

The background of the flyer is a composite image. On the left, a close-up shows a student's hands working on a LEGO Mindstorms robot, which is a white and black construction with various sensors and wheels. On the right, an aerial view of Lawrenceville School is shown, featuring a large, historic brick building with a prominent arched entrance and a courtyard surrounded by green trees.

# GoWELL Storming Robots AI Summer Session Driverless Cars & FLL Competition Clinics 2-week Immersion Program @ Lawrenceville School

For 9 to 13 year olds

July 21 to August 3, 2019

Want to work with technologies that create unmanned vehicles?

Want to fully automate robots for a 2-on-2 football player game?

Storming Robots students regularly win top awards at robotics competitions. It has an impressive track record of helping students gain admissions to top U.S. universities, including Stanford, MIT and Cornell.

Learn the latest in robotic automation and AI. Whether you are working with VEX, LEGO or Arduino, learn to make your robot "smart"!

Equip yourself with robotic skills to help innovate our world

## Program Highlights

- **Opportunity to learn from the best.** International students now have a rare opportunity to join the premier robotics club in the U.S. Storming Robots has a proven track record in equipping its students with advanced robotics skills. Its student teams regularly win top awards at robotics competitions.
- **Full robotics immersion experience with specialized support for younger learners.** A full-day program with technical instruction by experienced instructors, with emphasis on working in pairs. Students work alongside the very best students in U.S. and our students have additional bilingual teaching assistants supporting them.
- **Focus on AI.** Focus on the latest in wireless communications and motion sensing technology working with Graphical RobotC® and LEGO® Mindstorms™. The programming knowledge gained is key for advancing a student's robotics skills, regardless of system – VEX, Arduino or others.
- **Live and learn at a prestigious boarding school.** Students will be situated at The Lawrenceville School, with renovated dormitory space, classrooms, athletic facilities and cafeterias. Lawrenceville is a 10-minute drive from the #1 ranked Princeton University.
- **Program flexibility, allowing for student choice.** Students can opt to build a driverless car or join a FLL competition course. Students also enroll in a robotics language and knowledge preparation course prior to the one-week immersion. However, if a student prefers, he or she can opt for a Nike sports camps at Lawrenceville during this week.



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## Storming Robots

One of the most sought after AI robotics clubs in the U.S. with top students often traveling long distances to be part of the club. For every year in its 10 year history, Storming Robots students have won many awards at global robotics competitions such as RoboCupJunior and ZeroRobotics. SR's founder and head coach, Elizabeth Mabrey, has a master's degree in Computer Science and has been in senior positions in the software industry for over 14 years. In addition to her substantial experience in robotics education, Elizabeth is on the Technical Committee of the International RoboCupJunior Rescue League.

Many SR students have matriculated into the Ivy Leagues. Just this past December, its students received early admissions into Stanford, MIT and Carnegie Mellon. To learn more, please see <https://feedback.stormingrobots.com>.

## The Lawrenceville School

The Lawrenceville School is one of the top 4 boarding schools in the U.S. Many of their students gain acceptances into the Ivy Leagues, especially nearby Princeton, and other top ranking universities.

Students will be stationed out of this beautiful, prestigious private school. Students will reside at one of Lawrenceville's popular dormitories and have access to their full campus, including athletic facilities and cafeteria. All Week 1 classes will be on campus at Lawrenceville. Week 2 robotics immersion will be at SR's laboratories.

## GoWELL Education

Gowell is a Hong Kong-headquartered education company focused on providing international education opportunities to students. It has established partnerships with leading U.S. universities, such as UC Davis and NYU, so to offer official programs with personal support, ensuring that students receive an enriched and fun-filled academic and cultural experience. Gowell also has a master licence from the ACT to operate their university preparation program, the GAC Program, at any location in China. Gowell is managing the overall logistics of this program.



## Highlighted Achievements by SR Teams RoboCupJunior (RCJ) Championships

2018 World RCJ Championship  
Montreal, Canada  
1st place Algorithms  
5th place Rescue Maze Challenge  
1st place Teamwork

2018 USA RCJ  
1st place Maze League  
1st place Line League  
1st place OnStage League

2017 World RCJ Championship  
Nagoya, Japan  
1st place Engineering Strategy  
2nd place SuperTeam Challenge  
1st place Team Spirit

2017 USA RCJ  
1st place Algorithms Award  
1st place Documentation  
1st place Mechanical Design  
1st place Teamwork  
1st place Rescue Maze – Open  
1st place Rescue Line – Open  
1st place Rescue Line – Primary ...

2016 World RCJ Championship  
Leipzig, Germany  
1st place Hardware Solution

2016 USA RCJ  
1st place Algorithms  
1st place Electronics Design  
1st place Teamwork  
1st place Rescue Maze – Open  
1st place Rescue Line – Open  
1st place Rescue Line – Primary ...

2015 World RCJ Championship  
Hefei, China  
2nd place – Individual Team

2015 USA RCJ  
SR teams won 10 of 17 participated awards  
1st place Mechanical Design  
1st place Rescue Maze – Open  
1st place Rescue Line – Primary

2014 World RCJ Championship  
João Pessoa, Brazil  
1st place Rescue A – Primary League  
1st place Technical Engineering

2014 USA RCJ  
1st place Rescue A – Secondary  
1st place Rescue A – Primary  
1st place Rescue A – Secondary  
1st place RoboDance – Primary  
1st place Rescue A – Best Robots Design  
1st place Rescue B – Best Robots Design  
1st place Rescue B – Best Software Design



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## Week 1 The Preparation Program

The first week is a preparation week – gearing up student minds and bodies. Students have two options:

- **Robotics preparation program.** Features classes on relevant English language, hot topics in robotics, university and career opportunities for STEM students and the American youth culture.
- **Nike tennis / baseball / softball camp.** A sports immersion program working with the very best coaches in the U.S. and after one week, students will become much more skilled in the sport that they chose.



Option 1  
Robotics Preparation Program

This program is taught directly at The Lawrenceville School by experienced instructors. The classes combine classroom teaching, learning from multimedia sources, group discussions and small group interaction. On the last day, the students' learning experience culminates with an American culture, STEM and learning trip to nearby Princeton University, the #1 ranked national university. All activities this week are managed by Gowell Education. Topics covered:

- **American Youth Culture.** Students will interact with domestic students during the program. Having a good understanding of American youth culture – recent trends and issues – is important.
- **Robotics English.** Strengthening students' language skillsets with focus on robotics and the development process.
- **Robotics Knowledge.** Introducing exciting trends in robotics and AI today.
- **Paths Forward with STEM/Robotics.** What initiatives do other students take with robotics? Competitions? Which universities are strong in STEM? What are the possible careers in this area?



Option 2  
Nike Sports Camp

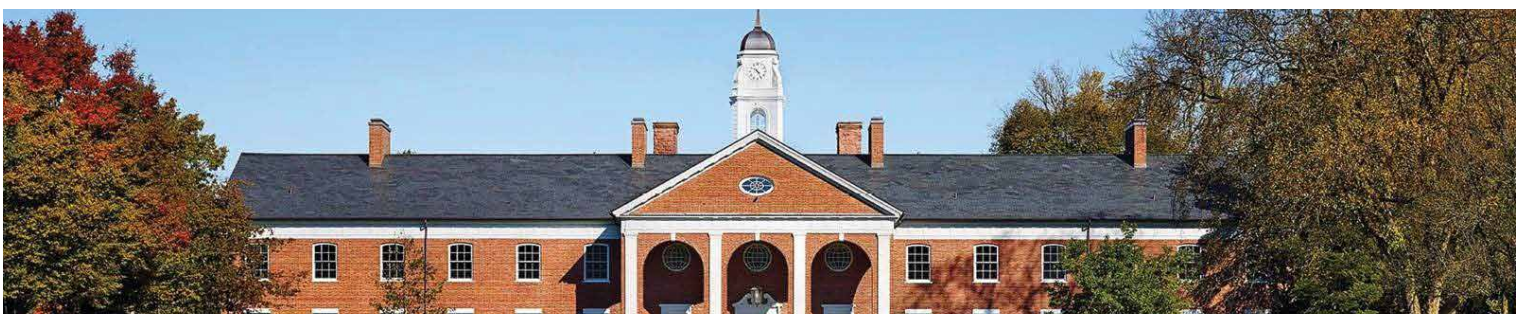
For students who prefer a sports experience, they can join a 5-day intensive Nike Sports Camp directly at Lawrenceville. Students have the option of a tennis program or baseball/softball program. Students will be in class with other American students.

### Nike Tennis Camp

The Nike program at Lawrenceville is particularly strong. Its co-director Billy Pate is the head coach of Princeton's men's tennis team. Co-director Todd Doebler is head coach of Amherst College's men tennis team. The Princeton team and Amherst teams are ranked 4th and 8th, respectively, in the U.S. The daily schedule consists of stretching, tennis instruction, drills, match play and doubles play.

### Nike Baseball/Softball Camp

Baseball is a unique combination of athletics, teamwork, strategy and culture. Nike's baseball/softball head coaches are lead teachers from Lawrenceville and Stuyvesant High School in New York, all top high schools in the U.S. The daily schedule consists of stretching, instruction, drills, contests and games.





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## Week 2 The Robotics Immersion Program

Students will be working at SR's laboratories and have an opportunity to interact with American students. Aside from daily instruction, students work in pairs, with daily challenges and mini-competitions. Focus is on the analytical process, problem solving with computer programming, scaffolding software architecture concepts and a proper engineering process.

In addition, students can attend a symposium with top STEM high school students at the prestigious New Jersey Governor's School of Engineering.

SR's teachers are all fully certified by Carnegie Mellon or similar institutions and the student-teacher ratio is 8:1. With additional bilingual teaching assistants, this student-teacher ratio is considerably lower.



**Team SR-OnStage: Susan Lee (Gr.9) and Michelle Bryson (Gr. 10)**



**Course Option 1  
Robo500 Grand Challenge and Drag Racing**

Students simulate the DARPA Grand Challenge, a U.S. government-funded racing competition for autonomous vehicles. This competition has led to the development of many technologies that autonomous ground vehicles use today.

In this program, students will build and program an unmanned vehicle that will race on a treacherous terrain, uphill, through speed bumps, dark tunnels, and more. Students will learn how the formation of gears systems affect speed and torque of a robotics system by using the application of math concepts.

This challenge provides plenty of creative time to further develop analysis skills and critical thinking. Students learn to handle mechanical difficulties and computer programming issues that even advanced users encounter. Students will take home their own Engineering Journal Log Book.

### Robo500 Grand Challenge and Drag Racing

Date	Activities
Day 1	Fundamentals in Mechanical Tips, Programming
Day 2	Basics in Sensors Feedback - Bumper and Line Trace
Day 3	Encoder vs Distance vs Rotation
Day 4	Prepare for the Final Robo500 Challenge
Day 5	Presentation / Contest Day



**Course Option 2  
First LEGO League Competition Clinics**

This program prepares students for the First LEGO League Robotics Competition with focus on mechanical, programming and mathematical aspects. Students learn the importance in sound mechanical structures, encoder/gear mathematics, designing flowcharts as well as troubleshooting. Students will work on the following:

- Mathematics applications regarding encoder vs. distance travel and rotation, and how the gear system affects performance.
- Sound mechanical structures, such as weight distribution, center of gravity, friction, 2-wheel drive vs 4-wheel drive, orthogonal vs triangular structure, etc.
- Project planning with proper Engineering Journal practice.
- Systematically troubleshoot and utilize mathematics for analysis
- Effective programming with functional modules; basic control structure in computer programming vs logic; and data collection.

### First LEGO League Competition Clinics

Date	Activities
Day 1	Building Robots and Basics in RobotC
Day 2	Knowing Encoder vs Distance – Math work and programming
Day 3	Understanding how to manipulate the Color Sensor – cooked vs raw data
Day 4	Handling obstacles
Day 5	Work on major challenges that FLL students encounter

Note: The above schedule may be subject to slight changes based on students' progress.



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## Nearby Excursions & University Tours

Centrally situated in suburban New Jersey, students are able to easily visit the major cities and universities on the East Coast. On the weekdays, as Lawrenceville is only a 10-minute drive to Princeton University, students will enjoy a campus tour and admissions office information session at the #1 national university in the U.S., as ranked by *U.S. News & World Report* in 2018.

On the weekends, students can travel to New York and Philadelphia, visiting popular sites such as the Statue of Liberty, Central Park, Independence Hall and Liberty Bell and the Reading Market Terminal. Students will can tour both University of Pennsylvania and Columbia University. All excursions will be led by experienced guides.



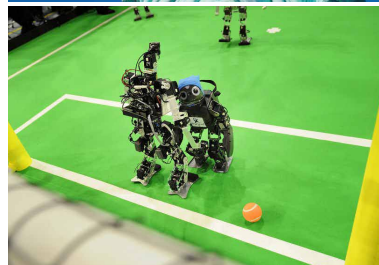
## Daily Life at Lawrenceville

Students will have their dormitory, classrooms, cafeterias and recreational facilities all within several minutes walk within campus. Students can use the athletic facilities at any time and dine at Lawrenceville's cafeterias, allowing for a complete boarding school experience.

Right outside the school is a small town in which students can buy personal supplies and run errands accompanied by our resident advisors.

## Bilingual Tutors

Students will be accompanied by bilingual teaching assistants in the classroom and resident advisors outside the classroom, helping ensure an enjoyable and smooth experience during the program.



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**Gowell** Storming Robots