



POSITIONING RESEARCH IN COLLEGE APPLICATIONS

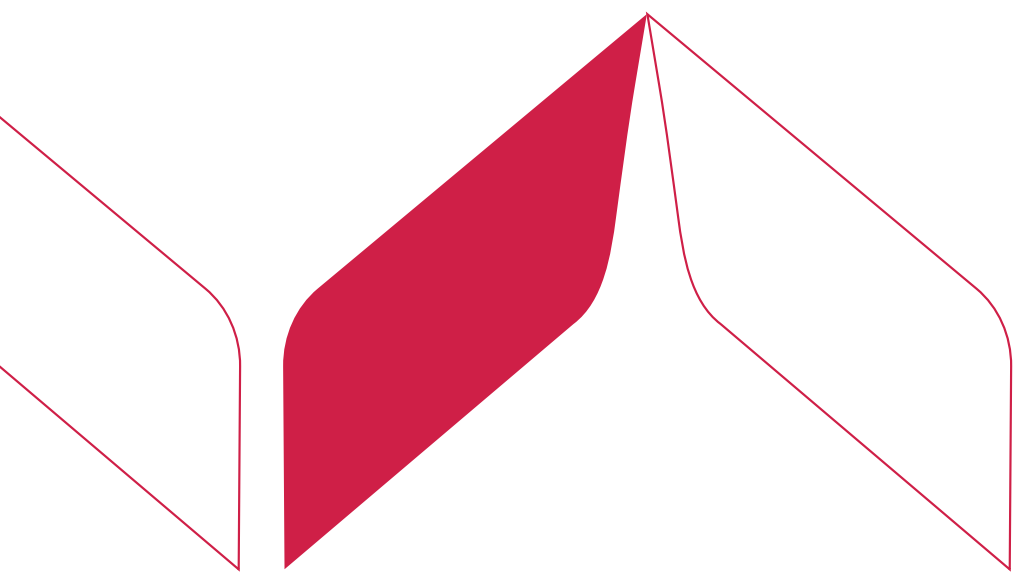
Evidence from Lumiere's Class of 2026 Early
Application Results

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ABSTRACT

In this report, we analyze quantitative and qualitative data from **142** students who participated in the Lumiere Research Scholar Program on their early admissions results and their use of research in the college application process. In particular, we compare Lumiere students to the general admission pool and find that students who did research were **25.9%** more likely than the general pool to be accepted into a top university¹. We also analyze how these successful candidates use research and find three main conclusions: A) That **99%** of respondents used their research project prominently across their college applications, B) That accepted students were more likely to ask for a letter of recommendation from their research mentor and to talk about their research in an interview, and C) That successful students used research as part of a narrative to demonstrate expertise in a field, commitment to a cause, or personal growth. While this paper cannot establish causation, it provides indicative evidence on the importance of research in the college admissions process.



CONTEXT

Applying during the early admissions cycle to US universities is a highly competitive process. With total applications in the last year having increased by 22%², there has been a marked shift in what universities look for in students. As of December 2021, over 1800 accredited, 4-year colleges and universities have confirmed that they will not require ACT/SAT scores in the 2021-2022 admissions season³, deciding instead to opt for more holistic criteria. Supplementary application materials like innovative projects and research portfolios have become important and widely used means to assemble a diverse class of students who are markedly creative, enterprising, and committed.

Using survey and interview data from Lumiere alumni, this report examines how students most effectively use independent research experiences to build their profile during high school and set themselves apart in the college application process.

We have a ringside view to this at Lumiere, having guided over 600 students from 30 different countries on their independent research projects. To find out how our program helped them in their admissions process, we reached out to our alumni to collect some data on the most recent round of early applications.

The survey asked for the colleges that they had applied to and their results, information on how they talked about research in their application, and any other reflections they had on the process. To dig deeper into their stories, we did in-depth interviews with 6 Lumiere alumni that you can read about in Section 2 of this report.

Here's what we found

We collected data from

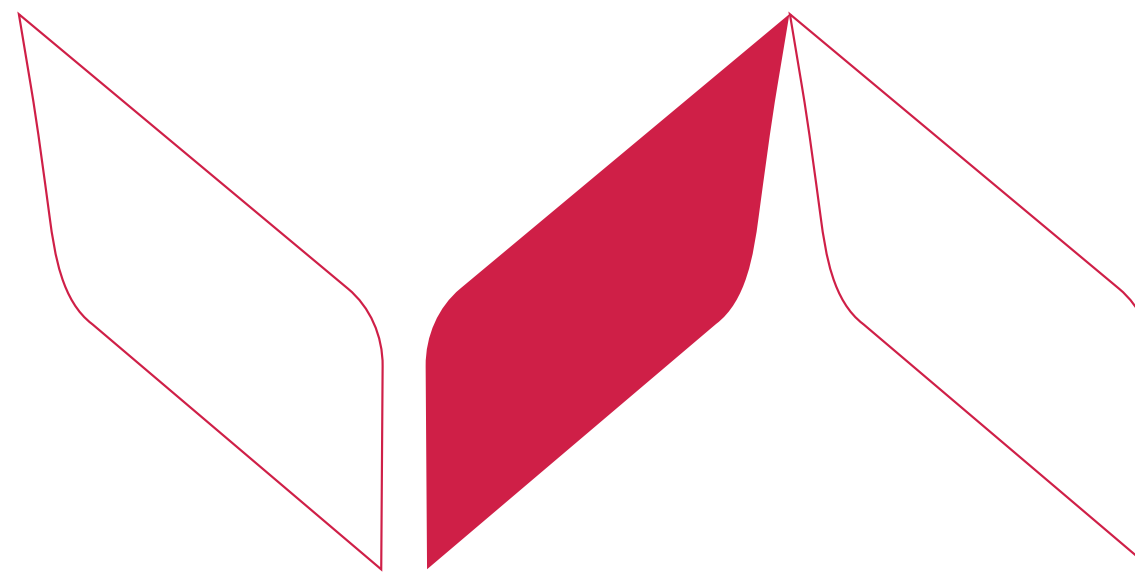
142

Lumiere alumni about their admission results and their use of research in the application process.

We had students from around the world fill out the survey:

India	Vietnam	Pakistan	Hong Kong
Germany	USA	Qatar	Thailand
Spain	UAE	South Korea	Bangladesh
Egypt	Canada	China	Singapore

These were students who had done research projects in 25 different fields across the sciences, the social sciences and the humanities.



Of these 142 students,

50.7%

were accepted at one of the universities they applied to early.

This year, our scholars were admitted to the following universities in the US:



Arizona

Arizona State University Main Campus

California

Santa Clara University

Colorado

University of Denver

Connecticut

Yale University

Georgia

- Emory University
- Georgia State University
- University of Georgia
- Georgia Institute of Technology

Illinois

- Illinois Institute of Technology
- University of Chicago
- Northwestern University

Indiana

- University of Notre Dame
- Indiana University at Bloomington

Iowa

Cornell College

Massachusetts

- University of Massachusetts at Amherst

- Worcester Polytechnic Institute
- Northeastern University

Michigan

- Michigan State University

Minnesota

- University of Minnesota Twin Cities
- Macalester College

New Jersey

- Rutgers at New Brunswick
- Drew University
- Seton Hall University
- Rutgers State University at Newark
- Princeton University

New York

- Fordham University
- Barnard College
- Columbia College
- Union College
- New York University
- Cornell University

Ohio

- Case Western Reserve University
- Ohio University
- College of Wooster

Oregon

Reed College

Pennsylvania

- University of Pittsburgh – Main Campus
- Carnegie Mellon University
- University of Pennsylvania
- Pennsylvania State Univ. Main Campus

Tennessee

- Vanderbilt University

Texas

- Texas A&M Univ. at College Station
- University of Texas at Austin
- Rice University

Virginia

Virginia Commonwealth University

Washington D.C

Georgetown University



They used their Lumiere research project prominently in their college applications:

	Students who were accepted	Students who were deferred	Students who were rejected
My mentor wrote me a recommendation letter for my application	47%	43%	31%
I spoke about Lumiere in an admissions interview	14%	11%	8%
I wrote about my Lumiere experience/project in a main essay (e.g. CommonApp essay, UCAS statement, SOP)	11%	6%	10%
I wrote about my Lumiere experience/project in a supplemental essay	50%	49%	51%
I did not use Lumiere in my application	0%	0%	1%

* Source: Lumiere Alumni University Application Update Survey 2022; N = 142

While almost all respondents used their Lumiere research project in some way in their college application, they framed it in different ways. Students who wrote about their research in a primary or supplemental essay had a relatively even split between different admission outcomes, students who were accepted in the early application process **were more likely to have asked their mentor for a recommendation letter or spoken about it in an admissions interview.**

In the early admissions cycle, Lumiere alumni received offers from 5 of 8 Ivy League universities. **16.4% of respondents who applied to Ivy League universities were accepted in the early admissions cycle, which is 25.9% higher than the average early acceptance rate for Ivies⁴** (acknowledging that this is a small dataset, so these numbers are suggestive!). In total, 55 respondents applied to Ivy League universities in the early application cycle, with 9 being accepted and 21 deferred.

Our analysis of the data suggests three clear takeaways:

- 01** | **Successful students don't just list their research as an activity** - they provide context and description either through an essay or a recommendation letter.
- 02** | **Universities take notice of this** - a significant number of students discussed their research in their admissions interviews, and one student had a note at the bottom of their acceptance letter to Case Western University saying "PS, your research on radiation protection seems really interesting!"
- 03** | **Research is relevant across disciplines** - while people traditionally associate research with STEM-related subjects, Lumiere scholars in the social sciences and humanities had acceptance rates of nearly 60% and 70% respectively in the early admissions cycle.⁵

To better understand how students use research in the high school profile building and application process, the next section covers six case studies in greater detail.



HOW THEY DID IT: CASE STUDIES OF RESEARCH IN THE PROFILE-BUILDING PROCESS

Based on in-depth interviews⁶ with Lumiere alumni and analysis of their research material, this section outlines the case studies of the paths that 6 students took when doing research in their high school journeys and showcasing it in the college application process. The aim is to identify how students in different disciplines and applying to different types of universities (Ivy, public, private) communicated the content and value of their research effectively when applying to college.



Case study 1

DRAWING ON THE POWER OF GUIDED RESEARCH TO SUCCESSFULLY APPLY TO TECHNICAL UNDERGRAD PROGRAMS

Location: **India**

University accepted to: **University of Pennsylvania**

Pranav always knew he wanted to study abroad, but was not sure of what his path toward that goal was. Early in high school, he was interested in music and chess and won several awards in them, but it was difficult for him to balance his interest in these extracurriculars with good grades. In his sophomore year, Pranav was introduced to the world of research through the NUS summer school and he found himself drawn to the topics that he was working on. Our research showed that many students were in a similar position - **research can help students with strong extracurriculars** (e.g. in the arts or sport) **round out their profile by proving their academic ability too!**



In particular, Pranav began to develop a real expertise in renewable energy solutions. A budding innovator, he spent his time on developing projects such as Project ReCharge, an initiative where he created solar powered lamps from waste plastic bottles. He applied to global innovation challenges and social impact competitions, with the goal of getting feedback and exposure for his work.

As he continued working independently on a submission to one of his competitions, he realized that his proposal to turn CO₂ into fuel was a great theory – but didn't work in practice! So, Pranav applied for the Lumiere Research Scholar Program in the winter of his junior year and worked with a chemistry PhD researcher at the John Hopkins University to research alternative materials as catalysts for the oxidation of carbon monoxide.

Through his research, Pranav was able to gain technical expertise in how chemicals function as catalysts, and specialised on the cobalt oxide catalyst. Based on the strength of his work, he was able to work at a top local university lab to do applied work on perovskites. High school students working on independent research quickly run up against the limits of their knowledge and expertise – **having a mentor can unlock new pathways for their research.**



When applying to college, Pranav hoped to do the Vagelos Integrated Program in Energy Research (VIPER) at the University of Pennsylvania, a selective undergraduate program that prepares students in the field of sustainable energy science and technology. His multiple research experiences in the area of renewable energy and his work building a sustainable energy solution prepared him well! **Research helps students applying to technical programs such as VIPER exhibit both expertise and passion for their chosen field.** By discussing his extensive and guided research work in his CommonApp essay, Pranav was able to prove his skills and knowledge in his topic of interest, a long term commitment to his work, and a nuanced understanding of the social impact he wanted to achieve.





Case study 2

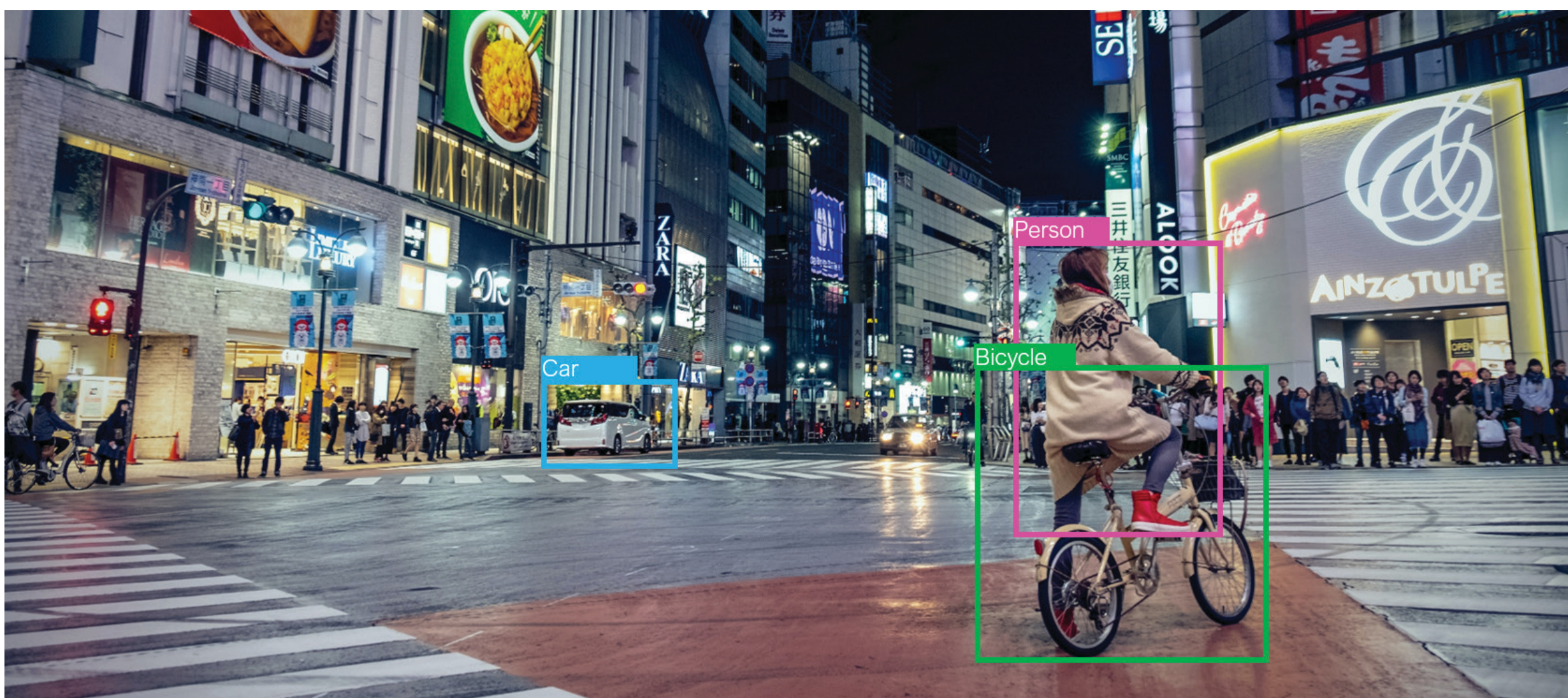
SHOWCASING RESEARCH AS AN EFFECTIVE WAY TO DEMONSTRATE AN ACADEMIC “SPIKE”

Location: **United States of America**

University accepted to: **Northeastern University**

Aryash entered high school with a strong background in coding. He built on this through high school, taking a Java course at UC Berkeley as a rising sophomore and participating in an engineering program called BlueStamp where he worked on two image recognition projects. One of his projects was a smart mirror that would turn on based on the user’s facial expressions and emotions.

That experience introduced him to the vast theoretical, practical and moral concerns associated with machine learning that he hoped to do his own research in. With Lumiere, he worked on affective computing, a subfield of machine learning involving facial recognition algorithms that can identify emotional indicators like smiles. Drawing on more than 40 research papers in the field, his



paper compared the performance of three prominent machine learning models and analyzed important ethical considerations associated with affective computing.



When applying to Northeastern to study computer science, he listed his research project as one of his top activities on the CommonApp list. **Research has the greatest impact on an application when it is presented as part of a narrative - by tying it to other activities that students have done before (or after).** By establishing an academic “spike” in machine learning, Aryash set himself apart as an accomplished and high-potential computer scientist who would make effective use of Northeastern’s research opportunities and internship programs.



Case study 3

REACHING FOR THE STARS BY BUILDING ON RESEARCH TO DISPLAY SOCIAL ENGAGEMENT AND OUTREACH

Location: **Hong Kong**

University accepted to: **University of Pennsylvania**

Riya entered high school knowing she was interested in STEM, but not sure what exactly she wanted to focus on. She enjoyed math, physics and computer science - and like many students her age, began exploring her interests by watching YouTube videos in these areas (we recommend the Crash Course series as a great starting point!). She quickly began to realize that she was most excited by astrophysics and decided to dig deeper.



The summer between her freshman and sophomore years, she participated in the Columbia Summer Immersion Program in Astronomy and Astrophysics. Our takeaway is: **summer schools are the beginning of a student’s journey, not the end.** Summer schools are an effective way for students to learn the basics of a topic and to understand if they enjoy engaging intensively with it. For Riya,

however, the next step was to apply what she had learned and do something with her growing knowledge in astrophysics!

She applied to the Lumiere Research Scholar Program as a junior and participated in the 2021 Spring cohort. Her mentor, an astrophysics PhD researcher at Yale, assigned Riya academic readings on astrophysics and cosmology as a starting point. A discussion with her mentor about “inflation,” a theory in physics about the expansion of the universe, sparked an interest in learning more about the origins of the universe. Over the next nine weeks, Riya wrote an intensive literature review paper that synthesized material from more than 20 academic sources.

“THE THING ABOUT ASTROPHYSICS IS THAT SOMETIMES YOU DON’T KNOW WHAT TO SEARCH FOR ON GOOGLE!”

She chose not to submit her paper to publications, but her research set her up well to develop two other academic extracurricular activities. The topics that came up during her research made for great content for a physics-focused blog that she founded and ran. She also built on her experience to start an academic society at her school that did activities in physics for other students. **Research can help build other parts of a student’s profile, including leadership and community outreach.**



Through high school, Riya had conscientiously built an interest and expertise in astrophysics that served her well in the college application process. As she explains:

“ I touched on my experience in research when explaining my previous background with the subject I was applying for, to show demonstrated interest. I also used the recommendation letter to apply to all the universities. I also used the knowledge I learned through my Lumiere experience in my alumni interview, as well as to mention specific aspects about research at the universities I applied to as being points of interest (which I know because I had already touched on them in the research paper writing process.)”

Riya thus built on her research to create community impact and demonstrate the talent and character needed to succeed at a rigorous intellectual community like the University of Pennsylvania.



Case study 4

USING RESEARCH TO DEMONSTRATE STRONG PERSONAL CHARACTERISTICS AND COLLEGE-READINESS

Location: **India**

University accepted to: **Michigan State University (with an academic scholarship), University of Massachusetts at Amherst (honors program)**

Shhreya's case study demonstrates how to talk about research experiences with authenticity and vulnerability in the application process. Accepted to the Lumiere Research Scholar Program with full financial aid, Shhreya worked with a data science PhD researcher at UC Irvine on topics in natural language processing and machine learning.

However, she found the subject more challenging than she had anticipated and ran into technical issues in her research. She found herself struggling with some of her code and ended up missing a couple of the deadlines that she and her mentor had agreed on. Despite this, she pulled through and completed her paper that explored the theory and applications of probabilistic modeling (in particular, Markov chains) in natural language processing.

When applying to universities, Shhreya knew that she wanted to continue studying computer science. One of the universities that she ended up being accepted at asked her the common question: "Describe an extracurricular activity or project that you have done." Shhreya used this opportunity to demonstrate her honesty and ability to learn from experience. She described sitting up till 2 AM



working on her research project, and still not being able to get the code to work. She reflected thoughtfully on how apprehensive she was to ask for help when she needed it, and how being used to working independently made things harder for her. Our takeaway is that **research can be challenging! This creates opportunities to explore unanswered questions and display personal growth.**



In another supplemental essay, she focused on how her approach was to embrace an “and” attitude rather than an “or” attitude. In particular, she used the example of her Lumiere research to show that although her paper wasn’t a liberal arts paper, the code that she wrote for the text-generating system in her research was based on text from Jane Austen’s *Pride and Prejudice*. She used research to **combine different fields and demonstrate creativity by searching for and engaging with unexpected findings.**

Shhreya’s experience with research helped her reflect on parts of her personality that went beyond her schoolwork and academics. Her work became an important addition to her wide range of interests, and equipped her with skills that have now become the foundation of her future education.



Case study 5

PROVING A COMMITMENT TO SOCIAL IMPACT AT A GLOBAL SCALE THROUGH RESEARCH

Location: **China**

University accepted to: **Union College, New York**

Although his intended major was initially physics, Frank realised that he was more passionate about the social sciences. His main areas of interest lay particularly in the fields of anthropology and international relations. His exploration of both these subjects was

influenced by his interest in the social impact they had with respect to environment preservation and sustainability.



He had been ideating and working on projects to protect the environment since as early as middle school. An organization he founded in 7th grade, creating a market for indigenous products, had raised \$90,000 to fund sustainability related projects. He had also previously made an anthropological documentary on an indigenous tribe in his country, to raise awareness about them.

When he applied for the Lumiere Research Scholar Program in the fall of his senior year, Frank wanted to explore the cause of environmental depletion from a more global perspective. Paired with an international relations PhD researcher at the Massachusetts Institute of Technology, he worked on a paper that explored the role of international treaties in the achievement of climate change targets. **While some students will use a research project as a way to demonstrate commitment to a particular academic field, others can use it to deepen their engagement with a social cause.** In our research, we have come across passionate students who have done academic research on issues such as gender inequality in education, the rights of informal laborers and racial barriers in access to healthcare.



In his common application essay, Frank supplemented what he wrote about his organisation with the research experience he had gained at Lumiere. He also attached, alongside letters from his school teachers, a letter of recommendation from his research mentor, who commended the tremendous effort and detail he had put into his research work. Through his research in international relations, Frank was able to take his work on environmental preservation and understand its global relevance. This not only magnified his passion for the environment, but also indicated an interest in developing an empirical understanding and factual solutions to these problems.



Case study 6

DEFYING GRAVITY BY COMPLEMENTING SCHOOL-BASED RESEARCH ACTIVITY WITH INDEPENDENT RESEARCH

Location: **India**

University accepted to: **Rice University**

Dviya is from an IB school where she had some opportunities to explore her interest in physics; this case study examines how independent research can contribute to an application even when the student is already doing research at the school-level (e.g. in the IB or through AP Capstone).

Dviya discovered that she was interested in physics early on in her high school career, when she worked on an article for a school newsletter about gravitational waves. An aptitude test proved her talent in the subject and she learned more about it through an online course on astrophysics from The University of Tokyo.

She used her IB assignments to try and explore astrophysics more. However, she realised that school-related research was extremely structured in its expectations, and she did not have the freedom or



guidance to choose a topic that excited her in astrophysics. So, in her junior year, she applied to the Lumiere Research Scholar Program. Paired with an astrophysics PhD researcher from UC Los Angeles, she did her project on the modifications made to the Laser Interferometer Gravitational-Wave Observatory (LIGO) to study gravitational waves. **Independent research programs offer students an opportunity to engage with the rigor of research beyond the restrictions of prescribed curricula. Students can be free to explore their favourite topics, with the academic thoroughness needed to build a foundation for future expertise.**

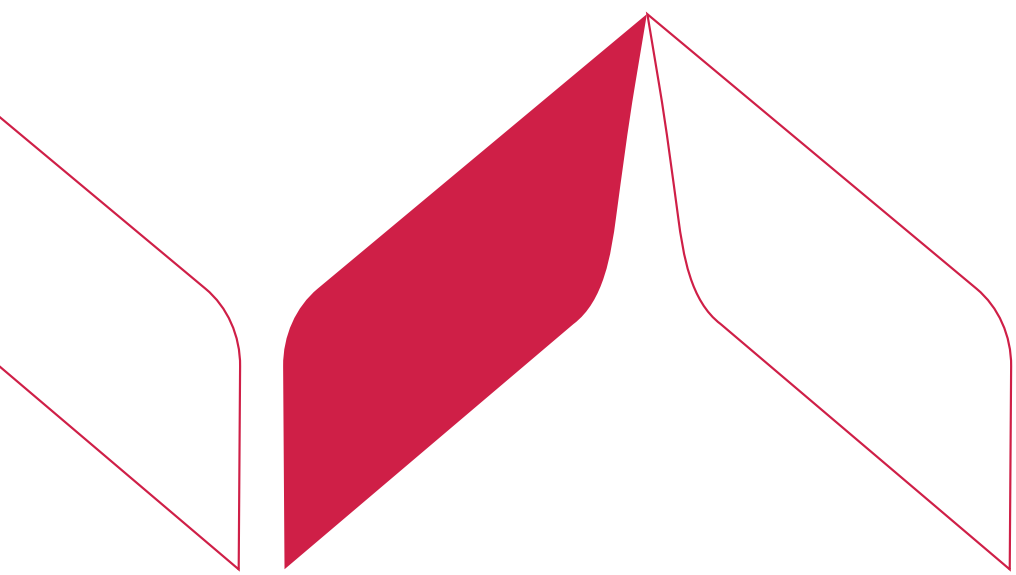


When applying to Rice University, Dviya both included her paper as an attachment to the application and asked her mentor for a recommendation letter. Even though her physics teacher at school was one of her CommonApp recommenders, she believed that her mentor's recommendation letter would add to it by serving as an external perspective on her intellectual ability that could describe how she compared to undergrads that her mentor had come across at top universities like UCLA. **A letter of recommendation from an external mentor can be an effective testament to a student's work ethic, attitude and ability.**

Despite having research-related components in her school syllabus, Dviya's engagement with an independent research project helped display a significant degree of originality and initiative in her field of interest. This set her apart, as a student applying to a research-based university.

CONCLUSION

In a competitive early application cycle, students who did research projects had strong admissions outcomes at selective universities. Some Lumiere alumni showcased their research in their list of activities or through a recommendation letter, to prove their academic ability and expertise. Others built on their research and reflected on their experiences in essays to demonstrate personal growth and social commitment. By identifying and effectively communicating the larger narrative that their research is placed in, applicants can make a convincing case for their candidacy and prepare themselves well for college.



NOTES

¹ In this context, “top university” is defined as one of the 8 Ivy League universities. See Appendix 2 for more details.

² From <https://www.cnbc.com/2021/12/02/college-applications-rebounded-by-22percent-this-yearheres-why-.html>

³ From <https://fairtest.org/university/optional>

⁴ The acceptance rate for Lumiere alumni is calculated based on the number of survey respondents who applied to a given university, and who were admitted. Acceptance rates for Ivy League universities based on application and acceptance data for class of 2025. Appendix 2 provides a full breakdown of the calculations.

⁵ Based on classifying areas of respondent interest into “humanities”, “sciences” or “social sciences”.

⁶ Thank you to Pranav Lohia, Riya Maiya, Aryash Jain, Frank Shi Zhang, Dviya Shah and Shhreya Anand for contributing to the case studies, and to Ishaan Chawdhary for support in writing the report.

APPENDIX 1

Full list of early acceptance results

USA

Arizona

Arizona State University Main Campus

California

Santa Clara University (3)

Colorado

University of Denver (2)

Connecticut

Yale University

Georgia

- Emory University
- Georgia State University
- University of Georgia
- Georgia Institute of Technology

Illinois

- Illinois Institute of Technology (2)
- University of Chicago (3)
- Northwestern University (2)

Indiana

- University of Notre Dame
- Indiana University at Bloomington (2)

Iowa

Cornell College

Massachusetts

- University of Massachusetts at Amherst (17)
- Worcester Polytechnic Institute (2)
- Northeastern University

Michigan

- Michigan State University (4)

Minnesota

- University of Minnesota Twin Cities (2)
- Macalester College

New Jersey

- Rutgers at New Brunswick (3)
- Drew University
- Seton Hall University
- Rutgers State University at Newark
- Princeton University (2)

New York

- Fordham University (3)
- Barnard College (2)
- Columbia College
- Union College (2)
- New York University
- Cornell University (2)

Ohio

- Case Western Reserve University (2)
- Ohio University
- College of Wooste

Oregon

Reed College (2)

Pennsylvania

- University of Pittsburgh - Main Campus
- Carnegie Mellon University
- University of Pennsylvania (3)
- Pennsylvania State Univ. Main Campus (7)

Tennessee

Vanderbilt University

Texas

- Texas A&M Univ. at College Station (3)
- University of Texas at Austin
- Rice University

Virginia

Virginia Commonwealth University

Washington D.C

Georgetown University

UK

Bristol, England

University of Bristol

Coventry, England

University of Warwick (3)

Durham, England

University of Durham (2)

Edinburgh, Scotland

University of Edinburgh

Exeter, England

University of Exeter

Nottingham, England

University of Nottingham

Fife, Scotland

University of St. Andrews (2)

London, England

- Imperial College London (2)
- London School of Economics and Political Science
- City University London
- King's College London

Newcastle, England

University of Newcastle

APPENDIX 2

Breakdown of Ivy Results

Name	# Early Apps Submitted (general pool)	# Early Apps Accepted (general pool)	# Early Apps Submitted (Lumiere alumni)	# Early Apps Accepted (Lumiere alumni)
Brown	5,540	885	3	0
Cornell	6,435	650	12	2
Columbia	9,017	1,930	1	1
Dartmouth	2,664	591	1	0
Harvard	10,086	747	9	0
Pennsylvania	7,962	1,194	16	3
Princeton	9,013	792	7	2
Yale	7,939	837	6	1
Total	58,656	7626	55	9

***Notes:**

- Source of general Ivy League application and acceptance data: <https://www.ivycoach.com/2025-ivy-league-admissions-statistics/>
- Source of Lumiere application and acceptance data: Lumiere Alumni University Application Update Survey 2022
- Ivy League Early Acceptance % (General Pool): 13.00% ; Ivy League Early Acceptance % (Lumiere Alumni): 16.36% ; Increased acceptance 25.86%
- Due to data availability issues, data on early applications received and accepted for the general pool from class of 2025
- Princeton does not report early application numbers. Therefore, Princeton's application and admissions numbers are assumed to be an average of comparable institutions (Harvard and Yale)



Founded by Harvard & Oxford researchers, the Lumiere Research Scholar Program is a selective research program for talented students. In the program, students work 1-1 with a researcher from a top university to produce an independent research project.

To learn more or schedule a private info session reach out to us at **contact@lumiere.education**

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