



YEA NEWSLETTER

Newsletter produced by Young Engineers in Action

YEA Reaches Out to More Students with Various Summer Events

Written by: Emily Ren



YEA organized various free STEM events and activities this summer to reach out to more children in the community. The pictures above show the students participating in the fun activities of the YEA Science Experiments workshop in August 2022. (Photos: Grace Zhao)

Young Engineers in Action (YEA) organized a variety of free events and activities throughout the summer to arouse more students' intellectual curiosity in STEM.

The events included the American Rocketry Challenge (TARC) summer camp, the Rubik's Cube competition, the Math Challenge, the Science Challenge, the Fun Bio Chem Workshop Series, the Pathway to USABO Workshop Series, the Science Experiments Series, the Hackathon team activities, and the 3D Printing workshops and competitions.

"Summer is the best time for us to spark children's interest and feed their passion. That is why YEA has been organizing free events and activities throughout this summer," said Matthew Phan, president of the YEA student board, and Emily Ren, executive vice president of the YEA student board.

YEA was founded by then high school students Nicholas Fu and Lia Tian in May 2016, and has grown into a non-profit organization with participants actively involved in promoting STEM in local communities.

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Students Hone Skills in YEA Rubik's Cube Competition

Written by: Matthew Phan

YEA reintroduced its annual Rubik's Cube Competition on August 14. With all the family members of competitors coming to watch as well, the event became a lively and fun competition.

The rules for the event were simple. The event was one and a half hours long, with competitors facing off against each other in five consecutive rounds. Each round consisted of five different solves, and from there, the average of the times was taken. Afterwards, the average times for every competitor per round were compared with each other, with the competitors gaining points based on their respective rankings. Finally, once the five rounds were over, the competitors added up their points to see who had the most.

It was nice to finally have this event in person and amazing to see everyone show up to hone their skills on the Rubik's Cube while also interacting with each and having a fun time. The competitors that came out



⬆ The timer is at 0.00, and the competition is about to officially begin. (Photo: Matthew Phan)

showcased an outstanding performance and showed good sportsmanship as well.

The first place winner managed to get an average time of fifteen seconds per solve throughout the entire competition. The other competitors did great as well, getting times around twenty and thirty seconds. In the end, prizes were given out to the first place, second place, and third place winners. The prizes included more Rubik's types, such as the skewb, 4x4 Rubik's cube, and megaminx.

Thank you to all of the competitors, volunteers, and family that came out. We look forward to seeing you all again next year!



⬆ YEA students attending the Rubik's Cube Competition. (Photo: Matthew Phan)



⬆ Different types of Rubik's Cubes have different levels of difficulty. (Photo: GoCube)

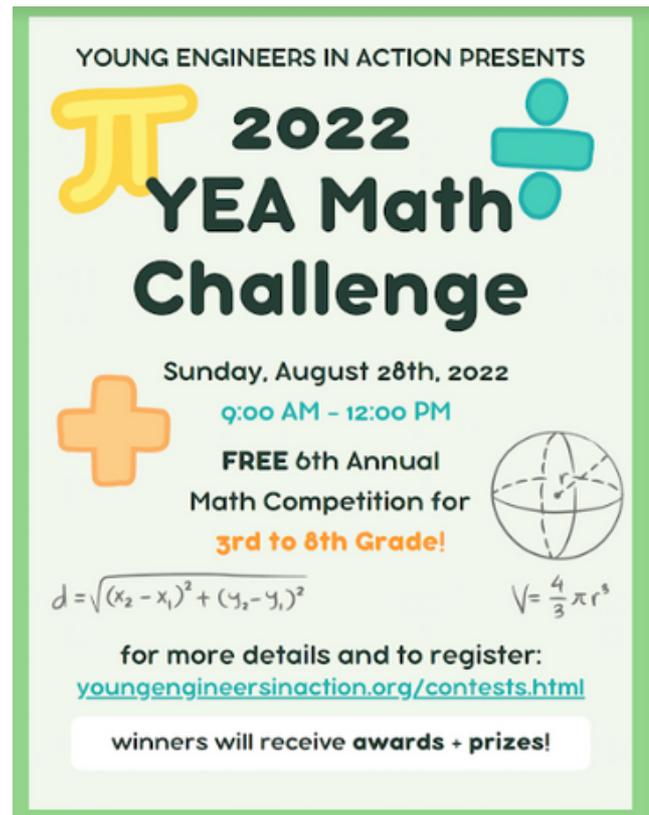
Winners Announced for the YEA Math Challenge

Written by: Jessica Li

YEA Math Circle once again hosted the Annual Math Challenge in August. With over 30 participants, it was a great wrap-up to the summer. Students challenged themselves to AMC-style questions and took the initiative to explore what they can accomplish and what other areas they can improve on. Congratulations to all the students who signed up!

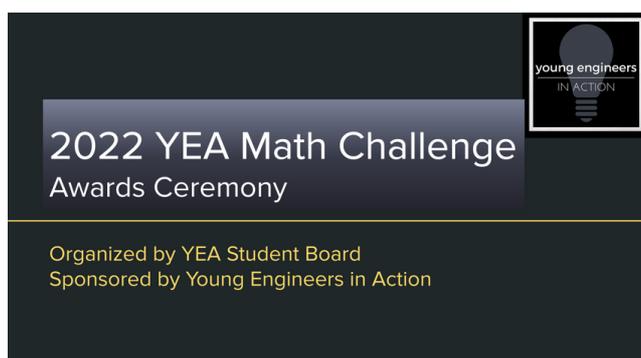
YEA would like to extend many thanks to the families that donated to this cause and the YEA student volunteers that made the event possible. This year was the first year where all the exam questions were student-made. Even though there were some small dilemmas along the way, overall, the event was executed smoothly.

The first place winners were able to receive a 3D-printed trophy designed by YEA Student Board as well as free YEA merchandise. It was a pleasure to see all the participants. This year's contest was still online, but hopefully we will see each other in-person at the next annual YEA Math Challenge in the summer of 2023! Until then, practice hard, play hard!



👉 The 2022 YEA Math Challenge Flyer.

The 2022 Math Challenge winners are: for 4th grade, Joshua Wang (1st place), Ivy Song (2nd place), Xavier Zhang (3rd place); for 5th grade, Casper Wen (1st place), Abhinav Prabu (2nd place), Ariel Lam (3rd place); for 6th grade, Ishaan Chauhan (1st place), Jonah Wang (2nd place), Joshua Xu (3rd place); for 7th grade, Jayden Sun (1st place), Isabelle Parks (2nd place), Annie Yan (3rd place); for 8th grade, Daniel Shao (1st place), Darsh Maheshwari (2nd place), Alec Zhao-Ye (3rd place).



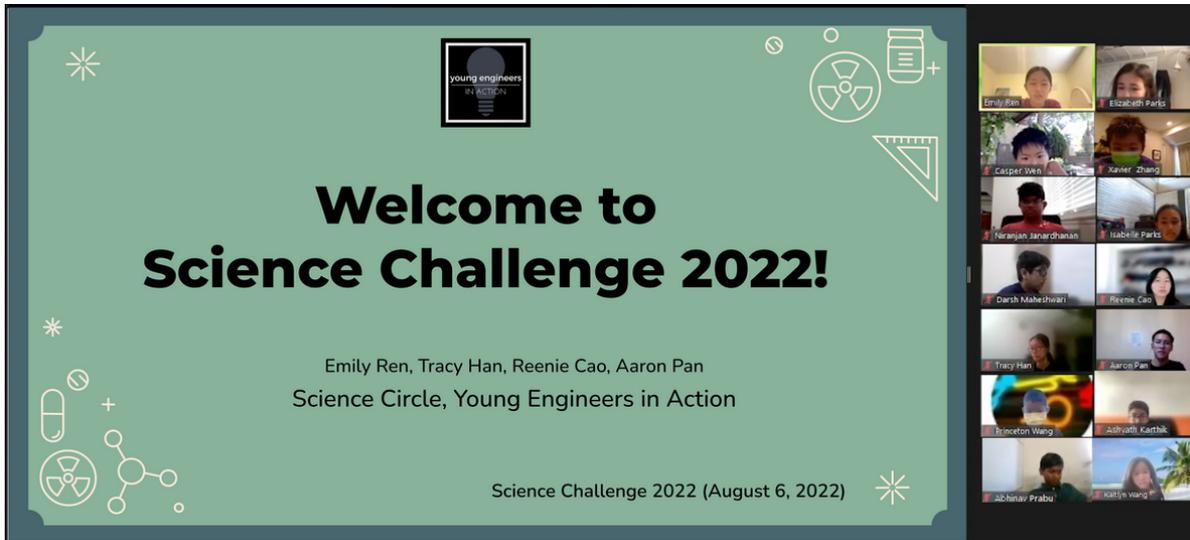
👉 A screenshot of the 2022 YEA Math Challenge awards ceremony in August 2022.



👉 A screenshot of the 2022 YEA Math Challenge awards ceremony in August 2022.

Science Challenge Fuels Students' Passion for STEM

Written by: Emily Ren



Students competed in the virtual Science Challenge on August 6 2022. (Photo: Emily Ren)

YEA organized its second annual Science Challenge virtually on August 6, 2022, fueling students' passion for a variety of sciences. Six students received awards for scoring highest in the competition.

During the 4-hour online event, participants logged into a proctored Zoom meeting and challenged their knowledge and skills about the different fields of science ranging from biology, chemistry, life sciences, environmental science, physics, computer science, and more.

The competition session was followed by a 1-hour review session and the virtual

awards ceremony.

The 2022 YEA Science Challenge award winners for 3rd to 6th grade include: Ishaan Chauhan (1st place), Xavier Zhang (2nd place), and Casper Wen (3rd place).

The 2022 YEA Science Challenge award winners for 7th to 9th grade include: Darsh Maheshwari (1st place), Isabelle Parks (2nd place), and Niranjn Janardhanan (3rd place).

The 2022 YEA Science Challenge was hosted by Emily Ren, Tracy Han, Reenie Cao, and Aaron Pan.



Winners were announced at the 2022 Science Challenge awards ceremony on August 6, 2022. (Photo: Emily Ren)



Winners were announced at the 2022 Science Challenge awards ceremony on August 6, 2022. (Photo: Emily Ren)

Intro Textbook Published on Fun Bio Chem Series

Written by: YEA Newsletter Reporter

Emily Ren, executive vice president of YEA and lecturer of the Fun Bio Chem Online Workshop Series, recently published an introductory textbook, good for children with a passion for STEM and an ambition to take on an intellectual challenge to dig deep into Science Olympiad topics.

The 100-page textbook consists of 24 chapters, covering fundamental concepts and examples of epidemiology, bioinformatics, anatomy and physiology, environmental chemistry, marine biology, cell biology, and other topics related to life sciences. All of the topics are previous and current Science Olympiad topics tested in invitational, regional, state, and national competitions.

"During winter break last year when I had



Students won awards for outstanding participation in the Fun Bio Chem Workshop Series. Previous winners include Nathan Liu (upper right), Sanjana Hegde (upper left), Darsh Maheshwari (lower left), and some other students. (Photos: Courtesy of the students' families)

Fun Bio & Chem Workshop Series	
Schedule from 7/2020 to 11/2022	
26) Intermediate Epidemiology (2):	5:30 - 6:30 PM, Monday, November 21, 2022
25) Intermediate Epidemiology (1):	5:30 - 6:30 PM, Monday, September 5, 2022
24) Anatomy & Physiology (9) - Immune System:	5:30 - 6:30 PM, Monday, July 6, 2022
23) Anatomy & Physiology (8) - Respiratory System:	5:30 - 6:30 PM, Monday, June 6, 2022
22) Anatomy & Physiology (7) - Digestive System:	5:30 - 6:30 PM, Monday, May 30, 2022
21) Bioinformatics / Computational Biology (3):	5:30 - 6:30 PM, Monday, April 11, 2022
20) Bioinformatics / Computational Biology (2):	5:30 - 6:30 PM, Monday, March 21, 2022
19) Bioinformatics / Computational Biology (1):	5:30 - 6:30 PM, Monday, February 21, 2022
18) Cell Biology (3):	5:30 - 6:30 PM, Monday, January 3, 2022
17) Cell Biology (2):	5:30 - 6:30 PM, Wednesday, December 22, 2021
16) Cell Biology (1):	5:30 - 6:30 PM, Wednesday, November 24, 2021
15) Environmental Chemistry (2) / Green Generation:	5:30 - 6:30 PM, Monday, October 11, 2021
14) Environmental Chemistry (1):	5:30 - 6:30 PM, Monday, September 6, 2021
13) Anatomy & Physiology (6) - Endocrine System:	5:30 - 6:30 PM, Wednesday, August 11, 2021
12) Anatomy & Physiology (5) - Nervous System:	5:30 - 6:30 PM, Wednesday, June 28, 2021
11) Anatomy & Physiology (4) - Sense Organs:	5:30 - 6:30 PM, Wednesday, June 9, 2021
10) Plants (2):	5:30 - 6:30 PM, Wednesday, May 26, 2021
09) Plants (1):	5:30 - 6:30 PM, Wednesday, April 7, 2021
08) Water Quality (Marine Biology / Chemistry) (2):	5:30 - 6:30 PM, Wednesday, March 17, 2021
07) Water Quality (Marine Biology / Chemistry) (1):	5:30 - 6:30 PM, Wednesday, February 17, 2021
06) Anatomy & Physiology (3) - Integumentary System:	5:30 - 6:30 PM, Wednesday, January 6, 2021
05) Anatomy & Physiology (2) - Muscular System:	5:30 - 6:30 pm, Wednesday, December 23, 2020
04) Anatomy & Physiology (1) - Skeletal System:	5:30 - 6:30 pm, Wednesday, November 11, 2020
03) Disease Detectives (2):	5:30 - 6:30 pm, Wednesday, October 14, 2020
02) Disease Detectives (1):	5:30 - 6:30 pm, Wednesday, September 16, 2020
01) Overview:	4:00 - 5:00 PM, Thursday, July 30, 2020

A slide screenshot of the Fun Bio Chem Workshop Series #25 on September 5, 2022 shows the topics and schedule of the first 26 workshops from July 2020 to September 2022. (Photo: YEA Newsletter Reporter)

hosted 15 monthly Fun Bio Chem workshops, I realized that I could take one step further by publishing an introductory textbook on the workshop topics. With the textbook, children in other parts of the world will also have the opportunity to follow the curriculum and explore Science Olympiad topics," says Ren.

The book covers 24 chapters in five units. Each topic is explained with workshop slides, editor's notes, summaries, practice questions, and glossaries. It also includes answer keys, acknowledgements, and an index at the end of the book.

Ren, currently a junior at Diamond Bar High School, has been competing in invitational, regional, state, and national-level Science Olympiad competitions in the past six years. She is also a USA Biology Olympiad (USABO) semifinalist and co-president of the USABO Club at her school.

"It took me almost a year to finish the book. It has been such a challenging but rewarding experience. Hope you'll like the book," said Ren.

Kids Gain Hands-on Experience In Science Experiments Series

Written by: Herrick Wang

YEA hosted three workshops of the Science Experiment Series on August 7, 8 and 13, consisting of three fun events held for rising 3rd to 6th graders to make something cool and learn about the science principles behind it in the process.

The first event was building a balloon powered car and the event went decently well. Participants made a car out of a water bottle, a balloon, wooden skewers, bottle caps, and straws, then raced their cars at the end for some candy. A big problem to fix was keeping the kids more organized, since it got a bit out of control which made the time run a bit short. Other than that, the event was an overall success, as everyone was having fun and laughing.

For the second activity, participants made a colorful bouncy ball out of food dye, corn starch, borax, and glue. Everyone completed the activity and the time was being used well. Some participants were even able to



Students are building a colorful bouncy ball out of food dye, corn starch, borax, and glue in a Science Experiment workshop. (Photo: Grace Zhao)

make two balls, and everyone got to take their home if they wished. The only problem was that some of the bouncy balls were not functional, but those who messed up on the ball were able to make a new one that worked. Except for this, the event went very well, and everyone had a lot of fun making and testing the bouncy balls.

For the third event, participants made a lava lamp out of a water bottle, water, vegetable oil, food coloring, and aqua seltzer. At the end, participants played a jeopardy game for prizes using the knowledge they learned about how professional lava lamps and their lava lamps are made. The event went well as the lava lamps were pretty successful, and looked really nice if you put a light under the bottle. The only real problem was that the event had a bit of time leftover before the event officially ended, which was used to watch some educational videos about science experiments.

All in all the activities went really well and everyone had a bunch of fun, but we hope we can improve on time management for next time!



A student is building a balloon-powered car in a Science Experiments workshop. (Photo: Grace Zhao)

Lava Lamp Experiment Offers Fun Learning Experience

Written by: Reenie Cao

YEA hosted the free Science Experiments Series workshops for elementary students over the summer. One of these workshops, hosted by Reenie Cao on August 13, was the lava lamp event.

Students were able to create their own lava lamps using everyday materials, the main material being Alka Seltzer. Throughout the time frame, students learned about the science behind a real lava lamp and the imitation they were creating.

The steps to make an imitation lava lamp are simple: add water and oil, then a couple drops of food coloring, and add an Alka Seltzer to top it all off. Though the steps are easy, the end result is a beautiful, bubbly lamp that shines with color.

After completing the experiment, students had a chance to earn small prizes through a round of Jeopardy, which not only boosted critical thinking, but also collaboration, as many students had to discuss in order to get the correct answer.

Once a round of Jeopardy was finished, scientific videos showing the process of lava lamp productions were shown, and to top it all off, all students had fun playing interactive games together.

The combination of science and fun not only helped many students gain knowledge about everyday items they may not have thought about before, but also provided a fun and exciting learning environment.



⬆ Students are creating lava lamps with everyday materials in a Science Experiments workshop. (Photo: Reenie Cao)

YEA TARC Summer Camp Expands to Younger Audience

Written by: Aaron Pan

TARC Summer Camp was an amazing success with more than 10 new members joining our community. It is exciting to see rocketry expand to elementary school students and younger audiences.

We were able to launch rockets and enjoy our summer getting to know one another. Some people believe that students should get to know rocketry as a basis for STEM because it helps students learn and comprehend how to solve problems in the real world.

The American Rocketry Challenge (TARC) is the world's largest student rocketry competition. During the 2021-22 competition season, both teams from YEA scored very high. One of the YEA TARC teams placed eighth in the national finals, and the other YEA TARC team made it to the national alternates.

A total of 724 teams from 41 states competed in the 2022 TARC.

YEA Hackathon Team Aims to Rake in Prizes

Written by: Shawn Wang

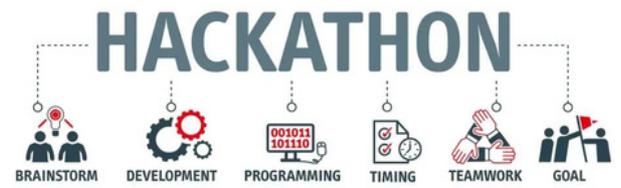
Over last summer, YEA's hackathon club was recognized in two different hackathons, Freyhacks 2022 and NeoHacks 2022. The team spent hours working together both remotely and in person in order to produce programs to submit for each of the hackathons, creating two separate programs for the competitions.

Over the course of two days' worth of work totaling over 15 hours, the group made their submission to Freyhacks. Soon after, the team put together another program to submit to NeoHacks, this time incorporating various front-end and back-end techniques, such as Flask and HTML, to create a website that scours the internet for information.

Throughout this process, the group spent a total of 8 hours in person at the YEA office as well as time at home cleaning up the program. Through their efforts, each of the coders received awards from NeoHacks' program!



◀ Kimi Wan hard at work coding for YEA Hackathon Club's submission to NeoHacks. (Photo: Shawn Wang)



⬆ Hackathon helps students hone various skills, such as programming and time management skills. (Photo: online-tech-tips.com)

Looking Towards the Future

As the school year progresses, YEA's hackathon club is working on their next big project in preparation for future opportunities. Members of the team, including Shawn Wang, Aaron Pan, Jayden Lin, and Kimi Wan, have been working hard to create a particularly noteworthy program that will be sure to rake in the prizes!

What Do We Do

As YEA's hackathon club, we give students the opportunity to participate in hackathons, coding competitions where students can make a name for themselves as coders. Students can use this experience towards their future endeavors as a way to show off their skills and dedication to coding. As part of the club, students will get access to resources and experience coding for companies, meeting quality standards, and making connections along the way.

For those interested in going into computer science as a career, hackathons are a very accessible way to get working experience as well as awards through hard work. Joining in these competitions gives students experience in coding for companies as well as invaluable connections to boost them in their careers!

If you would like to sign up for the Hackathon Club at YEA, feel free to contact YEA or to the club president, Shawn Wang, at swo6o612@gmail.com.

Printing the Future: YEA Inventors Club

Written by: Alex Cheng

Everyone wishes they could have something created to perfectly fit their needs, without having to spend a great deal of time and money. With 3D computer-aided design, we can do just that with minimal time and effort.

In YEA's Inventors Club, students aged 11 to 17 design whatever they want, from pencil cases and phone stands to fun model swords and figurines, to 3D printed rocket parts for YEA's TARC team.

During our biweekly meetings, students collaborate on designs and share their processes in creating both the idea and the invention. With the opportunity to see how others create their designs, students of any skill level and age are able to learn from others' unique techniques and design choices and additions.

YEA's Inventors Club uses Onshape, a free 3D CAD software, and prints members'

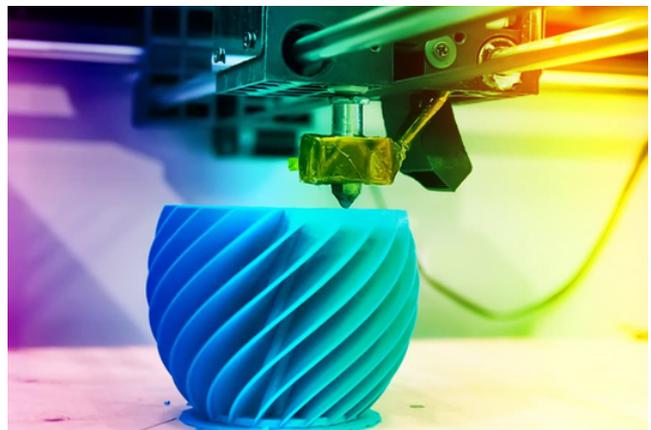


Some universities offer 3D printing services to its students. (Photo: Washington University in St. Louis)

The flyer of the YEA Inventors Club.

designs for free, allowing them to be limitless with their designs and not worry about the cost of printing and filament. Club members are also able to create personalized gifts for friends and family.

3D CAD's abilities are endless. Rising popularity and adoption by companies like NASA and SpaceX means that children can look forward to an exciting pastime that allows them to let their creativity shine and see their ideas literally come to life.



A 3D printer. (Photo: HP)

YEA Student Board 2022

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Vice Presidents:	Jessica Li
	Rose Kong
	Aaron Pan
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Computer Science Director:	Shawn Wang
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Chief Newsletter Editor:	Ethan Chiang
Newsletter Editor:	Bryan Ruizhi Zhang
Science Director:	Reenie Cao
Math Circle Director:	Jaden Zhang
Assistant Math Circle Director:	Yiyan Qu
Inventors Club Director:	Alex Cheng
Environmental Club Director:	Bena Feng
Public Relations Director:	Benjamin Chen
Fundraising Director:	Grace Zhao
Engineering Director:	Herrick Wang
Cyberpatriots Program Director:	Angelina Zhang
Web Designer:	Adora Yan
TARC Captains:	Aaron Pan
	Jessica Li
	Lee Marquez
	Neil Marquez
Board Members:	Ally Li, Darsh Maheshwari, Derek Di, Elliot Kang, Eshan Jagdish, Joy Xu, Laura Liu, Leonard Maeshiro, Rachel Sui

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When you shop through AmazonSmile, Amazon donates 0.5% of all funds to YEA. All the donations will be used to improve YEA's activities to give everyone a fun and educational experience at YEA! There is no additional cost to you.

Thank you for your kind support!

YEA Student Board

YEA Volunteering Program

Are you Interested in volunteering? Do you love STEM? Then you should become a volunteer for Young Engineers In Action! Reasons why you should volunteer:

- To give back to the community.
- To hone your leadership skills.
- To make everlasting bonds with other volunteers, the Student Board, as well as young students engaged at YEA!
- To fuel your passion for STEM.
- To gain volunteering hours since YEA is a certified organization to authorize and recognize dedicated volunteers with the President's Volunteer Service Award.

About US

YEA was founded by then high school students Nicholas Fu and Lia Tian in May 2016, and has grown into a non-profit organization with hundreds of participants actively involved in promoting STEM and bringing positive impact to local communities.

Contact US

For more information, please contact us at one of the following:

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www.youngengineersinaction.org

YEA Programs:
<https://www.youngengineersinaction.org/programs.html>

YEA Events:
<https://www.youngengineersinaction.org/events.html>

YEA Contests:
<https://www.youngengineersinaction.org/contests.html>

YEA Volunteering:
<https://www.youngengineersinaction.org/volunteering.html>

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