

Fairmont Preparatory Academy
ADVANCED SCIENCE &
ENGINEERING NEWSLETTER

MAY 2015

VEX Robotics Team Goes to World Semi-Finals!



VEX Team 6714A Flamerseeker compete in the VEX World Championship



In April, members of Fairmont Preparatory Academy's robotics club, VEX Team 6714A Flamerseeker (Frank Z., Cloud W., Bill H., and Marc S.) competed in the VEX World Championship in Louisville, Kentucky. For three days, more than 500 teams from the United States, Asia, and Europe participated in the annual tournament involving robots and their "drivers."

Following a series of practice and qualifying matches, the Fairmont team ranked 24th in the semi-final round. Overall, the team members left Louisville with a memorable team building experience. They also appreciated the opportunity to interact with fellow students from around the world who share their interest in this rapidly growing technological field.

Each match involved two teams competing to earn points in demonstrating robot operation and programming skills. Teams were also tested in the areas of CAD, animation, and essay preparation as part of the online component of the tournament.

ASEP Students Celebrate Engineers Week at Boeing



Each year, in February, Engineers Week is held. This is a time for "organizations and volunteers to make a difference by engaging students in engineering and celebrating the profession."

Once again, Fairmont Advanced Science and Engineering Program students were invited to Boeing in Huntington Beach to take part in a special program designed to celebrate the occasion.

The students were treated to guest speakers, panel discussions, and special presentations designed to inform them about Boeing, careers in engineering, and advice on majoring and pursuing a career in engineering. After the formal program, students were treated to lunch and took part in the E-week fair and competitions. At the tech fair, students walked through a display area and spoke to several professionals about their careers and specific areas of interest. Students had the opportunity to view industrial grade 3D printers in action.

Finally, students competed against each other and Boeing professionals in the egg launch competition and the paper airplane design competition. The students returned to campus after a fun and informative day with a better understanding of the world of engineering.

ASEP Students Visit Applied Power Concepts



Fairmont ASEP students visit Applied Power Concepts in Anaheim, CA

On Thursday, March 12th, Fairmont Advanced Science and Engineering students traveled to Applied Power Concepts to learn about what they do, tour the facility, and take part in some science activities. *“Applied Power Concepts provides product development, manufacturing, and analysis services for the chemical process industry, the biotechnology process industry, and the renewable energy generation industry. Our product and process experience also includes such diverse industries as pharmaceuticals, cosmetics, toiletries, foods, and household products.”*

The trip began with a presentation by Dr. William A. Farone, a world renowned expert in physical chemistry and founder of APC. He spoke to the students about global warming and the issue of plastic bags. He encouraged the students to think independently and approach their research objectively. Next, the students were led on a tour of the lab and factory while being informed about all the steps in developing a product from design/research to manufacturing.

After lunch, the student were split into groups and rotated through numerous hands-on activities, each led by an expert from Applied Power Concepts. The activities included carrying out emulsification, as is done in the cosmetics industry, and learning about viscosity analysis. Students even had the opportunity to perform some metal welding!

Closing of Another Great Year!

The 2014-15 school year is winding down and seniors in the Advanced Science and Engineering Program are preparing for the next chapter in their lives. As they prepare to graduate, they will be honored with a special ASEP Senior Farewell Luncheon on May 26th. This annual tradition follows the Prep Senior Farewell Ceremony. Family of seniors are welcome to join. **Please RSVP to Mrs. Jaya Leslie by May 15th at jleslie@fairmontschools.com.** Commencement will be held on May 28th at Pearson Park in Anaheim.

ASEP seniors will be attending top universities in the

country including **CalTech, Harvard, Stanford, Columbia, Brown, Cornell, USC, and all the UCs.** Wherever they go, we know that our students will be well prepared for college science, math, and engineering courses and we wish them the very best!

The underclassmen will be taking part in some tremendous summer opportunities. Students will be attending training programs and completing internships at numerous prestigious universities and companies including CalTech, Stanford, Boeing, and Applied Power Concepts.

ASEP Scholar-Athletes



Max P., 11th grade

Fairmont is known for its outstanding academic programs and the Advanced Science and Engineering Program has many bright, dedicated, and successful students. These students excel in rigorous course schedules filled with advanced and university level classes. Despite the time and effort it takes for their academic accomplishments, the success of these students is not limited to academics.

They are well-balanced and able to excel in their other pursuits as well. In addition to being outstanding musicians, artists, leaders, and dedicated volunteers, the Program is very proud of and supports the amazing athletic talents and accomplishments of its students.



Cierra H., 10th grade

Earlier this year, Skylar H. was named scholar-athlete of the week by the *Orange County Register*. Recently, the Fairmont Prep Varsity Girls Basketball team won the CIF (California Interscholastic Federation) Championship with the help of ASEP sophomores Cierra H. and Jyothii K. Additionally, Cierra was recognized as a member of the All-CIF team, the All-County team and named OCVarsity girls basketball athlete of the week for March 9.

Junior Edgar C. is currently in pursuit of his second consecutive CIF Championship in swimming and recently received the honor of Academic All American from USA Swimming. Junior Max P. is a five-star tennis player and ranked as one of the top 60 high school players in the nation.

To achieve this level of success academically and athletically is very rare and something to be lauded. We wish to congratulate all ASEP members for their achievements, inside and outside the classroom.



Edgar C., 11th grade

Accepting Applications for 2015/16!

The 2015-16 year is just around the corner! We will be adding two new classes. Freshmen will take Methodologies in Science & Engineering, which will be a year-long course. Sophomores will take the new Bioengineering Course. In addition, we are planning many educational, fun, and exciting events for next year.



Applications are now being accepted! Any student entering their 9th, 10th, or 11th grade year is encouraged to apply and be a part of this incredible program.

To apply, please contact Jaya Leslie, Director of ASEP, at jleslie@fairmontschools.com

Students Shine at Physics Olympiad Semi-Finals!

Congratulations to Xinta Y. and Claire H. for earning awards at the rigorous semi-finals of the 2015 U.S. Physics Olympiads. Xinta received a Bronze Medal, and Claire received an Honorable Mention.

Only 382 students from around the country were invited to participate at this stage of the prestigious competition. Out of this group, only 20 will go on to participate in an intensive ten-day camp at the end of May. Five students and one alternative will be selected to compete in the International Physics Olympiad as the U.S. traveling team.

ASEP Speaker Series

Dr. Anthony Carlos, University of California Irvine

On January 16th, Dr. Anthony Carlos spoke to Fairmont Prep Academy's Advanced Science and Engineering Program (ASEP) students about his research into the causes and potential breakthroughs in Alzheimer's and related brain diseases. He showed brain scans, pointing out the change in brain chemistry, and activity due to plaque buildup from proteins in the brain.



Dr. Carlos speaks to ASEP students on January 16, 2015

He discussed the different methods that may lead to preventing or potentially reversing the effects of the disease using the immune system to target the plaque. He also discussed the importance of engineering in diagnosing and studying Alzheimer's and how engineering is being used to improve the quality of life for those afflicted. The presentation concluded with Dr. Carlos answering questions from the students and faculty in attendance.

Ben Fleishman, Engineering World Health (EWH)



Mr. Fleishman speaking to ASEP students on March 26, 2015

On Thursday, March 26th, Ben Fleishman from the Engineering World Health organization spoke to students in the Advanced Science and Engineering Program.

"Engineering World Health is a non-profit organization that mobilizes the biomedical engineering community to improve the quality of health care in hospitals and clinics that serve resource-poor communities of the developing world."

Mr. Fleishman spoke to the students about what EWH does and how he uses

his engineering background to help improve health care all over the world. He spoke about the problems that are specific to under-developed countries such as inconsistent power supplies, equipment maintenance, and the donation of non-useable medical equipment.

He discussed how critical thinking and 'quick fix' techniques are often needed to get the best possible healthcare to those in need. He increased the students' awareness of the difficulties in delivering quality healthcare and encouraged them to commit to do their part in such an important cause. Sophomores in the new Bioengineering Course will be working with EWH next year.

ABOUT ASEP

The Advanced Science and Engineering Program began as the Medical Magnet Program in 2003, and expanded to include an Engineering Magnet Program in 2009. In 2013, the two separate tracks were combined into one comprehensive program.

The purpose of the merge was threefold: first, to give students greater flexibility in choosing courses and designing their schedules; second, to enable our advanced science and engineering teachers to partner together and thereby enhance course offerings to reflect crossover between the two fields; and finally, to model trends in college admissions, which favor programs that allow students more flexibility to explore within a given field.

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