



NEHS Project SPARC Boosters

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Northeast High School Project SPARC Boosters

Greetings!

Thank you for your generous financial support in recent years to support Project SPARC.

As we close out 2021, I'm asking for your support again. I hope you will consider making another donation to SPARC. Our goal is to raise \$7,500 by December 31, 2021. All donations are appreciated and 100% of the funds raised are used to support SPARC. Please make your donation today by clicking here or using the link below. *(A special thank you to the Boosters who have already made donations.)*

While we are still confronting this pandemic, I am excited to report that since October, SPARC has returned to in-person learning for the 2021-2022 school year. Project SPARC's mission of providing NEHS students with experiential learning opportunities around STEM-related activities has provided a much-needed outlet for students who survived 18 months of "virtual learning." In this report, I want to update you on SPARC's direction, its hopes for the future, and how your support can ensure SPARC maintains and strengthens its position as a premier STEM program.

I also want to extend my thanks to SPARC Co-Directors **Andrew Adams and Danielle Parker**, whose dedication and commitment, both as educators and to SPARC, has kept the program going and inspired students to see their full potential. Through their leadership and vision, and with your support, SPARC will continue to adapt and grow as it attracts a whole new generation of students to STEM careers.

On behalf of the **SPARC students and faculty** and the **NEHS Project SPARC Boosters**, I thank you for your continued generosity and support of SPARC!

Please feel free to contact me with your questions, comments, and suggestions.

Wishing you a wonderful holiday season and a very Happy New Year! Stay Safe.

Burt Dicht, Director
NEHS Project SPARC Boosters

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State of Project SPARC Report

After 18 months of virtual learning, SPARC kicked off the academic term with a very successful **"Vikings Running on STEAM Summer Camp."** Held in August, this week long in-person summer camp introduced students to science, engineering and technology concepts through a series of hands-on-activities. With the start of the school year, more than 100 students attended the SPARC informational meeting on October 6, 2021 and since then over 90 NEHS students have been coming out each week. It was gratifying to see that much interest since SPARC is competing with about 70 other clubs on a weekly basis.

This year, with the help of the student leadership, SPARC has started an ambitious effort to adapt the SPARC curriculum to the changing needs and interests of students. As a result, SPARC now has seven divisions, each with a specific area of focus and objectives. They are: **Coding, Flight, Engineering, Robotics, Medical, Environmental Studies, and Public Relations.** Each division provides STEM related activities for approximately 30 students. Since the start of school, each division has been meeting for approximately 2 hours after school Monday to Thursday. Below, please find a brief summary and some images of the students working in their respective divisions.

SPARC Coding and Web Development

Approximately 20 students meet with the new coding instructor, **Mr. Yun**, every Monday. Mr. Yun has been hard at work teaching the basics of **Java, HTML, and Python.** Students who participate are learning to code, to build apps and games, use Arduino sensors to monitor air and water quality, and help write code to control robots.



Click the image to the right to view a video of one of the students explaining how he is using an Arduino Sensor to monitor water quality. This across curricular division helps support other divisions such as engineering and robotics. As with all of SPARC divisions, skills taught here will also make our students more desirable in the job market.

SPARC Flight



The **Flight Division** meets every Tuesday for an hour of ground school and an hour of flight time flying three newly purchased **DJI Mavic Air 2 drones.** These drones, purchased with funds raised by the Project SPARC Boosters, have proven to be an invaluable asset to our program.

Approximately 25 "Cadets" are aiming to earn their **FAA 107 Unmanned Aerial Vehicle License** at the end of this school year. This license will let students earn money commercially piloting a

drone and will allow students to unlock restricted airspace. Their course of study takes them on a discovery of airspace classifications, sectional charts, METAR reports, the relationship between weather and flight, and anatomy and physiology.

In the near future, Project SPARC hopes to utilize Microsoft Flight Simulator to introduce students to the possibilities of piloted flight to meet the growing demand for commercial airline pilots. Looking ahead, Project SPARC would like to engage in a Civil Air Patrol program.

SPARC Engineering

The **Science Olympiad**, which is a one-day competition that includes engineering devices, scientific knowledge tests, and hands on activities, is the main focus this year. The devices that the students will attempt to engineer are: a time keeping device, a bridge, an airplane, a Ping-pong Parachute, a WiFi antenna, a gravity powered vehicle, and a salinity detector. The students have already started to design these items and the ideas are inspiring. Science Olympiad's competition is scheduled for March 2022.



SPARC Robotics



The **SPARC Robotics Team's** newest member is **Mr. Mike Cione**. Mr. Cione will be working with **Ms. Carole Niemiec** to rebuild the Robotics program. Unfortunately, when the pandemic hit, the Northeast Robotics Specialists (NERDS) team was made up mostly of seniors. This left us without the means to train the new crop of student replacements.

Mr. Cione intends to spend this academic year reorganizing the team, ensuring that all of the participants gain the basic skills needed to compete. Additionally, we have partnered with Lockheed Martin to bring our team back up to competition standards.

SPARC Medical

Congratulations to Ms. Anne Johnson, who recently retired. Ms. Johnson taught CPR and First Aid for the better part of a decade to more than 250 SPARC students. **Mrs. Margaret Beyer**, our new school nurse, has agreed to take over the coaching duties of our Medical Division.

At the end of this year, approximately 50 students will be earning their **Basic Life Support** and **CPR certificates** through the American Heart Association. This proves to be a very successful program every year giving our students marketable skills.

Additionally, Project SPARC Medical has partnered with NEMAC and the Red Cross Club to drive blood donations and introduce students to the possibilities of the medical field



SPARC Environmental Studies



Project SPARC and NEHS's Natural Resource Management Learning Community, in an effort to get students enthused about nature and to work collaboratively outdoors, developed an immersive program where students travel to an off campus site to conduct citizen science. **Approximately 25 students** meet once a week to conduct riparian ecology, nature walks, cider making , bird watching and landscape photography. The focus of

SPARC Environmental Studies Division is the study of all aspects of the ecology of the zones adjacent to rivers and streams. Look for more reports an the exciting work of this new division.

SPARC Public Relations

SPARC Public Relations is a new division that evolved from the former Administration Division. The needs of the STEM community have changed over the years and SPARC is trying to stay ahead of the curve. Social media and and having a robust web presence are key channels in communicating in this busy and dynamic environment.

The Public Relations Division will be focused on curating our Facebook, Instagram, and Tik Tok accounts. They will be visiting with members of the other SPARC divisions to interview and document the great things all of our students are involved in. Our website will also get a major overhaul to reflect the wonderful things the SPARC program has to offer. In the meantime, please select the image to the right to view a highlight reel of students engaged in the **2021 Vikings Running On STEAM Summer Camp** held in August.



"Whatever career path a student follows, Project SPARC is a defining moment in their lives. Help future students experience SPARC by donating today..."

[Learn More](#)

Your monetary donations are greatly appreciated. If you desire, you can also contribute to SPARC by purchasing supplies directly. We have identified areas of need within the SPARC divisions and created a list of materials that are required.

Use this link to view the supplies list. If you would like to purchase any items contact SPARC Director Andrew Adams at ajadams@philasd.org. You will receive a donation receipt.

In a world increasingly defined by technological change and advancement, it is important to ensure SPARC maintains its role in preparing and inspiring students for careers where they can address our global challenges. That means recognizing the need to celebrate our past and reimagine our future.

The first step in our emerging long-term plan is to retire our Viking Space Shuttle. This ship has served NEHS well over the last 25 years, and Project SPARC wishes to thank all of those that contributed to this magnificent student-built space shuttle mockup. This will enable us to transform the SPARC wing into a "MakerSpace" that will house a wood shop, a vinyl cutter, a laser cutter, 3D printers, a computer lab, a proving room, work benches, and an environmental studies center. This will provide a space for our students to develop and imagine solutions, and then turn those designs into reality.

This vision also includes converting the Orion Capsule room into a SPARC "museum," that connects our foundation past to build our future. This is where we will highlight our accomplishments; house photos from past flight simulations, highlight our alumni, and showcase our NASA artifacts.

It will be an exciting time for us as Boosters to help SPARC achieve these ambitious, and the result will have an enormous impact on the future of NEHS students. Look for more details on these plans and how you can get involved in the coming months.

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NEHS SPARC Boosters

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