



**FRC Team  
2199**

FIRST Robotics Competitions (FRC) combine the excitement of sport with the rigors of science and technology to provide students a “real-world engineering” experience.

~ [www.usfirst.org](http://www.usfirst.org)

## ROBO-LIONS ROAR FOR STEM EDUCATION AND OPPORTUNITY FOR ALL

The Robo-Lions have been actively promoting the growth of programs for Science, Technology Engineering and Math (STEM) in schools and communities. In March, the Robo-Lions partnered with other FRC and FTC Teams to bring this message, first to Congress and then to the Maryland manufacturers and our new Governor. The team has plans to continue these advocacy efforts, with the goal of making opportunities for FIRST Robotics and STEM activities available to every student in our county and the surrounding region, throughout the state and nationwide.

On March 4th, Dean Kamen was part of a panel addressing the Congressional STEM Education Caucus on the importance of growing a diverse STEM pipeline. Other panelists included Comcast Senior Vice President Sherita Caesar (shown with Dean Kamen at right), who praised FIRST as a program that helps encourage diversity in STEM, including providing great opportunities for young women to take on challenges in math, science and engineering.

The Robo-Lions *Recycle Rush* robot made the trip to Capital Hill with team co-Captain Matt O. He shared his enthusiasm with the Congressmen, staff members, and technology business leaders in



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*Top: Dean Kamen makes the case for more robotics programs and support from legislators to make robotics as available as sports programs.*

*Center: Robo-Lion Captain Matt O., Dragonette Elena M. show off robots and help support Dean in encouraging Congressional*

*Left: Robo-Lions, Dragonettes and Gear Grinders all team up to share their robots with Governor Hogan and at the RMI Gala. (Photo courtesy of the Executive Office of the Governor)*





## GROOVY ROBOTS

On Friday February 27th, the Robo-lions visited Eldersburg Elementary School for the annual Groovy Science night. It was not only a great opportunity for the Robo-Lions to show what their science and technology skills have allowed them to accomplish, but a great venue for sharing the spotlight with FTC Team 4991, the Gear Freaks.

Team 4991 is the first team to have been sponsored by the Robo-Lions, and had they built another great FTC robot, while also growing their team to include students from public, private and home schools.

Groovy Science Night attracts nearly all the students at Eldersburg Elementary for an evening of experiments, hands-on demonstrations and entertainment. The Robo-Lions and Gear Freaks set up in the Music Room adjacent to the main event in the multi-purpose area, and always have a steady stream of kids who are ready to try their hand at driving a robot.



*Future Robo-Lions drive FTC and FRC robots at Eldersburg Elementary*



## FLL AND FTC SEASONS WRAP UP, FRC COMPETITION APRIL 3-4 CHAMPIONSHIPS COMING UP!

From September to February, there were many robotics teams active in the Carroll County area with ties to the Robo-Lions. As our non-profit PIE3 sponsors more and more teams, many of them the outgrowth of our camps and exhibitions, the success stories start to pile up. The Flying Platypi3 ended up at the FLL State Tournament in their first year, and the Robo-Sapiens went from FLL to FTC and won their first tournament. Four of the five FTC teams linked to the Robo-Lions went to the State Tournament. They included the South



*Left: FTC Team 8536, the RoboSapiens won their first tournament at Sidwell Friends in December. They began as an FLL Team.*

*Right: Rookie FLL Team 2217, the Flying Platypi3, at UMBC for the State Tournament.*





## ROBOTIC ASSISTIVE ROVER (ROAR) PROJECT GETS FUNDING



In Fall of 2014 the Robo-Lions were asked by the Carroll County Schools Assistive Technology Team to assist in providing mobility for students who were too small for standard motorized wheel chairs. This smaller car, outfitted with one of several car seats, is an option for the smaller students and a way for them to learn to control a vehicle and prepare to eventually drive their own wheelchair.

The Robo-Lions began repairing CCPS's existing "Cooper Car" Mobility Device. The Cooper Car (shown with team members at left) is similar to a Fisher-Price Jeep but allows a car seat to be strapped to it and has special electronics that allow control using head movements. Unfortunately the Cooper Car was rather expensive (\$3000), and no longer maintained by the manufacturer. They are also difficult to find, and since additional mobility devices are needed for the future, the Robo-Lions are currently designing

and constructing the RoAR— Robotic Assistive Rover to fill this need using parts from old robots.

The first job for the team was to get the existing car in working order. Repairs were made, but only temporary. It became clear that several new cars were needed. The Robo-Lions were awarded a \$1000 grant by the Maryland Space Business Roundtable, which will fund the first prototype and allow for delivery in the next school year. Hopefully, at least two or three cars will be delivered and maintained.



Carroll High School RoboCavs (Black and Gold Teams 6284 and 8479), the Robo-Sapiens (Team 8536) and Cubix^3 (Team 8221). Cubix^3 won the tournament and went on to win the Super Regional and will be going to the Championship April 23-25 in St. Louis.

Best wishes from the Robo-Lions to all our affiliated teams! We hope to see many of them at the University of Maryland, College Park, for the Chesapeake Regional.



Above: Teams at the FTC State Tournament: RoboCavs Gold, RoboCavs Black and Cubix^3



**ROBO-LIONS ROAR .... (CONT)**

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attendance. The Robo-Lions partnered with the Glenelg Country School Dragonettes for both of the outreach events in March. The Dragonettes are an all-girl FIRST Tech Challenge team from a nearby private school. Robo-Lions mentor Rose Young teaches at Glenelg Country School, and this connection has provided joint outreach for the teams. Other GCS and PIE<sup>3</sup> FTC regular join the Robo-Lions, helping make the voices of all the teams stronger in their efforts to encourage more participation in STEM fields.

Manufacturing in Maryland is in critical need of a strong pipeline, and March 26th found the robots with FRC and FTC team members at the Regional Manufacturing Institute (RMI) 25th Anniversary Gala in Baltimore. Governor Hogan was the keynote speaker, and he enthusiastically visited with students and learned about how the programs benefitted them.

These opportunities for reaching out to policymakers are critical to the growth of robotics programs and other activities to promote and encourage the next generation of innovators. The Robo-Lions recognize this need, and partner with others with a similar vision. For this reason, we plan to participate in the 2015 2nd Annual Conference presented by FRC Team 27, Team RUSH in June. We are inviting all of our FTC partners to join us as we participate in the ongoing discussion on a national level to encourage STEM education and participation in FIRST robotics.

*Left: Comcast's Sherita Caesar gets a selfie with Dean Kamen as Matt and Elena look on.*



**UPCOMING EVENTS:**

- ⇒ Chesapeake Regional FIRST Robotics Competition April 3-4, University of Maryland Xfinity Center.
- ⇒ Spotlight on Youth April 11th, Winters Mill High School in Westminster
- ⇒ FIRST National Advocacy Conference June 14-16, Washington, DC

*Thanks to our Sponsors! Please join us at the Chesapeake Regional*

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