

# **Annual Report**

2022-2023

"Education is not the filling of a pail, but the lighting of a fire."

- W.B. YEATS, POET

dvsf.org

#### DEAR VALUED FRIEND OF DVSF,

In FY2023, DVSF began celebrating our 75th Anniversary. We are proud to recognize seventy-five years of operating and providing unique STEM education programming throughout the Delaware Valley region. Our esteemed history would not be possible without our generous donors and sponsors; agency, corporate, association, and special awards partners; and staff and volunteers whose tireless efforts, passion for STEM, and dedicated service is immeasurable!

Over the last nearly eight decades, DVSF has adapted its programs and activities to meet the needs of 6th–12th grade students and STEM educators, pursued collaborations with industry, academia, and professional and civic organizations, and built unique partnerships to provide one-of-a-kind opportunities, scholarships, special awards, and prizes. In doing this, we have also prioritized investing in our future to ensure financial solvency and sustainability. Our goal and our vision are to continue to do the same for the next 100 years! This is only possible through the commitment of donors, supporting organizations, and volunteers!

Enclosed in this report are the highlights from this past year — student spotlights sharing just a few of our incredible talented youth researchers, descriptions of our programs, activities and accomplishments, our financial reports, and other DVSF information to keep you apprised of the incredible work, reach, collaborations, and impact of the organization. I am excited to share this report with you and energized for achieving our mission, strengthening our relationships, and deepening our commitment to providing equitable access to all students interested in pursuing STEM research projects!

Thank you for your continuing support and commitment to STEM education!

With warm regards,

**Bob Solomon** 

**Executive Director and President** 





# **DVSF Mission & Overview**

# Inspiring future leaders and innovators

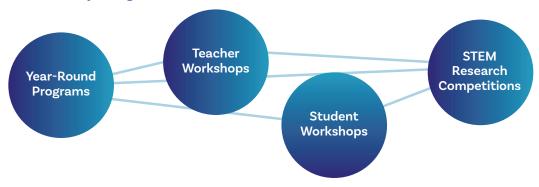
**AND** 

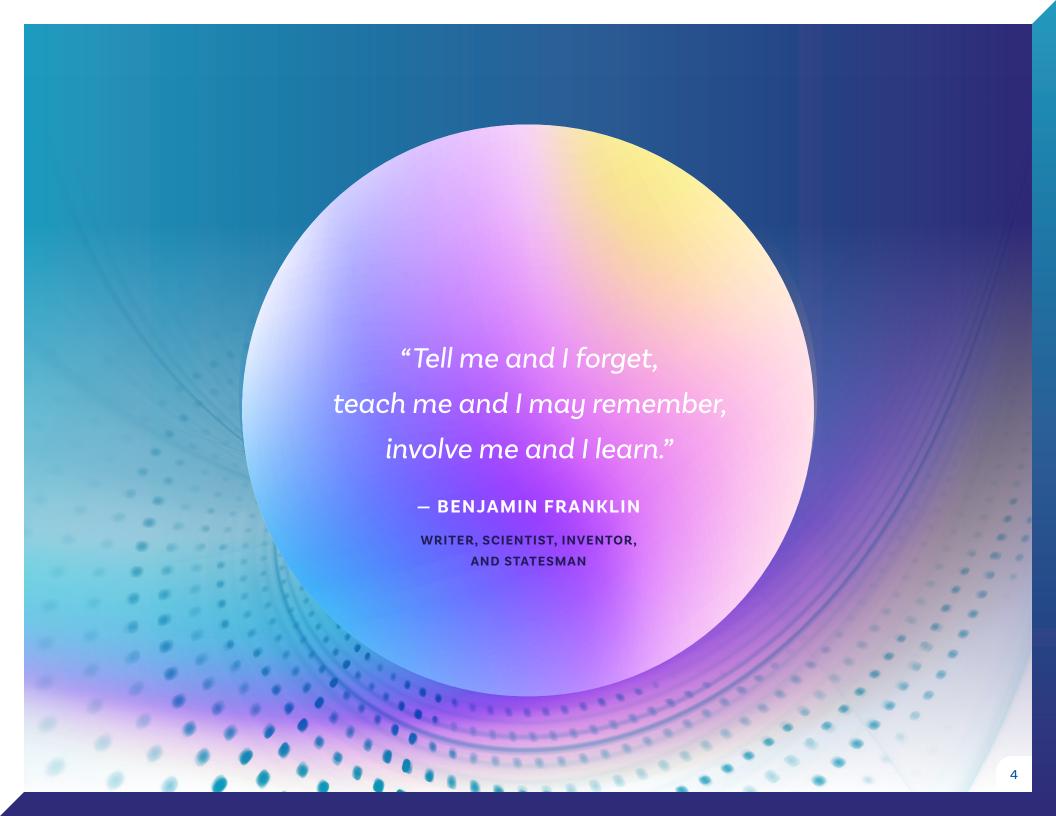
supporting
STEM teachers
in Eastern
Pennsylvania,
Delaware,
and Southern
New Jersey.

Founded in 1949, DVSF 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.

DVSF, a 501(c)3 organization, enables students in middle and high schools to **develop a love of science**, **create interest in STEM** at this stage in their lives, **gain confidence** and, finally, move into careers in STEM disciplines. DVSF's year-round programs – including teacher workshops, student workshops, and one of the largest science and engineering research competitions in the United States – provide opportunities to inspire the next generation of innovators and support 6th-12th grade students, mentors, and STEM educators in Eastern Pennsylvania, Delaware, and Southern New Jersey.

DVSF provides a **platform for inquiry-based learning**, the pursuit of answers, and the acquisition of new skills, serving thousands of young scientists, technologists, engineers, and mathematicians from all social and economic backgrounds. The philosophy behind our programs is that students **learn science by doing science**.





### STUDENT SPOTLIGHT

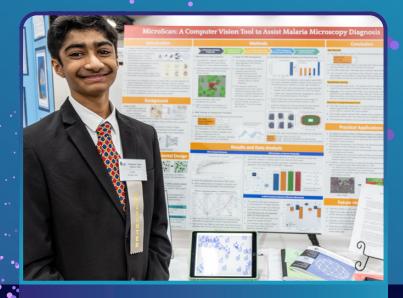


# **Dugan Tunney**

6th-8th Grade DVSF Gold Medalist

TOMS RIVER INTERMEDIATE NORTH (JERSEY SHORE)

**PROJECT:** Does the speed of a magnet traveling through a coil affect the amount of current induced in the coil?



# **Anish Kishor Pallod**

9th Grade DVSF Gold Medalist

PARKLAND HIGH SCHOOL (LEHIGH VALLEY)

**PROJECT:** A novel low cost microscopy based computer vision approach to diagnose malaria.

# **Key Activities**

### **LOCAL FAIRS**

DVSF supports 13 "local" fairs and provides expert guidance related to strategic planning, student project review, fair organization, and other resources as needed.

Since all students can only earn the opportunity to advance to and compete at DVSF's regional event by winning at their local fairs, DVSF closely collaborates with their local fair directors and STEM leaders. DVSF organizes and hosts an Advisory Board, which is comprised of local fair directors and other school and agency leadership to share ideas, develop coordinated plans, and learn from one another related to fair administration and technologies.

1,745 6th-12th grade stude participated in STEM

6th-12th grade students from 138 schools participated in STEM research fairs in PA, DE, and NJ

Grace was awarded 3rd place in Translational Medical Science at Regeneron ISEF.



### **Grace Yacobe**

10th Grade DVSF Gold Medalist

THE ACADEMY OF NOTRE DAME DE NAMUR (DELAWARE COUNTY)

**PROJECT:** Mesanchymal stem cell therapy for celiac disease.

# DVSF SCIENCE AND ENGINEERING RESEARCH COMPETITIONS

Students who win in their local fairs earn the right to compete at the annual Delaware Valley Science Fair at the Greater Philadelphia Expo Center in Oaks, PA each April. DVSF is comprised of five research competitions that are affiliated with Society for Science, including a fair each for 6th-8th grades, 9th grade, 10th grade, 11th grade, and 12th grade.

Individual students choose research projects from 14 STEM disciplines, including:

- behavioral/ social sciences
- biochemistry
- botany
- chemistry
- computer sciences
- consumer sciences
- earth/space sciences
- engineering
- environmental sciences
- mathematics
- e medicine/
  - microbiology
  - physics
  - zoology

Students may also enter DVSF's event as a team of two to three students. The high school teams compete with one another in a unique competition at DVSF, regardless of grade level, where they may present projects from any of the aforementioned STEM disciplines. At the regional level, students' topics and methodology are reviewed by the DVSF Scientific Review Committee to guarantee proper scientific safety procedures and federal guidelines are being followed.

The judging process is key, as students will receive valuable feedback and project evaluations from industry experts. This input is essential for students to continue their research or in helping students redefine their research for a future project.



STO students

- 540 high school students
- 339 middle school students

©17/research projects



406 volunteer judges

### At the 2023 DVSF Regional Event:



DVSF distributed more than

\$15,550

in prizes to 1st, 2nd, and 3rd Place winners in each category.



\$26,400

in scholarships were awarded to 7 students.

 Two university partners offered partial scholarships to 224 eligible 11th and 12th grade students.



\$30,675

in special awards were distributed by 49 professional societies and organizations who partner with DVSF to support student researchers.

# NATIONAL AND INTERNATIONAL COMPETITIONS



2023 Thermo Fisher Junior Innovators Challenge (JIC) is a program founded and produced by the Society for Science seeking to inspire young scientists, engineers, and innovators who will solve the grand challenges of the future.

JIC is the only middle school STEM competition that leverages Society-affiliated science fairs as a critical component of the STEM talent pipeline. DVSF is a part of that pipeline, and 42 of our middle school students (6th-8th grades) were eligible to advance in 2023 to compete among more than 1,800 students from 48 states, Washington, DC, and three US territories (Puerto Rico, Guam, and Virgin Islands). Of the 42 eligible DVSF students, 10 earned a spot in the Top 300 Projects of the Thermo Fisher JIC.



Regeneron International Science and Engineering Fair (ISEF) provides a global stage for the best and brightest young scientists and engineers around the world.

Founded on the belief that advances in science are key to solving global challenges, Regeneron ISEF supports and invests in the next generation of leading STEM thinkers who are generating ideas and acting as catalysts for the change needed to improve the well-being of all people and the planet.

12 high school DVSF medalists earned an all-expenses paid trip to the 2023 Regeneron ISEF in Dallas, Texas and competed for awards, prizes, and scholarships. Among these twelve outstanding students, DVSF presenters earned:

5 Grand Award 2 Second Place winners

winners

2 Third Place winners



6 Special Award winners

### middle school students

(6th-8th grade)

advanced to the 2023 Thermo Fisher Junior Innovators Challenge

### high school **DVSF** medalists

earned an all-expenses paid trip to the 2023 Regeneron ISEF in Dallas, Texas

### **2023 COLLEGE FAIR**

For the first time in our history, DVSF invited colleges and universities to join us for a College Fair and share information about their schools and STEM programs with DVSF student presenters.









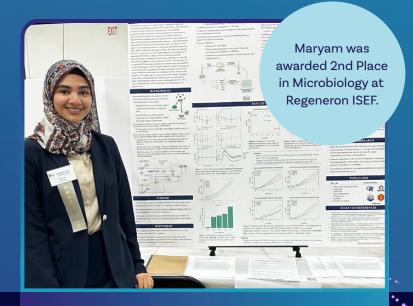


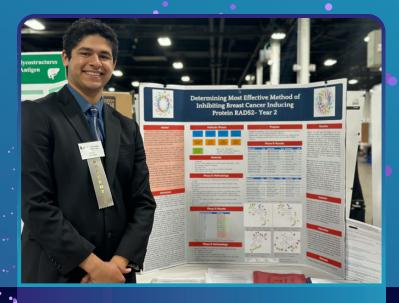
"In the 21st century, scientific and technological innovations have become increasingly important as we face the benefits and challenges of both globalization and a knowledge-based economy.

To succeed in this new information-based and highly technological society, students need to develop their capabilities in STEM to levels much beyond what was considered acceptable in the past."

- NATIONAL SCIENCE FOUNDATION

### STUDENT SPOTLIGHT





# **Maryam Abdul-Azim**

11th Grade DVSF Gold Medalist

CENTRAL BUCKS HIGH SCHOOL EAST (BUCKS COUNTY)

**PROJECT:** Targeting signaling molecules of P. aeruginosa by using mucin as an anti-quorum sensing drug: A novel design to evaluate efficacy in the context of multidrug resistance.

# **Dhaval Tantry**

12th Grade DVSF Gold Medalist

CENTRAL BUCKS HIGH SCHOOL EAST (BUCKS COUNTY)

**PROJECT:** Determining most effective method of inhibiting breast cancer inducing protein RAD52-Year 2.

# **Expanding Partnerships**

In 2022, DVSF embarked on an exciting initiative with <u>Drone Legends</u> and <u>WHYY</u>, and we expanded upon this endeavor in 2023. We are grateful for our partners at Drone Legends and WHYY for volunteering their time and expertise and for continuing this invaluable collaboration with us!

Building from the DVSF-specific curriculum that Drone Legends and WHYY developed, WHYY students joined Drone Legends and DVSF onsite at the Greater Philadelphia Expo Center on Judging Day again in 2023. The WHYY student team brought a fresh perspective on covering the STEM research competitions. They captured DVSF's students' experiences and interactions throughout the day with one another and volunteer judges as well as conducted on-the-floor interviews.

"Together, we merged technology and media arts, amplifying their educational impact on both students and the community.

WHYY students learned drone piloting and then showcased these skills at DVSF. Their aerial footage offered a fresh lens through which to view the science fair, invigorating the event and its participants.

The collaboration was a win-win for everyone: Drone Legends demonstrated the educational potential of drone technology; DVSF captured the vibrancy of their event through an innovative medium; and WHYY engaged a youthful demographic while offering hands-on media experience.

For the community, this alliance serves as a powerful model of what can be achieved when diverse organizations unite with a shared educational vision. It exemplifies how collaborative endeavors can elevate student engagement, enrich curricular offerings, and resonate far beyond the confines of a single event."

- Scott Buell | Founder and CEO | Drone Legends



Following Judging Day at DVSF, the WHYY student team produced another short video for DVSF to use in marketing efforts and on social media channels.

Click here to view the 2023 DVSF video >>

"It was amazing to bring WHYY's teen interns to DVSF so they could cover the fair and the amazing young people there. They were all floored by the talent, knowledge, and creativity of the young scientists, and I think the young scientists were impressed with them as well. What could be better than having excellent teens covering teen excellence?"

Craig Santoro
 Director of Educational Programs | WHYY

# **Volunteers & Year-Round Initiatives**

# DVSF is tremendously grateful for the many volunteers that make our programs and STEM research competitions possible.

We couldn't do it without the more than 400 volunteer judges who evaluate all projects, interview student presenters, and provide invaluable feedback that may make a lifetime of difference in the students' research and careers. DVSF also relies on volunteers to assist with event coordination and to serve as mentors throughout the year. Learn more information about our volunteer opportunities and year-round initiatives below.

### **Mentorship Program**

DVSF's community of mentors—comprised of parents, teachers, DVSF alumni, and sponsors—are available to advise and support students on an individual basis. The Mentorship Program is designed to give students access to more technical expertise, equipment, and guidance on developing safe procedures.

> Learn more about the Mentorship Program

### **DVSF Science Fair Workshops**

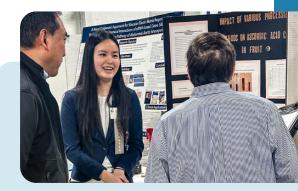
Delaware Valley Science Fairs' free science workshops for teachers and students offer a wide variety of information and resources. Workshop topics include 'getting started in understanding inquiry and its application to student science research (science fairs!), 'forming testable, investigatable questions,' 'setting up a project for statistical analysis,' and 'appealing to judges.'

> Learn more about <u>Teacher and Student Workshops</u>

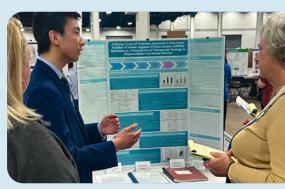
### **DVSF Alumni Programs**

DVSF Alumni actively participate in webinars, networking receptions, and panel discussions throughout the year as well as serve as coaches and mock judges with DVSF student medalists competing at ISEF. All DVSF alumni programs are virtual to accommodate our alumni who are located across the country and around the globe.

> Learn more about <u>DVSF Alumni Programs</u>







# **Program Year**

# 2022-23 Supporters

**DVSF relies entirely on charitable donations to meet its annual operating budget.** Philanthropic contributions for general operating support and event sponsorship provide meaningful investments in enriching and sustaining DVSF programs in Eastern Pennsylvania, Delaware, and Southern New Jersey. DVSF gratefully acknowledges its supporters.

#### **President's Circle**

**DONATIONS OF \$25,000+** 





### **Major Gift Contributors**

**DONATIONS OF \$10,000 - \$24,999** 

- Botstiber Foundation
- · Bullpen Capital
- Constellation
- · Corteva Agriscience
- Dow
- DuPont
- FMC Corporation
- In Memory of Donald Kohlhaas
- Universal Display Corporation (OLED)
- · West Pharmaceutical Services, Inc.

#### **Contributors**

**DONATIONS OF \$1,000 - \$9,999** 

- Air Products Foundation
- Broadcom Foundation
- Yi Cai & Qian Huang
- · Community College of Philadelphia
- Delaware Valley University
- Donald Feith
- Susan Frey\* & Dr. William Studt
- Robert Hranek\*
- Merck Foundation & Merck Employee Matching Gifts Program
- Philadelphia Society of Coatings Technology
- Saint Joseph's University
- Steven C. Pomerantz\*
- Gerald D. Quill\*
- Vendangi Shah
- Society for Science
- · Stevens Institute of Technology
- Fred\* & Susan Thompson
- W.L. Gore & Associates, Inc.

List updated October 2023.

#### Friends of DVSF

Supporting DVSF with gifts of \$1-\$999, a complete Friends of DVSF list is located at DVSF.org.

\* DVSF Trustee 13

# **Board of Trustees, 2022-23**

#### Officers

Paul Martino | Bullpen Capital
Chairman

Bob Solomon, Ph.D. | Delaware Valley Science Fairs, Inc.
Executive Director & President

Louise S. Smith, CPA | Countryside Consulting, Inc.
Treasurer & Vice President

Robert Hranek | Arcfield
Secretary & Vice President

#### **Trustees**

Steven V. Abramson | Universal Display Corporation (OLED) Mark DiRado | Constellation Henry Disston | DVSF President Emeritus Debra Dunne | Attorney Brian M. Forster, Ph.D. | Saint Joseph's University Susan Frey | Retired from Pfizer, Inc. Louis L. Hegyes | Retired College Administrator Ambra Hook | STEM Educational Consultant David Lukof, VMD | Harleysville Veterinary Hospital Joseph Maglaty, Ph.D. | Retired from Merck Allen P. Marks, Ph.D. | Retired from Rohm & Haas Company Peter Miller, Ph.D. | Thomas Jefferson University Barbara Nyland, Ph.D. | DuPont Science and Innovation Steven C. Pomerantz, Ph.D. | Janssen Research & Development Vojislava Pophristic, Ph.D. | Rowan University Gerald D. Quill | Retired from East River Bank Rob Studt | Johnson & Johnson Raymond W. Sweet, Ph.D. | Retired from Janssen, Biotechnology Consultant Patti Taylor | SAP America, Inc.

A. Frederick Thompson, Ph.D., P.E. | Retired from Roy F. Weston, Inc.

# **DVSF Management Team**

Bob Solomon Executive Director & President bsolomon@dvsf.org

Mary-Rita Bonner
Director, Awards & Scholarships
mrbonner@dvsf.org

John Disston
Director, Operations
jdisston@dvsf.org

Jaime Howard

Director, Institutional Advancement
jhoward@dvsf.org

Belle Romine
Director, Communications & Mentorship
bromine@dvsf.org

# Financial Snapshot

### **Statements of Financial Position**

Years ended June 30, 2023 and 2022

2023	2022
\$ 423,853	\$ 458,641
-	19,385
3,299	2,827
459,100	441,966
\$ 886,252	\$ 922,819
\$ 12,027	\$ 35,124
429,439	378,645
313,675	407,741
743,114	786,386
131,111	101,309
874,225	887,695
\$ 886,252	\$ 922,819
	\$ 423,853 - 3,299 459,100 \$ 886,252  \$ 12,027  429,439 313,675 743,114 131,111 874,225

# **Statements of Activities**

Years ended June 30, 2023 and 2022

REVENUES AND SUPPORT		2023			2022	
	Without Donor Restrictions	With Donor Restrictions	Total	Without Donor Restrictions	With Donor Restrictions	Total
Contributions	\$ 256,838	\$ 55,000	\$ 311,838	\$ 233,311	\$ 9,500	\$ 242,811
Government grants	-	-	-	19,385	-	19,385
Other	1,309	-	1,309	1,387	-	1,387
Endowment spending policy	764	(764)		503	(503)	-
Net assets released from restrictions	26,531	(26,531)		29,527	(29,527)	-
Total revenues and support	285,422	27,705	313,147	284,113	(20,530)	263,583
EXPENSES		2023			2022	
Programs	277,425	-	277,425	293,051	-	293,051
General and administrative	60,825	-	60,825	55,976	-	55,976
Fundraising	45,487	-	45,487	45,211	-	45,211
Total expenses	383,737	-	383,737	394,238	-	394,238
Change in net assets before other changes	(98,295)	27,705	(70,590)	(110,125)	(20,530)	(130,655)
OTHER CHANGES		2023			2022	
Investment income (loss)	55,023	2,097	57,120	(51,066)	(3,205)	(54,271)
Change in net assets	(43,272)	29,802	(13,470)	(161,191)	(23,735)	(184,926)
NET ASSETS		2023			2022	
Beginning of year	786,386	101,309	887,695	947,577	125,044	1,072,621
End of year	\$ 743,114	\$ 131,111	\$ 874,225	\$ 786,386	\$ 101,309	\$ 887,695

"Curiosity is the wick in the candle of learning."

— WILLIAM ARTHUR WARD, AUTHOR

Inspiring future leaders and innovators and supporting STEM teachers in Eastern Pennsylvania, Delaware, and Southern New Jersey since 1949











