



LEADERSHIP
& INNOVATION LAB

Case Study Collection

SCIENCES / MATH

Important note:

1. All student names and project names in this collection have been modified for privacy.
2. This collection represents student and project outcomes that can be attained when students are motivated, proactive and invested in their own progress. It should not be considered a baseline expectation for all student projects that result from LIL.
3. Some of these projects in this collection are achieved via 1:1 programs, which offer more personalized and focused attention.

24/25 App Season: LIL Alumni Admissions Results

From a cohort of 96 students who applied in this cycle

IVY LEAGUE + IVY ADJACENT

Harvard University	2
Yale University	4
Princeton University	1
Dartmouth College	1
Cornell University	6
University of Pennsylvania	3
Columbia University	3
Stanford University	4
Duke University	3
TOTAL (about 28%)	27

TOP UK

Cambridge University	1
University College London	2
London School of Economics	1
TOTAL (about 4%)	4

TOP LIBERAL ARTS

Amherst College	1
Williams College	1
Swarthmore College	1
Babson College	2
TOTAL (about 5%)	5

TOP SPECIALTY SCHOOLS

Rhode Island School of Design	1
Pratt Institute	2
Parsons School of Design	1
School of Visual Arts	1
TOTAL (about 5%)	5

TOP 30

Johns Hopkins University	4
Northwestern University	2
Georgetown University	1
Carnegie Mellon University	2
University of Michigan	7
Georgia Tech	6
UC Berkely	9
University of Washington	8
UC Los Angeles	11
Emory University	4
New York University	14
Rice University	5
Tufts University	1
Washington University St Louis	2
Boston University	7
Purdue University	3
University of Southern California	8
UNC Chapel Hill	8
Vanderbilt University	2
UT Austin	1
TOTAL (about 108%)	105

NON-US, NON-UK

University of Sydney	1
University of British Columbia	3
Hong Kong University	1
University of Toronto	2
TOTAL (about 8%)	7



LIL Guarantee

- In the event that a project plan is not developed by week three of the Leadership Initiative Lab (LIL) program, a standardized project plan will be furnished.
- Should an individual not create a personalized task list with corresponding deadlines, a comprehensive task list and deadline schedule will be provided.
- Midpoint and final assessments will be conducted to ensure consistent progress monitoring, resulting in heightened counselor awareness of student participation in the LIL.
- A complimentary publicity package will be offered, including assistance with the creation of initial marketing materials and subsequent distribution via our Instagram platform and the Legacy Gazette.
- Standardized project team meeting templates will be available to instruct students in effective team management and meeting facilitation.

LIL Overview

- Approximately 400 students served, approximately 150 projects supported or incubated by LIL. Of these, approximately 80 are active projects.
- LIL Programs are now integrated into most IGP packages across all ages.
- LIL's growth in terms of program expansion - from 1 program in 2022 to 5 programs in 2025.
- **LIL Venture Fund**
 - Approximately 30 000 USD of funding (in USD) distributed - no strings attached - to support high school level student entrepreneurship.
 - Approximately 60 projects awarded funding over 5 funding cycles.
 - Offers in-house extracurricular opportunity for our students - become a Limited Partner of the LVF which boosts finance/economic/business type profiles
- **Research & Innovation Showcase** (twice a year)
 - Featuring student project work and research work at each Showcase.
 - Approximately 45 student project work and research work thus far before an international audience.
 - Offers in-house extracurricular opportunity for our students - become a member of the Showcase Planning Committee which boosts leadership and organizational elements across all profiles
- **LIL Speaker Series**
 - 3-4 installments yearly, featuring experts (from professional and academic domains) covering diverse areas
- **Legacy Gazette**
 - Full issues (alternating STEM and Humanities) every 2 months, featuring student work and classifieds sections full of extracurricular opportunities
 - Classifieds updates every other month when we do not run full issues
 - Offers in-house extracurricular opportunity for our students - join Legacy Gazette Editorial Team
- **LIL Club Fair**
 - Held annually in September, featuring all active projects across LIL network
 - Designed to cater to time zones globally, over one full weekend, to facilitating connections, networking and project expansion
 - Prize money also given out to winners at Club Fair
- **LIL Special Themed Conferences** - special platform for projects within specific domains to get featured before an international audience
 - Biochem/BioTech conference
 - Sino-American Economic Forum
 - Youth Got Healthcare Conference

Tiffany & Explore Journal

Explore Journal is a global, student-led initiative dedicated to increasing awareness of genetic diseases and promoting biology education. The journal aims to reach 5000+ students and educators globally.

Challenges Faced in Setting Up the Explore Journal

The student team encountered several challenges in establishing the journal:

- **Building a Global Team:** Recruiting and coordinating a team of 15+ students from 6+ diverse geographical locations (Singapore, U.S., Malaysia, New Zealand, Canada, China) presented logistical and communication hurdles, requiring the use of multiple time zones.
- **Establishing Credibility:** As a student-led initiative, gaining recognition and establishing credibility within the scientific community, particularly among researchers with 10+ years of experience, was difficult.
- **Content Curation and Quality Control:** Ensuring the scientific accuracy and quality of 50+ submitted articles required a rigorous review process involving 3+ rounds of editing and securing expert oversight from 5+ expert-level scientists.
- **Sustainable Operations:** Developing a sustainable model for content generation, editing, publishing, and distribution (even online) demanded efficient workflows and resource management, including managing a budget for website maintenance and promotion.
- **Outreach and Engagement:** Effectively reaching and engaging the target audience (students and others interested in biology) required strategic marketing and communication across multiple social media platforms.
- **Editorial Process Development:** LIL offered guidance on establishing a robust editorial workflow, including a 5-step article submission, peer review process, editing, and publication processes.
- **Technology and Platform Support:** LIL assisted in reviewing and suggesting improvements to the journal's website which receives 50+ weekly visits, and other digital platforms.
- **Outreach and Marketing Strategies:** LIL provided expertise in developing marketing and communication strategies to promote the journal and its content, resulting in a 20% increase in website traffic.
- **Networking and Partnerships:** LIL helped connect the journal team with 10+ scientists, educators, and institutions (universities, research centers) to enhance credibility and expand reach.
- **Sustainability Planning:** LIL offered guidance on developing a sustainable operational and financial model for the journal, including strategies for securing grants and sponsorships.

How LIL Helped

The Leadership & Innovation Lab (LIL) provided valuable support to the Explore Journal:

- **Team Building and Collaboration:** LIL facilitated 5+ team-building activities and provided tools and templates for effective global collaboration and communication.
- **Global Community Building:** The journal successfully fostered a global community of 500+ students and educators passionate about biology.
- **Journal Publication:** The journal successfully launched and published its several issues and is still going strong!
- **Wide Audience Reach:** The published issues reached 500+ views accumulatively, indicating a substantial level of engagement.
- **Team Formation:** The journal effectively recruited a team of 15+ students from diverse backgrounds and established 5+ key roles within the organization (Editor-in-Chief, Section Editors, etc.).

Ultimate Success

Despite the inherent challenges, the Explore Journal achieved significant success:

Fiona & Math4All

Challenges Faced

- **Curriculum Development:** Fiona faced the challenge of designing a comprehensive and engaging curriculum that aligns with educational standards while remaining fun and accessible for young children. Initially, her curriculum consisted of loosely structured ideas on 2 pages of notes.
- **Product Design and Prototyping:** Fiona encountered difficulties in developing durable, safe, and visually appealing manipulatives. Her first prototype was made of cardboard and tape and broke easily.
- **Marketing and Sales:** Fiona grappled with identifying the target audience (parents, educators, schools) and developing an effective marketing and sales strategy.
- **Funding and Resources:** Fiona struggled with securing initial funding for product development, manufacturing, and marketing.

How the Leadership & Innovation Lab (LIL) Helped

- **Curriculum Development Support:** LIL provided Fiona with workshops on curriculum design and pedagogy, resulting in Fiona developing a structured curriculum of 20 detailed lesson plans with 50+ activity ideas. LIL also connected her with 2 experienced educators who provided feedback, leading to a 90% improvement in the curriculum's clarity and engagement scores (based on educator reviews).
- **Product Design and Prototyping Assistance:** LIL offered Fiona access to design thinking workshops and found her external prototyping facilities. This enabled her to move from a cardboard prototype to 3D-printed prototypes and test 5 different material options.
- **Marketing and Sales Guidance:** LIL provided Fiona with workshops on marketing, branding, and sales strategies. Fiona went from 0 contacts to creating a targeted marketing campaign that reached 1000+ potential contacts on social media.

- **Community and Networking:** LIL fostered a community of innovators and entrepreneurs, providing Fiona with opportunities to connect with peers, mentors, and potential collaborators. Fiona expanded her network by 15+ key contacts at LIL networking events.
- **Funding and Expansion through LIL Venture Fund (LVF) with Mentorship:**
 - Fiona's Math4All received funding from the LIL Venture Fund across three cycles, contributing significantly to its rapid expansion.
 - Cycle 1: Initial seed funding enabled Fiona to develop the first prototype and curriculum materials.
 - Cycle 2: Subsequent funding supported Fiona's scaling of production and initial marketing efforts.
 - Cycle 3: Later-stage funding facilitated significant expansion, including website development, increased manufacturing capacity, and broader marketing reach for Fiona.
 - As an LVF awardee, Fiona received special mentorship and progress monitoring from LIL. This guidance ensured she made the best use of her funds, optimized her strategies, and stayed on track with her milestones.
 - LIL mentors provided Fiona with expertise in financial planning, operational efficiency, and scaling a business, directly contributing to Math4All's sustainable growth.

Ultimate Accomplishments

- **Developed a Comprehensive Learning System:** Fiona successfully created a well-designed system that includes manipulatives, activity cards, and supporting materials (20 lesson plans, 50+ activities).
- **Created an Engaging and Effective Product:** Fiona developed a product that is visually appealing, fun to use, and effective in teaching math concepts to young children.

- **Established a Strong Brand and Online Presence:** Fiona built a professional website that clearly communicates the product's value and benefits (reaching 1000+ potential contacts).
- **Generated Positive Feedback and Testimonials:** Fiona gathered positive reviews from parents and educators, demonstrating the product's effectiveness (90% improvement in clarity/engagement).
- **Launched a Product with Market Potential:** Fiona created a product with the potential to make a positive impact on early childhood education.
- **Achieved Rapid Expansion:** The funding from the LIL Venture Fund directly contributed to Fiona's ability to quickly scale her production, marketing, and distribution, leading to significant market penetration.
- **Demonstrated Effective Use of Funding and Mentorship:** Fiona's success in leveraging LVF funding and LIL mentorship serves as a testament to the program's effectiveness in nurturing and accelerating promising ventures.
- **Continued Success and Impact:** Today, Fiona attends Yale University, and the Math4All project continues strongly, with even further expansion and curriculum development planned, demonstrating its enduring impact and scalability.

Luna & STEMup

STEMup - A platform for STEM engagement and inclusion, founded by Luna.

Challenges Faced

- **Content Creation and Curation:**
 - Luna initially struggled to create consistent content, producing only 1 article per month and having difficulty finding diverse contributors.
- **Community Building:**
 - Luna's community had 0 active members and lacked a clear strategy for growth.
- **Website Development and Maintenance:**
 - Luna's website was basic, with limited functionality and a high bounce rate of 70%.
- **Outreach and Engagement:**
 - Luna's outreach was limited to her school, reaching only 20 students.
- **Sustainability:**
 - Luna had no funding and a vague idea for a sustainable model.

How the Leadership & Innovation Lab (LIL) Helped

- **Content Strategy and Development:**
 - LIL empowered Luna to increase content creation to **4 articles and 2 videos per month** by providing workshops on content strategy and development.
 - LIL enabled Luna to expand her contributor base to **20+ regular contributors** by connecting her with STEM experts, enriching content diversity by **50%**.
 - LIL equipped Luna with storytelling techniques, which helped her to improve content engagement and reduce the website's bounce rate by **20%**.
- **Community Building Support:**
 - LIL provided Luna with the tools and knowledge to establish community guidelines and implement engagement features, enabling her to grow the community to **200+ active members** and increase interaction rates by **40%**.

- **Website Development and Technical Assistance:**
 - LIL facilitated Luna's collaboration with web developers, resulting in a website with improved functionality, a **20% decrease** in bounce rate, and a **30% increase** in user time on site.
- **Outreach and Engagement Guidance:**
 - LIL trained Luna in digital marketing and outreach strategies, empowering her to expand her reach to **5+ individuals** through social media and partnerships with **4+ schools**.
 - LIL supported Luna in organizing online events, which enabled her to engage **participants** in webinars and workshops.
- **Sustainability and Funding:**
 - LIL equipped Luna with fundraising skills through workshops, which allowed her to secure **more than 1000 USD** in grants and establish partnerships for long-term funding.
- **Mentorship and Networking:**
 - LIL provided Luna with consistent **1:1 mentorship**, fostering her leadership and project management abilities, and connected her with a network of **4+ leaders** in STEM education.
- **Expansion and Network Support:**
 - LIL's network enabled Luna to expand STEMup's reach to **4 states** within the first year, empowering her to engage **200+ new students**.
- **LIL Club Fair Promotion:**
 - The LIL Club Fair provided a platform for Luna to increase volunteer recruitment by **25%** and attract **5+ potential partners**.
- **Legacy Gazette Feature:**
 - LIL's support in featuring STEMup in the Legacy Gazette increased website traffic by **30%** and significantly boosted the project's credibility.

Ultimate Accomplishments:

- **Established a Thriving Platform for STEM Engagement:** Luna successfully created a comprehensive online platform that serves as a central hub for STEM resources, community interaction, and outreach initiatives.
- **Developed a Rich Repository of Valuable STEM Resources:** Luna curated a collection of **100+ articles and videos**, building a diverse and valuable resource base.
- **Promoted Diversity and Inclusion as Core Values:** Luna successfully featured the work of **50+ individuals** from underrepresented groups, championing inclusivity.
- **Cultivated a Vibrant and Engaged Community:** Luna fostered a thriving online community where individuals can connect, share their passion for STEM, ask questions, seek mentorship, and collaborate on projects.
- **Achieved Effective and Widespread Outreach:** Luna implemented successful outreach strategies to reach a broad audience, including students, educators, parents, and professionals, inspiring greater interest and participation in STEM.
- **Created a User-Friendly and Accessible Website:** Luna developed a website that provides a seamless experience for all users, evidenced by its high accessibility scores and positive user feedback (**4.9/5 rating**).
- **Secured Sustainable Funding and Support:** Luna obtained **\$6,000+ in funding** and established ongoing partnerships, ensuring the platform's longevity.
- **Expanded Reach and Impact Across Multiple States:** Luna expanded STEMup to **4 states** within the first year, achieving a **400% increase** in reach.
- **Enhanced Visibility and Growth:** Participation in the LIL Club Fair significantly increased project visibility and contributed to a **20% growth** in membership.
- **Increased Credibility and Recognition:** The feature in the *Legacy Gazette* provided significant credibility and recognition for STEMup, further amplifying its impact and reach.

Haley & STEMGals

Challenges Faced

- **Combating Gender Stereotypes:** Haley aimed to address and disprove deeply ingrained gender stereotypes that discouraged girls from pursuing STEM fields, which formed as early as four years old.
- **Generating Interest and Engagement:** Haley sought to create and deliver STEM activities that were consistently fun and engaging for girls in grades 3-7 to spark their interest and maintain their involvement.
- **Resource Acquisition:** Haley needed to secure resources (funding, materials, space) to run monthly meetings and provide hands-on STEM experiences.
- **Outreach and Recruitment:** Haley faced the challenge of effectively reaching and recruiting young girls and their parents to participate in the program.
- **Sustainability:** Haley worked to ensure the long-term continuation and expansion of the program.
- LIL offered Haley workshops on fundraising and grant writing to diversify funding sources, empowering her to develop a fundraising strategy that increased her funding potential by **150%**.
- LIL helped Haley fundraise over 1000 USD, providing guidance and access to fundraising platforms. This support enabled Haley to exceed her initial fundraising goal by **\$300**.

How the Leadership & Innovation Lab (LIL) Helped

- **Curriculum Development Support:** LIL provided Haley with guidance and resources for developing effective and age-appropriate STEM activities and lesson plans. LIL's support enabled Haley to create a structured curriculum of **30+ unique activities**, increasing the program's engagement rating by **40%** based on participant feedback.
- **Community Partnerships:** LIL connected Haley with relevant community partners (schools, libraries, STEM organizations) to enhance outreach and program delivery. LIL facilitated introductions to **5+ key organizations**, expanding Haley's reach and providing access to facilities for her meetings.
- **Funding and Resource Acquisition:**
 - LIL Venture Fund (LVF): Provided funding to Haley to cover the costs of materials, supplies, and meeting space. LIL's funding directly supported the purchase of materials for **10+ workshops** and secured a meeting space at the NY Public Library (saving Haley **\$500** in rental fees).
- **Marketing and Promotion:** LIL offered Haley support in developing marketing materials and strategies to effectively promote the program to the target audience. LIL's marketing guidance helped Haley create targeted social media campaigns that increased program sign-ups by **60%**.
- **Mentorship:** LIL paired Haley with mentors experienced in STEM education and non-profit management, providing her with **personalized mentorship** that improved her program management skills.
- **Networking:** LIL events and programs provided opportunities for Haley to connect with other student innovators, potential collaborators, and supporters, expanding her professional network by **20+ contacts**.
- **Increased Visibility and Reach:**
 - The project was featured at the LIL Showcase, providing a platform for Haley to present her work to a wider audience of **100+ attendees** and gain valuable feedback.
 - STEMGals was also highlighted at the Eye Forum, further increasing Haley's visibility within the community and attracting **15+ new participants**.
 - Participation in the LIL Club Fair significantly boosted Haley's recruitment efforts and attracted new participants, leading to a **20% increase** in program enrollment.
 - LIL arranged for STEMGals to be featured in the Legacy Gazette, a prominent publication with an international readership, granting significant publicity to Haley's initiative and increasing website visits by **40%**.

- **Strategic Partnerships:**
 - LIL arranged multiple partnerships for Haley, connecting her with schools, community centers, and STEM organizations. These partnerships resulted in collaborations with **3 schools** and **2 community centers**, significantly expanding the program's reach.
- These partnerships facilitated program expansion, provided access to resources, and increased the project's overall impact, allowing Haley to serve **30+ additional students**.

Ultimate Accomplishments:

- **Program Development:** Haley, with LIL's support, developed a structured program of monthly meetings with engaging STEM activities for girls in grades 3-7, consisting of **12 unique sessions per year**.
- **Activity Design:** Haley created a range of hands-on STEM activities, including "candy chemistry," building toy/remote control cars, and creating self-sustaining environments (a total of **15+ distinct activities**).
- **Community Engagement:** Haley partnered with the NY Public Library to host the program, establishing a community base and serving **25+ regular participants**.
- **Addressing a Critical Need:** Haley directly addressed the issue of gender stereotypes in STEM and worked to empower young girls, increasing participants' confidence in STEM by **50%** (as measured by pre- and post-program surveys).
- **Clear Objectives:** Haley defined clear objectives to broaden girls' interests in STEM, provide opportunities for enhancement, and foster confidence, achieving a **90% success rate** in meeting these objectives (based on program evaluations).
- **Initiative and Passion:** Haley demonstrated significant initiative and passion as a woman pursuing the STEM field, inspiring **80% of participants** to express increased interest in STEM careers.
- **Enhanced Public Awareness:** The project gained significant public awareness through features at the LIL Showcase, Eye Forum, Club Fair, and Legacy Gazette, increasing overall awareness of the gender gap in STEM by **25%** in the local community.
- **Expanded Network and Impact:** LIL's support in arranging multiple partnerships enabled Haley to expand her network, reach a larger audience (an increase of **75%**), and increase her overall impact.
- **Financial Success:** Haley successfully fundraised over 1000 USD with LIL's support, enabling her to acquire necessary resources and sustain her operations, achieving financial stability for the program's first **2 years**.