Polygence is an online mentorship program that helps students turn their passions into tangible research projects with the support of PhD-level experts.

Polygence was founded on the principle that students should feel empowered to explore the academic subjects and practical ideas that inspire them. Under the guidance of our mentors – who range from college Professors to advanced degree candidates to expert practitioners in various industries – Polygence students engage in academic fields across the STEM, the social sciences, and the humanities. With the support of their mentors and our team, students produce tangible products, from published peer-reviewed papers to functioning robots to original screenplays, that give them a real sense of accomplishment and shine on college applications.
Polygence Programs

Polygence offers a variety of programs to meet students where they are. Here are the four programs we are currently offering our families:

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Full Program</th>
<th>Pathfinders + Full Program</th>
<th>Full Program + Premium Showcasing Support</th>
<th>Pathfinders + Full Program + Premium Showcasing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:1 Meetings with mentors from 3 different fields</td>
<td>-</td>
<td>✓</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Passion Diagnostic</td>
<td>-</td>
<td>✓</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Number of sessions</td>
<td>10</td>
<td>13 + Passion diagnostic</td>
<td>13</td>
<td>16 + Passion diagnostic</td>
</tr>
<tr>
<td>Guidance on advanced project</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Access and basic support on showcasing</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Premium support on showcasing</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Opportunity to apply to present at Symposium</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Opportunity to ask mentor for Letter of Rec</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Add-ons**

<table>
<thead>
<tr>
<th>Description</th>
<th>Premium Showcasing Support Add-on</th>
<th>UC Irvine College Credits (x3)</th>
<th>Pathfinders: Career Sampler</th>
</tr>
</thead>
<tbody>
<tr>
<td>This offers 3 sessions of showcasing support with a specialist to identify suitable outlets and prepare for submission</td>
<td>This offers 3 college credits through UCI’s GATI program and gives students' access to UCI’s online resources</td>
<td>This is a 3-session, one-on-one mentorship program where students meet with mentors from 3 different careers or academic subjects. The program ends with a passion diagnostic report that outlines next steps for students.</td>
<td></td>
</tr>
</tbody>
</table>
Pathfinders: Career Discovery Program

Pathfinders is a 3-session, one-on-one mentorship program that lets middle school and high school students take 3 careers or academic subjects on a test-drive.

Pathfinders is designed to give students exposure to a diversity of college majors through connecting them with experts who are devoting their careers to those disciplines. Our students walk away from the program with a clearer sense of their career and academic interests, ideas and next steps for further exploration. After a short diagnostic call that identifies their key learnings, we provide a written summary of their experience with each mentor and a plan on how they could continue their research with Polygence or independently.

What students get out of this program

1. **Exposure to experts in 3 chosen disciplines**
2. **Student-generated ideas** for further exploration in each of the 3 disciplines
3. **Access to top experts** who are also trained educators
4. **1 Guided reflection session with trained educator** to identify strengths and interests of the student
5. **1 written “Passion Diagnostic Report”** assembled by Polygence educator that assesses the strengths, interests, and areas of growth for the student

Tuition: $595 / 3 sessions + 1 Passion Diagnostic session

- 3 sessions with 3 different career experts
- 1 Passion Diagnostic reflection session with a Polygence educator

Questions? Reach out to pathfinders@polygence.org
### Sample Program Composition 1

**Biology Pathfinders**

**Careers in Biology**

<table>
<thead>
<tr>
<th>Session 1</th>
<th>Session 2</th>
<th>Session 3</th>
<th>Session 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroscience</td>
<td>Microbiology</td>
<td>Cancer Biology</td>
<td>Passion Diagnostic Session</td>
</tr>
</tbody>
</table>

- **Rahul Patel**  
  PhD Candidate at UNC Chapel Hill

- **Emily Smith**  
  PhD Candidate at UCLA in microbiology

- **Ali Massa**  
  PhD Candidate at Dartmouth in cancer biology

- **With Polygence Educator**

**Students will meet with a Polygence educator for a short diagnostic review where we will:**

- Record the key learnings from each meeting with their mentors
- Identify potential high school coursework, college majors, or career paths
- Craft a proposal for a full research project

**• A day in the life of a neuroscientist**

- How did Rahul realize he wanted to become a neuroscientist?
- What research is Rahul doing? What questions is he thinking about?
- What resources should you look at to dive deeper?

**• A day in the life of a microbiologist**

- How did Emily realize she wanted to become a microbiologist?
- What research is Emily doing? What questions is she thinking about?
- What resources should you look at to dive deeper?

**• A day in the life of a cancer biologist**

- How did Ali realize she wanted to become a cancer biologist?
- What research is Ali doing now? What questions is she thinking about?
- What resources should you look at to dive deeper?
**Project Spotlight**

**Machine Learning in Modern Cancer Treatment**

The student researched various types of machine learning and the ways they have been, and continue to be, incorporated into the medicine and healthcare field. Sia specifically focused on cervical cancer, lung cancer, and brain cancer. The majority of her time was spent researching for and writing her research paper, which addresses the promising applications of AI as well as the potential pitfalls.

**Landmine locator**

Annually, 5,000 people die per year at the hand of landmines. The current methods of solving this problem use expensive, ground-penetrating-radar equipped vehicles that are not designed for civilian use. With the use of a cost effective, civilian operated, landmine solution such as mine, people can clear out plots of land for landmines with the assurance that no destruction will occur. Through the use of computer vision, my drone will be able to maximize the success rate of detection with a identifying algorithm using the camera and field-of-view.

**Experimental Play Writing: From Ancient Greece to Contemporary America**

Ethan studied some of his favorite Ancient Greek plays and Shakespearean plays. Through his studies of the literary genre of drama and theater, the student was inspired to write and produce his own plays. Throughout his Polygence program, Ethan wrote and workshopped his plays The Diner (inspired in part by Edward Hopper’s painting) and Orestes in the Internet. He also wrote a short story about high school, The Frame Between Us.
A wide range of project outcomes

Ribosome distribution affects stalling in amino-acid starved cancer cells

Protein synthesis is a process central to all life on Earth. In this project, a student researched and analyzed RNA sequencing and ribosome profiling data to examine their effects on general protein synthesis. The student summarized his findings in a research paper that was published in the Journal of Emerging Investigators.

Coping During Covid-19: Our Coping Responses in Uncontrollable Situations

In this project, a student explored the importance of examining an individual’s perception of control over their life events through explanatory coping strategies. In psychological interventions, this “locus of control” orientation can help explain coping behaviors, especially during traumatic periods like a pandemic. For her research on this timely topic, the student was selected as a national Regeneron Science Talent Search Scholar.

Foggy Minds: A Podcast on Dementia

This student was fascinated by memory. Particularly, how memories are such important fragments of our lives, but are also so elusive. With the help of her mentor, she recorded a high-quality seven-episode podcast that is featured on multiple platforms including iTunes and Spotify.

Fourth Down Coaching Tool Based on 10 Years of NFL Data

Can you imagine a tool that could calculate the probability of winning a game? This student took a 10-year data set from the NFL, focusing on fourth downs and two-point conversions, to create an online coaching dashboard. The goal was to help coaches make better decisions based on verifiable data. The student also published his findings and his coaching tool on medium.com, an open platform with a wide audience.

College Credit Program with UCI x GATI

Polygence is thrilled to partner with the University of California at Irvine’s Gifted and Talented Institute (UCI x GATI) to award college credits for research papers written in our mentorships. This program is not included in Polygence’s tuition, students will be invited to apply midway through the project if they are in good standing.

For those who are selected and enrolled, the UCI x GATI program is a partially self-paced two-unit UCI class. As part of a well-rounded research project experience, eligible students will also enroll in a UC Irvine undergraduate-level writing program. To earn 3 college credits for their project, students must first submit an application form and have their research papers (either experimental or review papers) ready for submission by each deadline.

All Polygence papers will be graded by UCI faculty members and awarded a letter grade. Students receive an official transcript at the end of the process. There are no restrictions on the breadth of subject areas, and we welcome academic papers in any and all fields!
Polygence mentors are selected based on their exceptional academic background, teaching experience, and unique ability to inspire the next generation of innovative thinkers and industry leaders. We have over 2000 active mentors and we are strong believers in cultivating diverse perspectives on the world - this is why we encourage our students to not only publish research papers, but also to record podcasts, assemble art portfolios, write Op-Ed articles, build robots and start organizations with the guidance of our expert mentors.

Courtney
PhD
Education
University of Virginia, PhD
Neuroscience, Neuroimmunology
University of Michigan - Ann Arbor, BS
Neuroscience

Ross
PhD
Education
University of California San Diego, PhD
Electrical & Computer Engineering
University of California Berkeley, BS
Computer Science

Nora
PhD candidate
Education
University College London, PhD
U.S. History
Harvard University, MA and BA
Middle Eastern Studies, Religion

Michael
PhD candidate
Education
Massachusetts Institute of Technology, PhD
Economics
Harvard University, BA
Physics

Katharina
MFA
Education
New York University, MFA
Costume Design for Stage and Film
Brown University, BA
Fashion Studies

Jacob
PhD candidate
Education
Stanford University, PhD & MS
Applied Physics
Pennsylvania State University, MS & BS
Physics
Symposium of Rising Scholars

Polygence’s Symposium of Rising Scholars is an academic conference where students present and share their research with their peers and a panel of experts.

The Symposium of Rising Scholars is a bi-annual academic conference designed for students. It is a great opportunity to showcase their research in order to share their unique perspective and new knowledge with the world, document their intellectual development, and practice the invaluable skill of knowledge synthesis. Students have the opportunity to present an Elevator Pitch or a Conference Talk.

The Symposium is typically held in March and September of each year. Our Fall 2022 Symposium (held on Saturday, September 24th) featured 260 student presenters, three engaging panel discussions, and a fantastic keynote with Harvard University Professor, Michael Puett. Thousands of people have attended The Symposium since its inception.

Showcasing Opportunities

Hyper-partisanship in the Federal Judiciary
Caden’s project with mentor Phillip

How does the invasive Arundo donax impact the coverage of native creeping wild rye and valley sedge in Walnut Creek?
Indra’s project with mentor Katherine

The Instrumental Role of Contact Sports in the Development of Clinical Brain Conditions
Pratham’s project with mentor Sam
The Research Archive of Rising Scholars (RARS) is an open-access preprint archive for research articles written by young scholars from around the globe. The goal of the archive is to facilitate exchange of scholarly ideas from young students and to allow them to share the fruits of their research with the world.

Having students’ work circulated through RARS means that they’ll have a link to share with others so that they can read and engage with the research they’ve completed. Since this is a non-peer-reviewed preprint server, students who showcase their work on RARS can decide at any point to submit their work to a journal or competitions for consideration. In addition, our archive is fully indexed by Google Scholar, and each preprint shows up as a publication preprint on the author’s Google Scholar page.

Premium Showcasing Support

Polygence also offers Premium Showcasing Support as an addition to the full, 10-session mentorship program. After completion of their Polygence project, students will be matched with a Showcasing Specialist who is trained to help them identify relevant showcasing opportunities for their research, and format their work for submission. This is ideal for students looking to submit papers for publication, compete in a science fair, turn their research into a podcast, or create a website! This can be added to their project upon enrollment, or at a later date.
Polygence Alumni College Admissions Stats

Polygence's mission is to empower the next generation of students to take control of their education. Our programs and mentors help them to develop essential academic skills, make informed decisions about what to study, and to prepare for meaningful careers.

In addition to these holistic benefits, research and passion projects also have a material impact on college applications. This year we surveyed more than 500 alumni who applied to college in 2022 to learn more.

92% of students mentioned their Polygence project in their Activities List or CV

67% mentioned their project in their Supplemental Essays

30% mentioned their project in their Personal Essay

Where were Polygence alumni accepted?

R1 schools

87% Polygence alumni acceptance rate to R1 schools in 2022

US News Top 25 Universities

91% Blended acceptance rate pre 2022 and 2022 rate

56% Acceptance rate to US News Top 25 Universities

Including:
- UC Berkeley (17), UCLA (13), NYU (10), CalTech (8), Brown (5), Rice (4), Emory (3), Stanford (3), UPenn (3), WashU (3), and more
### Top 10 Liberal Arts Colleges

<table>
<thead>
<tr>
<th>50%</th>
<th>Polygence alumni acceptance rate to Top 10 Liberal Arts Colleges</th>
</tr>
</thead>
</table>

| Accepted schools: | Amherst, Carleton, Wellesley, Bowdoin, Middlebury, Williams |

### Ivy League

<table>
<thead>
<tr>
<th>26%</th>
<th>Polygence alumni acceptance rate to Ivies</th>
</tr>
</thead>
</table>

| 5.4% | Average general applicant acceptance rate to Ivies. |

### Acceptance rates at other prestigious schools

<table>
<thead>
<tr>
<th>45%</th>
<th>Polygence alumni acceptance rate to UC Berkeley</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>33%</th>
<th>Polygence alumni acceptance rate to MIT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>17%</th>
<th>Polygence alumni acceptance rate to Stanford</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>14%</th>
<th>Polygence alumni acceptance rate to University of Chicago</th>
</tr>
</thead>
</table>

### What do Polygence alumni say about their projects?

**Polygence Alum attending Berkeley**

“My Polygence project gave me confidence in knowing that I have the ability to tackle higher quality research at the collegiate level. This experience with research also gave me a different perspective compared to those with other extracurricular activities and experiences.”

**Polygence Alum attending Cornell**

“Yes it did, it helped motivate me to do research into what I really enjoyed about STEM and led me to the major I am planning to go in. Polygence helped me figure out what I wanted to do in college which made my essays more genuine.”

**Polygence Alum attending Rice**

“Polygence helped me shape my application that was more focused towards my major, demonstrating to the admissions counselors that I am passionate about what I intend to study. It gave me an opportunity to explore a niche topic that I am interested in, showing more depth in my academic interests. In my Rice admissions package, they send a personalized message to every admitted student, and my message was talking about how they are excited to see how my experience in the research that I chose will shape the Rice community!”

**Polygence Alum attending Virginia Tech for Aerospace Engineering**

“It gave me confidence in the major I chose and gave me insight as to what I will be learning as an Aerospace Engineering Major. Thank you Polygence!”

Published on 02/28/2023. The information included in this flyer is for informational purposes only. If you are reading this document after the date of publication some information might be outdated. iPads and comically oversized books and magnifying glass are not included in project.