

# 2019-2020 DELAWARE VALLEY SCIENCE FAIRS

[www.dvsf.org](http://www.dvsf.org)

## What's Inside

### **2020 PROGRAM UPDATE**

2020 presented DVSF with unprecedented challenges and opportunities. Learn how the organization responded.

### **PROGRAM SPOTLIGHT**

Learn about the Teacher Professional Development Program and the ways it is inspiring educators and students throughout the Delaware Valley.



# INSPIRING FUTURE LEADERS

*Delaware Valley Science Fairs has been inspiring youth in the fields of Science, Technology, Engineering, and Math since 1949.*

Established in 1949, Delaware Valley Science Fairs began as a joint venture between the Philadelphia Inquirer and the Franklin Institute. Today, DVSF organizes one of the largest and oldest science and engineering fairs in the United States and provides critical and relevant year-round STEM programming in Eastern Pennsylvania, Delaware, and Southern New Jersey.

DVSF plays an important role in encouraging students, supporting educators, and advancing Science, Technology, Engineering, and Math (STEM) education initiatives through a variety of programs. DVSF's *Teacher Professional Development Program* focuses on how to incorporate inquiry-based techniques into schools' STEM curricula, and its *Mentorship Program* provides a forum for students to connect with scientists in their field of study.

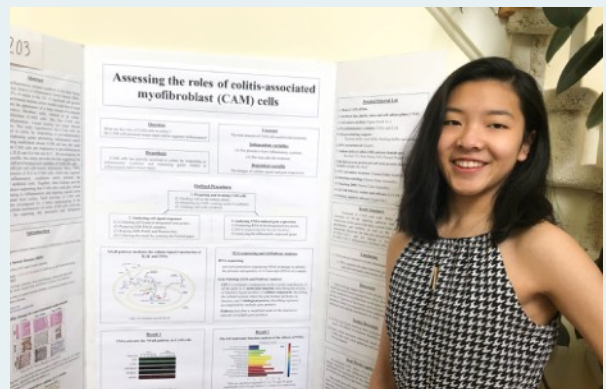
Each year, DVSF supports thirteen community-based science and engineering fairs in the Delaware Valley and organizes the DVSF Regional Fair where students who won at their local fairs have the opportunity to present their research and interact with scientists, industry leaders, and academics to receive feedback on their research and presentations. Following the DVSF Regional Fair, category winners are eligible to participate in international High School and Middle School science fair competitions.

The ultimate goals for Delaware Valley Science Fairs are to: spark and nurture interest in fields of science, technology, engineering, and math; enrich students' curriculum and after-school interests; and, increase the number of students who pursue advanced education and, eventually, careers in STEM.

## DVSF Goes Virtual

The Delaware Valley Science Fairs team, including leadership, staff, volunteers, and students, faced unprecedented challenges during the 2020 program year due to the COVID-19 pandemic. While some programs needed to be canceled, including the annual in-person Regional Fair, the organization endeavored to ensure opportunities existed for students to be recognized for their research efforts, compete for prizes and scholarships, and receive invaluable feedback from the Science Fair judges.

As a result, DVSF designed, developed, and launched a virtual fair experience. A first for DVSF! The virtual fair allowed eligible students to present their research projects and receive feedback from working scientists, healthcare professionals, and engineering judges. 673 projects were presented for judging, which was completed by 367 volunteer judges. Scholarships awarded totaled \$4.5 million. In addition, students earned more than forty thousand dollars in prizes.

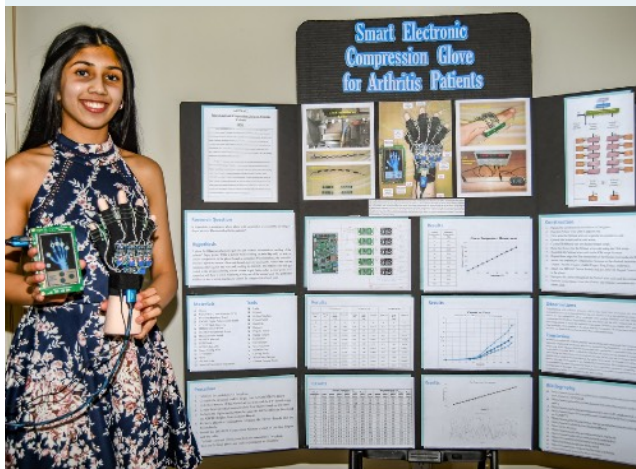


*Lucy Wang, 2020 Grade 9 Gold Medalist.  
Methacton High School. Project: Assessing the Roles  
of Colitis-Associated Myofibroblast Cells.*

# Delaware Valley Science Fairs Program Impact 2019-2020

2,924

**2,924 STUDENTS**  
presented **2,725 research projects**  
at 2020 local fairs. Students were  
joined by **351 teachers** representing  
**258 schools** from Eastern  
Pennsylvania, Delaware, and  
Southern New Jersey.



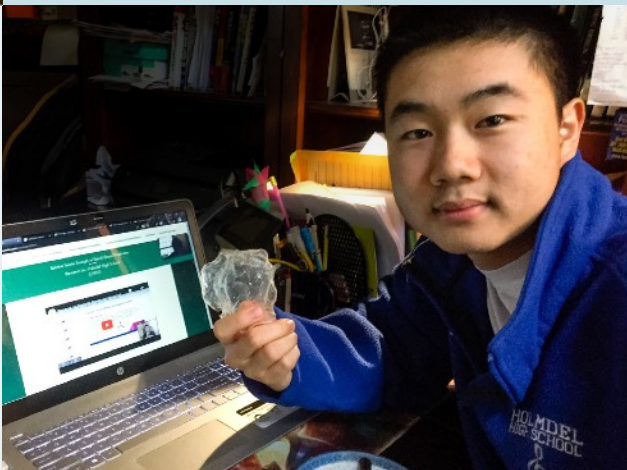
121

**121 EDUCATORS AND  
SCHOOL LEADERS**

from the Delaware Valley, attended  
one of **26 free workshops** offered  
through the DVSF Teacher  
Professional Development Program  
in 2019-2020.

205

**205 SCHOLARSHIPS**  
were offered from DVSF university  
partners and private donors to 11th  
and 12th grade students with a total  
value of more than **\$4.5 million**.



## STUDENTS FEATURED

Top, Susan Deering, Avon  
Grove High School. Project:  
Designing a Prosthesis to Aid  
in Right Hand Motion of  
Violin. 2020 Grade 10 Silver  
Medalist.

Middle, Vrishti Yadav,  
Pennbrook Middle School.  
Project: Smart Electronic  
Compression Glove for Arthritis  
Patients. 2020 Grade 9 Silver  
Medalist.

Bottom, Benjamin Lin, Holmdel  
High School. Project: Relative  
Tensile Strength of Starch-  
Based Bioplastics: Effective and  
Biodegradable Materials for  
Applications in Consumable  
Manufacturing. 2020 Grade 11  
Silver Medalist.

# DVSF STUDENT PROGRAMS

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*Delaware Valley Science Fairs (DVSF), a 501(c)3 organization, strives to bring parents, teachers, and industry together to stimulate and nurture young people so that they grow and develop into contributing members of the community. To accomplish this mission, DVSF focuses on programs designed to inspire a love of STEM for students in middle and high school.*

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## Science Fairs

DVSF supports thirteen local science fairs held throughout the winter and early spring each year. During the 2019-2020 program year, twelve of these fairs were held and saw **2,924 students in grades 6 through 12, representing 258 schools** enter science fair projects.

These projects were entered into one of the fifteen categories which include:

1. Behavioral & Social
2. Biochemistry
3. Botany
4. Chemistry
5. Computer Science
6. Consumer Science
7. Earth & Space
8. Engineering
9. Environmental Science
10. Mathematics
11. Medicine & Health
12. Microbiology
13. Physics
14. Zoology
15. Team Projects

Winners from local science fairs earn the opportunity to compete at the Delaware Valley Science Fairs regional event in Oaks, Pennsylvania. The 2020 DVSF Regional Fair, held virtually, hosted **673 entries** that were reviewed and evaluated by **367 volunteer judges** from the STEM community.

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## Regeneron International Science and Engineering Fair

Every year, roughly 1,850 students from around the world earn the right to compete at the Regeneron International Science and Engineering Fair (ISEF), organized by the Society for Science & the Public. This includes category winners in grades 9 through 12 from the DVSF Regional Fair. While 2020 saw the cancelation of Regeneron ISEF's in-person event, DVSF participants who qualified for ISEF will forever be considered alumni of this prestigious organization.

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## Broadcom MASTERS

Resulting from the 2020 DVSF Virtual Fair, 219 middle school students were eligible to compete in the Broadcom MASTERS science competition. This is unique in 2020, as typically only middle school category winners are eligible. Due to COVID-19, all middle school students who were registered for a Broadcom MASTERS affiliated science fair, including the DVSF Regional Fair, and presented projects for judging were eligible.

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## Mentorship

DVSF recognizes the need to provide aspiring students with support and guidance. To accomplish this, DVSF established a mentorship program matching youth with leaders in the fields of science, technology, engineering, and math. Students requesting mentors will find that their matched professional can provide them with technical expertise and resources that may not be available to them within their family unit or educational institution.

For more information about this program, please contact Jaime Howard at [jhoward@dvsf.org](mailto:jhoward@dvsf.org).



*Olivia Takla of Marine Academy of Technology & Environmental Science. DVSF 2020 Grade 10 Gold Medalist. Project: Using Machine Learning and Smart Insoles for Early Detection of Autism Spectrum Disorder.*

# TEACHER PROFESSIONAL DEVELOPMENT PROGRAM

The Teacher Professional Development (TPD) Program is a multifaceted DVSF initiative created to train teachers on how to incorporate inquiry-based techniques into schools' Science, Technology, Engineering, and Math (STEM) curricula and to provide teachers, fair directors, parents and students resources to prepare for and be competitive in science and engineering fairs.

**DVSF team members work towards facilitating students' participation in science and engineering research with the ultimate goal of creating a science literate workforce.**

Thanks to generous support from donors, DVSF can empower teachers, helping them learn to mentor and guide students in developing a love of science and engineering at no cost to the school, teacher, or students impacted. Customized workshops are offered at both a middle school and high school level and feature topics such as:

- STEM - Science, Technology, Engineering and Mathematics;
- Getting Started with Science Fair;
- How to Ask a Testable Question;
- Analyzing Data through Statistics and Graph Analysis;
- Presenting a Project - Putting Your Best Foot Forward!;
- Take it Up a Notch!! - Moving Projects to the Next Level;
- Writing the Conclusion; and,
- Writing an Abstract.

While teachers are the primary audience for this program, attendees also include science fair directors, superintendents, curriculum supervisors, principals, parents, and students. The classroom-based workshops, which often include student participants, last roughly 45-60 minutes and the teacher / administrator workshops run for 1-3 hours, depending on the topic. And, the learning doesn't stop there! DVSF workshop educators maintain year-round communication, including sharing additional resources and instructional tools, as well as providing ongoing virtual support services.

During the 2019-20 program year, which typically mirrors the academic school year, DVSF offered 26 workshops attended by 101 educators, 20 administrators, and 536 students and indirectly impacted more than 4,500 additional students. Two unique workshops were also presented in collaboration with the Chester County Intermediate Unit for approximately 35 parents and 60 students who learned more about participating in science fairs. Unfortunately, DVSF workshops were suspended from March through June 2020 due to the COVID-19 pandemic.



*Aishwarya Suresh, Parkland High School. DVSF 2020 Grade 9 Bronze Medal. Project: Toxicological effects of electronic cigarette vapors on daphnia magna.*

## Program Testimonial

*Each workshop is uniquely designed to support the teachers' needs. Even seasoned teachers walk away wondering why they didn't know that before and eager to try new strategies and resources with their students. Our teachers look forward to the annual workshop each year because they know that they will leave with valuable resources and strategies.*

*-Nancy Anderson  
Retired Teacher & Salem County, NJ  
Science Fair Director*

### FOR MORE INFORMATION

*To schedule a workshop or get additional information, please contact Sue Mecouch, Director of Teacher and Student Development  
suzannemecouch@gmail.com*

*610-909-5105*

# REGIONS SERVED

## 2020 Regional Impact Report

Delaware Valley Science Fairs financially supports and provides expert guidance related to strategic planning, student project review, fair organization, and other resources as needed to the 13 local science and engineering fairs that feed into the annual DVSF Regional Fair held each spring.

On average, DVSF provides \$16,000 each year to these local fairs, as a result of generous contributions given to DVSF. Priority consideration is given based on each fair's unique financial needs and to ensure resources are available for under-represented and under-served student populations.

Delaware competitors have the opportunity to participate in one of three local fairs: the New Castle County Science Fair, the Kent County Science Fair, and the Sussex County Science Fair.

In 2020, 242 students, representing 20 schools, participated in the New Castle County and Sussex County Science fairs. The Kent County Science Fair was canceled due to COVID-19.

New Jersey competitors come from one of four regional fairs: the Cumberland County Science Fair and the Salem County Science Fair for students in those counties, the Jersey Shore Science Fair for students from Atlantic, Cape May, Monmouth, and Ocean Counties and Coriell Science Fair for the students from Burlington, Camden, and Gloucester Counties. In 2020, 1,052 New Jersey students, representing 63 schools, participated in these fairs.

Students from Eastern Pennsylvania come from local fairs held in the following counties: Bucks County, Chester County, Delaware County, Montgomery County, Philadelphia County, and the

Lehigh Valley Science and Engineering Fair for Lehigh and Northampton Counties. In 2020, 1,630 students, representing 175 schools, participated in these fairs.

In total, the 2020 local fairs hosted 2,924 students presenting 2,725 research projects. These students were joined by 351 teachers and represented 258 schools from across the region.

For more information on local fairs and deadlines for 2021 registrations, please visit [www.dvsf.org](http://www.dvsf.org).



# DVSF DONORS

*Without the philanthropic support, Delaware Valley Science Fairs (DVSF) would not be able to operate the annual Regional Science and Engineering Fair or to provide local teachers the support and tools they need to spark students' creativity and foster multi-dimensional learning in the classroom.*

## Major Gift Contributors

**(\$10,000+)**

Bullpen Capital  
The Dietrich W. Botstiber Foundation  
Dow  
Drexel University  
DuPont  
Exelon Generation  
FMC Corporation  
GSK  
Insaco, Inc.  
Janssen R&D  
Universal Display Corporation (OLED)  
University of the Sciences in Philadelphia  
West Pharmaceutical Services, Inc.

## Sustaining Donors

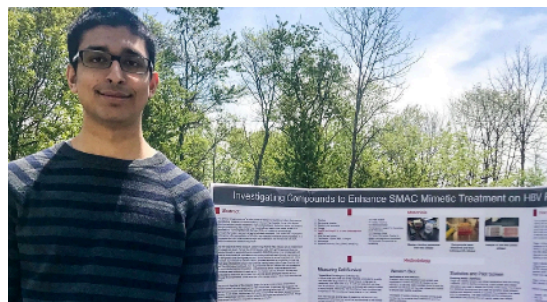
**(\$5,000 - \$9,999)**

Janssen Biotech  
Lockheed Martin  
Pfizer, Inc.

## Contributors

**(\$1,000 - \$4,999)**

Countryside Consulting  
Frey-Studt Charitable Trust  
Harrisburg University of Science and Technology  
Craig Hiller  
John and Marie Cwik Family Foundation  
Dr. & Mrs. Gerald Liebling  
Merck  
Gerald D. Quill\*  
Fred\* & Susan Thompson



*Richi Waidyanath, Central Bucks High School. DVSF 2020 Grade 12 Gold Medal. Project: Investigating Synthetic Compounds to Potentiate SMAC Mimetic Targeting Agent.*

## Friends of DVSF

Steven Abramson\* & Caren Barnet  
Anonymous (1)  
Michael Arning  
Margaret Beekman & Fred Feldman  
Richard Close\*  
Mark DiRado\*  
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\*2019-2020 DVSF Trustee

# GET INVOLVED

## Volunteer

***Are you available to invest time with our region's students? Your volunteer involvement will help create the next generation of innovators, who will be key to tomorrow's discoveries.***

DVSF is a volunteer driven organization and needs your support. More than 350 volunteers are essential for judging at the annual DVSF Regional Fair, providing an opportunity for students to receive valuable feedback and project evaluations by scientists, engineers, physicians, and educators from both the business and academic communities. A few minutes of professional contact with student scientists and engineers may make a lifetime of

difference in their career. In addition, nearly 75 volunteers are also needed to set-up, staff, and wrap-up the DVSF Regional Fair, and there are countless opportunities for volunteers to serve as mentors throughout the year.

If you are interested in volunteering, please contact John Disston, Director of Judging & IT, at [jdisston@dvsf.org](mailto:jdisston@dvsf.org) or 215-895-5840.

## Alumni Engagement

Are you a member of the DVSF alumni? Please consider connecting with DVSF on social media to learn more about how you can support students following in your footsteps.

## Special Award Partners

As a result of the transition from an in-person fair to a virtual fair, necessitated by concerns for the health and safety of all participants, as well as the limited capacity of the program staff and volunteers, Delaware Valley Science Fairs Board of Trustees and leadership staff elected to suspend the Regional Fair's special awards program in 2020. Typically, special award partners provide approximately \$35,000 in additional prizes for DVSF Regional Fair participants. DVSF remains grateful to more than 65 professional societies and organizations who partner with DVSF in its efforts to recognize outstanding science and engineering fair participants and support those students in their future educational endeavors. DVSF looks forward to the special awards program returning in 2021. For more information on the special awards program, please visit [www.dvsf.org](http://www.dvsf.org) or contact Jaime Howard at [jhoward@dvsf.org](mailto:jhoward@dvsf.org).



# BOARD OF TRUSTEES

*We are committed to preparing tomorrow's innovators. I believe that if we provide the opportunity for the natural curiosity of our young people to blossom, they will provide us with a bright future.*

*Henry Disston, Jr.*

*PRESIDENT AND EXECUTIVE DIRECTOR*

## 2019-2020 Officers

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# LOOKING AHEAD

*The future of Delaware Valley Science  
Fairs continues to be bright*

After almost four decades of leadership and dedication to Delaware Valley Science Fairs, Henry and Mickey Disston are preparing for their retirement and the transition to a new chapter of leadership, STEM programming, and continued successes for DVSF.

In 2020, DVSF will enter a new era with the retirement of Mickey Disston in June 2020 from her role as Director of Special Awards & Volunteers and the beginning of a phased retirement for President & Executive Director Henry Disston. It is because of Mickey and Henry's tireless efforts, unwavering commitment to young scientists, passion for Science, Technology, Engineering, and Math education, and countless hours of counsel, mentorship, and friendship, DVSF has become the organization it is today -- resulting in the significant impact described in this Annual Report.



Mickey and Henry's boundless energy and dedication to students and STEM educators inspires everyone who has had the joy of knowing and working with them.

While Mickey will formally retire in summer 2020, she will not be far from DVSF. Mickey will continue to offer her guidance, assist in coordinating the springtime science and engineering fair, and be an integral part of the special awards program

through spring 2021, while supporting the transition of her many and varied responsibilities to new staff and volunteers.

Henry will continue to serve as the President & Executive Director through FY2021, actively continuing to guide the organization towards achieving its operating and mission-driven priorities and responsibly working with the Board of Trustees through leadership change.

With much gratitude, DVSF recognizes the significant contributions both Mickey and Henry have made over the years of their distinguished leadership and the role they each have played in building DVSF to its current status of excellence in providing opportunities to inspire the next generation of innovators and supporting students, mentors, and teachers throughout Eastern Pennsylvania, Delaware, and Southern New Jersey.

*Photo Credit  
Linda Bell, LaBell Images*

**DELAWARE VALLEY SCIENCE FAIRS**  
WHERE YOU CAN MAKE A DIFFERENCE

**DVSF**

3201 Arch Street  
Suite 310A  
Philadelphia, PA 19104  
215-895-5840  
[www.dvsf.org](http://www.dvsf.org)



**SAVE THE DATE**

*DVSF Regional Science Fair  
April 6-8, 2021  
Oaks, Pennsylvania  
For more information, visit  
[www.dvsf.org](http://www.dvsf.org)*

**SAVE THE DATE**

*VIP Luncheon  
Wednesday, April 7, 2021  
Oaks, Pennsylvania  
For more information, contact  
[jhoward@dvsf.org](mailto:jhoward@dvsf.org)*

**SAVE THE DATE**

*DVSF Award Ceremony  
Thursday, April 8, 2021  
Oaks, Pennsylvania  
For more information, visit  
[www.dvsf.org](http://www.dvsf.org)*