nima wants to implement into his app includes visually showing molecules, anatomy, and biology. "If this can help students better grasp STEM lessons in a cost-effective way for teachers, then I'm going to do what I can to make it work," he said. After getting started through the WVSGC, Nima has garnered support from WVU's LaunchLab and presented his current work at WVU's Demo Day.

*You can learn more about Sheen AR on social media: Sheen AR on Facebook: [www.facebook.com/SheenProjectAR/](http://www.facebook.com/SheenProjectAR/)*

**33 seed grants to faculty members (23 males, 10 females) in STEM disciplines from 12 colleges and universities, including the only two MSIs in West Virginia.**

**A team photo of the WVU Experimental Rocketry club at the Spaceport America Cup Award Ceremony.**



**RockSat-C launch from Wallops Flight Facility as part of Space Flight Design Challenge.**



# OUR EDUCATORS

**NASA Space Day** Every year, WVSGC holds an annual NASA Space Day event, inviting middle school aged youth to participate in hands-on STEM activities. This year, the Clay Center for the Arts & Sciences hosted the event. Over **400 students** attended the event from surrounding schools. The theme for this year was “Be an Astronaut”. Representatives from the NASA Katherine Johnson IV&V Facility, the Clay Center, Robert C. Byrd Institute, SMART Centre, and WVSU CASTEM held activities for students.



Students from Madison Middle School are preparing to test their design and launch their lunar lander.

## STEM Literacy Workshop

*“It is always great to refresh myself with new ideas and sharing with colleagues.” - comments from teacher evaluations regarding the STEM Literacy Workshop lead by Elizabeth Strong– SMART Center, Wheeling, WV.*

The workshop consisted of three days of integrated STEM and literature activities for grades K-5. Teachers were from Hancock, Brooke, Ohio, Marshall, and Wetzel counties.

**ThinSat Launch** The Monongalia Meteors, a group of 3-5th graders, were the **first elementary school to have a space flight mission** to study UV radiation. The team, led by Mr. Marcus Fisher, of NASA Katherine Johnson IV&V Facility, met weekly for the past year to reach their goal. Their payload traveled on the Cygnus NG-11 rocket which is a resupply rocket for International Space Station. Congratulations to the Monongalia Meteors!

**Rocket Girls** The Rocket Girls program was a week long camp at West Virginia State University where middle school students designed, built, and launched their own model rocket. It was designed to increase the number of girls interested in the fundamentals of rocket flight and how amateur model rocketry can be used as a starting point to practice skills and techniques for building larger rockets.

**Two middle school girls, Olivia Smith and Kaitlyn Gooch, designing their rocket for Rocket Girls.**

**A First Lego League team from Green Bank, competing at the World Invitational.**

