

This summer, we had the pleasure of welcoming our largest ESAP class ever! On a sunny July weekend, 221 eager students immediately made their presence felt on Penn's historic campus, ready to soak up as much knowledge as possible and build lasting bonds with their fellow scholars. The coursework was often grueling, with long nights being spent on lab reports, working on code, or perfecting that last piece of your final projects. However, there was some fun mixed in as well! Six Flags. Spa Night. The Talent Show. Spruce Harbor Park. World Cup Watch Party. There was no shortage of good times this summer! This was due in large part to the dedication and hard work of our AWESOME RTAs who seamlessly bridged the gap between work and play.

Most importantly, we hope we accomplished our goal of providing you with a truly unique and rewarding academic and social experience. As you continue on in your sophomore, junior, and senior years of high school, we hope you expand on the knowledge and skills that you learned during your time at ESAP and hold dear the fond memories that were made at Penn. As future engineers, YOU will create the world that has never been, and we look forward to the advancements that our alumni will contribute to society.

Onward and upward!



Nicholas Allen, Residential Director
Nadira Williams, Director

“Scientists study the world
as it is, engineers create the
world that has never been.”

THEODORE VON KARMAN

CLASS OF 2018 STATS

HOMELAND



60%



40%

GENDER



65%



35%

TOP 5 SONGS OF SUMMER

1. Take Me Home, Country Roads – JOHN DENVER
2. In My Feelings – DRAKE
3. Girls Like You – MAROON 5 (FEAT. CARDI B)
4. I Like It – CARDI B (FEAT. BAD BUNNY, J BALVIN)
5. Lucid Dreams – JUICE WRLD



Beverly Yeh

Biotechnology 2008

I teach 6th grade math as part of the 2017 Teach for America Corps in Western Massachusetts.

Jared Katz

Nanotechnology 2008

"I studied neuroscience at MIT, transitioned into software engineering (got some exposure to coding through lab work), left my job at Jet.com in February to start a crypto hedge fund focused on algorithmic trading. Still having trouble committing to one thing since I attended SAAS in 2008!"

Max Kolysh

Robotics 2008

"I run a startup called zinc.io, where we build software for thousands of the largest retailers and online sellers."

Meredith Miller

Biotechnology 2009



"I'm currently studying to be a patent attorney at Fordham Law School. Before this, I got my masters in biotech at Johns Hopkins and was a structural biology researcher at MSKCC. As a result of my research there, I was published in Nature. The program at Penn helped ignite my interest in biotechnology and helped me better understand how to apply the scientific method to unresolved issues in the biomedical field."

Maple Chen

Biotechnology 2011

"I really switched career paths over the past 7 years since I was at Penn, but now I work at American Eagle HQ as a merchant for Women's Jeans! It's super cool and even though it's unrelated to biotech most of the time, the skills and discipline I learned from my science days helps when I'm working on yet another spreadsheet. Hope everyone is doing well no matter where their paths have taken them :)"

Bethany Lennox

Biotechnology 2011

"After completing my bachelor's and master's degrees in biomedical engineering at the University of Rochester, I am now working as a biomedical equipment specialist with the Indian Health Service in Pierre, South Dakota."

Matthew Deaton

Computer Graphics 2011

"I graduated from Drexel University's Interactive Digital Media program, and did my Co-Op at a small video game studio, a startup called Skyless Games. Thanks to a friend and coworker from my Co-Op, I currently work at Game-U, teaching 3D modeling and game design to adults with disabilities. It's a bit unpredictable at times, but it's a very rewarding job."

Remy Gates

Computer Graphics 2011

I'm living out in LA working on music currently and writing poetry. I'm hoping to release some video work soon. My soundcloud is Yummy Online. And my poetry can be found under Remy Gates

Melisa Tokmak

Computer Science 2011

I am a Rotational Product Manager at Facebook. I spent the last year working on great products from Ads to Instagram Growth and Facebook Stories.

Alexander Trick

Nanotechnology 2011

I'm currently a PhD student at Johns Hopkins working on microfluidic diagnostics for the point-of-care

Andrew Remec

Robotics 2011

I'm currently working as a mechanical engineer at DEKA Research & Development.

Rex Ledesma

Biotechnology 2012

I am an Incoming Software Engineer at Airbnb after graduating from Computer Science at the University of Maryland

Conor Ryan

Computer Graphics 2012

"I graduated from Penn in 2017 and spent my first year working at JPM on trading platforms. Currently, I'm working at a fintech startup in their data science team."

Woojin Park

Nanotechnology 2012

"I recently graduated from Harvard University with a dual degree on Geology/Economics. Currently, I'm working on a bank deposit pricing/scoring project at Novantas Inc."



Alan Soetikno

Nanotechnology 2012

I'm working as a data scientist at Amazon.

Melissa Austin

Biotechnology 2013

"This past year I graduated from Johns Hopkins University with a BS degree in Biomedical Engineering. While at Hopkins, I was part of a team that filed a patent for a comfortable and discreet intranasal device alternative to nasal reconstructive surgery. Our device combats nasal breathing issues for people with mechanical nasal obstruction (i.e. abnormal nasal anatomy). I am now a first year medical student at Sidney Kimmel Medical College at Thomas Jefferson University in Philadelphia."

Emmett Neyman

Computer Science 2013

"I've just started my senior year at Penn, majoring in Computer Science. Over this past summer, I interned at Google in Sunnyvale, CA. I worked with their C++ compilers team trying to find bugs in a popular open-source compiler."

Wyatt Mufson

Nanotechnology 2013

"I recently graduated from Northwestern University with a B.S. in Computer Science. Initially, I had accepted an offer to go work for Amazon as an SDE for the Alexa Machine Learning team in Boston, but instead went and founded a blockchain technology startup with a few friends from college named Ryu Blockchain Technologies. We're currently based in Tokyo and are creating technology to allow video game developers to further monetize their games."





Smith Christopher
Robotics 2013

"I completed my BS in Electrical & Computer Engineering at CMU with a minor in Social & Political History. This summer, I interned at Facebook and am now currently back at CMU for my MS in ECE."

Nicolas Lozano Landinez
Robotics 2013

I am a U.S. Army Infantry Officer.

Mihir Pethe
Biotechnology 2014

I am currently a Math major at UT Austin and part of an organization cycling to Alaska to raise money for cancer research. I also recently accepted an internship offer at BCG. I'm looking forward to hearing some of the results of this survey because I am curious to know what everyone else is up to.

Chloe Le
Computer Graphics 2014

"I'm currently pursuing a BSE from Penn's DMD program and a MSE from Penn's CCGT program. I will graduate with my MSE in May 2020. Last summer, I interned as a software engineer at the New York Times. This upcoming summer, I will be a software engineer intern at Facebook or Apple (currently deciding)."

Vivian Shen
Computer Science 2014

"I'm technically a senior at Columbia University studying computer science, but I'm currently taking the fall semester off to be an intern at Disney's research department! In the future, I hope to work in assistive robotics after earning my graduate degree, but I'm still figuring out what I want to do immediately when I graduate in May. All of my free time is spent on ultimate frisbee, a fantastically nerdy sport that I encourage everyone to pick up!"

Nathan Yang
Computer Science 2014

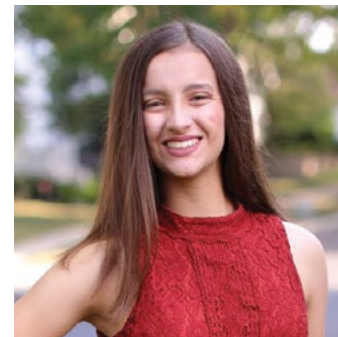
"I'm currently a senior at UCLA studying computer science. Last summer, I interned at Facebook working on the Instagram Core Infrastructure team. This year, I'm the external vice president of the student chapter of the Association for Computing Machinery at UCLA and oversee all external relations for the organization."



Jessica Li
Networks 2014

"I am a senior at Harvard, studying applied math, economics, and computer science. I am involved with Rough Draft Ventures (General Catalyst) as the Harvard venture partner, co-lead of the venture fellows program with Female Founders Fund, and a Harvard associate with top Series A fund, Romulus Capital. I continue to stay involved with Women in Business on campus, direct the Society of Women Leaders; run the endowment of Harvard Student Agencies (the world's largest student run company); and help lead ProMazo, a national edtech startup expanding to campus. This year, my primary focus has been on my thesis research surrounding international joint venture bargaining theory and outcomes in China. Following graduation, I am joining Morgan Stanley in their Global Technology Investment Banking group."

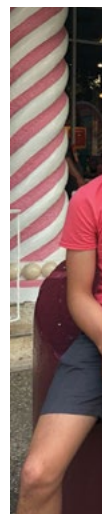
Parker Frankiewicz
Computer Science 2015



"I graduated high school in the top 2% of my class and currently attend Duke University. I intend to double major in Biology and Global Health as well as minoring in Spanish on the pre-med track. I am currently part of the FOCUS program, a small, interdisciplinary program for incoming freshmen, with a concentration in genetics and genomics. I serve as a tutor for the organization Gente Aprendiendo para Nuevas Oportunidades (GANO), which focuses on ESL tutoring for members of the Raleigh-Durham Latinx community. I'm also member of the Duke University Marching Band's drum line, Duke University Quidditch team, as well as the dance company On Tap."

John Flahive
Robotics 2015

"I'm a sophomore studying at UPenn as a CSCI major! I'm working as a lead software engineer on Penn Electric Racing, programming embedded systems and peripheral configuration programs. We're making our new car self-driving this year!"



Sarah Tadlock**Biotechnology 2016**

"I'm a high school senior and IB Diploma Candidate. I spent two weeks in July backpacking and hiking over 90 miles in Yellowstone. Prior to that, I spent a week at NASA-Langley designing a manned mission to Mars. I've led the Varsity Cross Country team since June, and am excited to start winter track, where I'll be sprinting and hurdling. This weekend, our physics department will be traveling to West Virginia's Green Bank Observatory for a research trip. I'm looking forward to the rest of a great senior year!"

**Edward Kim****Computer Graphics 2016**

"Since ESAP, I was admitted into UPenn's class of 2022 and am studying computer science."

Brandon Reid**Nanotechnology 2016**

"I am currently at UPenn in the school of engineering. ESAP was a big reason as to why I choose UPenn and since I've been here, I've never been happier. I am taking piano lessons because I have always wanted to and I plan on joining clubs in my second semester to give myself time to adjust to the college lifestyle."

Bryan Wu**Biotechnology 2017**

"I became a member of the Junior academy of the New York Academy of Science, and through it am currently working on a device which will help detect early signs of wildfire. I've also worked with a professor at USC on my first research project. Currently I am trying to help define the link between air pollution and certain aspects of aging. This fall I'm applying ED to Rice University for Bioengineering."

Michael Cyran**Computer Science 2017**

"I am currently a senior in high school and captain of the varsity soccer team. I'm also a member of the computer club and the newly formed robotics club. In addition, I'm working towards my eagle scout rank. For the past 9 months, I have worked at Jersey Mike's, while also working on an IOS app."

Cher Ma**Computer Science 2017**

"I'm currently attending Harvey Mudd College as a freshman. I attended a summer camp with Google called Computer Science Summer Institute this past summer. I'm hoping to major in something related Computer Science, either CS or Math CS."

Yuewei (Lucy) Yuan**Computer Science 2017**

"I'm currently at UPenn, majoring in CIS. I am also a member of Women in Computer Science (WiCS)."

Henry Wolfson**Nanotechnology 2017**

"I'm a high school senior, waiting to hear from colleges- hopefully got into Penn! I plan to study engineering. Last summer, I interned at the Nano lab at Penn."

Asset Yermekkaliyev**Nanotechnology 2017**

"I loved my team experience at the ESAP 2017 program, and I decided to apply Early Decision to the University of Pennsylvania. I am planning on majoring in Materials Science after my ESAP Nanotechnology experience. My final project was dye-sensitized solar cells, and that was when I became interested in the renewable energy sector and decided to explore my interest further by accepting an internship at a natural gas power plant in Uralsk, Kazakhstan. I have also been participating in innovative projects such as space balloon where the camera attached to the balloon filmed its journey up to 100 000 feet."

Michael Hanono**Networks 2017**

"I started school this fall at The University of Southern California, majoring in Industrial and Systems Engineering and doing a minor in Computer Science. Moreover, I was selected to be an ambassador for The Morning Brew at my university and have joined several engineering clubs such as the Institute of Industrial and Systems Engineering. Studying NETS at ESAP was very helpful in deciding what to study and by motivating me to work hard at a college level course."

Tom Tang**Networks 2017**

"I'm now a high school senior applying for colleges (Penn is still my top choice lol). ESAP taught me a lot and completely made me fallen in love with engineering. In the past year, I did a bunch of fun projects on my own (some codes in Matlab and some little gadgets), and I'm glad that ESAP has set a great foundation for what I wanted to do. I went to M&TSI this summer to explore the business side of engineering and I absolutely loved it. I founded the LaunchX club in my school. I am looking at Penn's M&T program and Systems Engineering as a major, hopefully I can get in haha."

Adrian Wang**Networks 2017**

"I was accepted Early Decision into Penn, and I'm now part of the NETS class of 2022. I also serve as principal trumpet of the Penn Symphony Orchestra and the Penn Wind Ensemble."

Laura Lewis**Robotics 2017**

"This past year since graduating ESAP has been incredible. I was able to utilize my robotics skills gained during ESAP to help my team win a regional championship in FIRST robotics and compete in the FIRST World Championships. This summer I also participated in the MIT MITE program and won the Edna and Leon Trilling Award for academic excellence. In addition, I was inducted into the Cum Laude Society. ESAP has opened up so many opportunities for me, thank you ESAP."

Adesanya Tito**Robotics 2017**

"I am currently at Columbia University majoring in Mechanical Engineering. I am involved in Columbia Robotics and the Columbia Space Initiative. I will be working at Tesla next summer, and plan to work on medical devices in the future."



Tianqi Chen

Biotechnology 2018

"I am enlarging my non-profit organization of Music Therapy volunteers for people with dementia and autism. As the founder and captain, I advocate, motivate and educate the team members to provide their talent and enthusiasm for the patients. Our team members include students from local public and private elementary school, middle school and high school, as well as their parents. I am the only high school student member of the NJ Association for Music Therapy (NJAMT). Besides the workshop of NJAMT, I am going to participate in the American Music Therapy Association's Annual Conference in November. Our pictures and video can be found at <http://powerofmusictherapy.org> or Instagram "musictheapyalz". "

Dylan Dugourd

Computer Graphics 2018

"After an amazing summer at UPenn, I studied Python Programming at the SUNY Stony Brook Institute for Advanced Computational Science. I'm back in high school this fall with a busy schedule including AP Calculus BC and AP Physics. I am also our Junior Class President and have been playing Varsity Soccer, traveling to the School of Visual Arts to practice figure drawing, and taking Driver's Ed lessons. I am keeping up my computer graphics skills by designing a new video game and pursuing an independent research project with a mentor at SUNY Stony Brook."

Yike Han

Computer Graphics 2018

"Currently I am in my second year of IB studies in the High School Affiliated with Renmin University of China. I think the CGRA program made me realize that I can actually combine the two things I love so much together, more than I had ever imagined. It helped me discover a HUGE interest of mine that I would really love to explore in my future college years and career. This year I have handed over the reigns of my robotics club and graphic design club to younger club members and focused more on the college application process. I am especially focusing on the colleges with an interdisciplinary atmosphere, so please wish me luck!"

Rameen Mahmood

Computer Science 2018

"Amongst the whirlwind of college applications and aptitude tests, I've been able to use the knowledge and experience of ESAP by teaching Python to children at a nearby Welfare school. I am also the ambassador for the Pakistan Innovation Foundation for the National STEM School in Pakistan. In addition to this, I have made my way into the Student Council in my school this year, securing the position as President of the Science and Space society, for which I am currently organizing a Science Fair. ESAP has not only added to my academic depth, but has also given me a taste of college life as an undergraduate student. I will always remember it as one of the most rewarding experiences of my life."

Le Zhang

Computer Science 2018

"I'm currently in Hangzhou Xuejun High School. My future college major is Computer Science or Computer Engineering. Also, after finishing ESAP, I worked for Girls Who Code Program in China as an instructor. ESAP gave me experience to improve my coding skills."

Yoonseok Yang

Nanotechnology 2018



"I'm currently continuing my research on developing ordered mesoporous alkali metal catalyst for recycling waste glycerol from the bio-diesel manufacturing process. Based on the supple properties I learned from the Nanotechnology course about nanomaterials, I'm utilizing mesoporous structures as templates of my catalyst, taking advantage of their vast surface area. I'm trying out different porous materials as templates, and the tools I learned to analyze these nanomaterials (such as XRD tech-

nique) is helping me a lot! Moreover, ESAP's Nanotech course evoked my new interest in Dye-Sensitized Solar Cells (DSSCs). I'm hoping to conduct research on DSSCs in the near future. Motivated by the ESAP program, I'm planning to major in Materials Science and Engineering!"

Richard Cheng

Networks 2018

"I've been busy with junior year in high school! I've been missing my friends from ESAP, but I'm keeping myself entertained with lots of activities. From my school newspaper to the rocketry club, I'm really enjoying my extracurriculars this year. I'm also doing some computer science on the side after my experience in ESAP. Hope I see some of my camp friends sometime in the future, and I hope they're doing well!"

Eugene Mak

Networks 2018

"I'm currently the co-president of our computer science club, and we're working hard at helping people learn to program and foster an interest in computer science. We're also preparing for coding competitions, especially PClassic hosted at UPenn. In addition, I'm the president of our underwater robotics club and a new member of our robotics club. I also have an internship at Drexel where I get to use the MatLab skills I learned from the Nets course!"

Juliana Cui

Robotics 2018

"I just joined the new robotics club that was created at my school, and am looking forward to applying everything that I learned in robotics on future projects and robots!"

Siming He

Robotics 2018

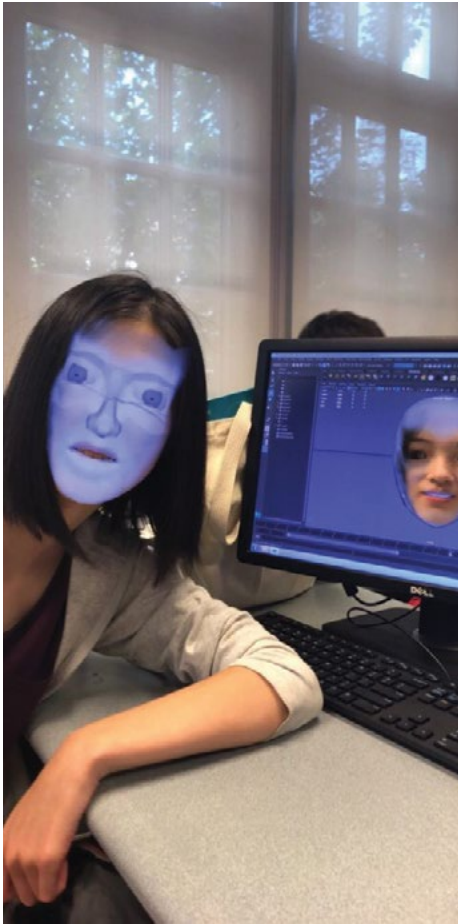
"I am doing a project about sign language recognition based on deep learning. In most cases, deaf or mute people are unable to even access basic services and products due to communication problems. According to WHO, in 93 countries, 31 countries had no interpreting service, while 30 countries had 20 or fewer qualified interpreters. In order to help them communicate, I designed a sign language translation system based on deep learning, enabling cameras to recognize and translate sign language vocabularies into speech. The translation system, rather than interpreters, is more efficient and reliable in spreading interpreting services to help the 70 million deaf or mute people around the world. In this system, OpenPose, a CNN network, is used to estimate hand pose. Then, an LSTM Network under Tensorflow framework is trained to recognize hand signals. "

Boyang Li

Robotics 2018



"As a senior at Taylor Allderdice High School, I am currently busy with my college applications as well as other school activities, such as robotics club, fencing, and volunteering organizations. I plan to major in math in college, but haven't decided what to do in the future (which is why I chose math). Still having the craving for robotics engineering from ESAP, I am working on a side project on the robotics team before the FRC season starts; we are working on a Go-Kart that is capable of shooting wiffle balls. ESAP was truly an amazing summer experience, and I hope to be able to participate in similar activities in the future (hopefully at Penn hopefully!)"



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