

Sowing Seeds of Inspiration: Letters to a Pre-Scientist

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ABSTRACT

A multitude of career possibilities exist today; however, many remain unaware of the range of careers available in Science, Technology, Engineering, and Mathematics (STEM). The Letters to a Pre-Scientist volunteer program aims to bridge that gap by providing children in underprivileged communities the opportunity to explore various STEM careers through pen-pal correspondence with STEM professionals. Throughout the school year, partners exchange themed letters, cultivating personal connections and facilitating idea-sharing. Students gain exposure to a diverse range of STEM careers by discussing their partner's insights and their own thoughts and ideas on these subjects with their classmates.

This poster will showcase the Letters to a Pre-Scientist program and share my journey as a novice Pen Pal last year. It will also encourage those who may not traditionally think of themselves as STEM professionals to become involved with the program and contribute to inspiring future scientists in their pursuit of STEM careers.

INTRODUCTION

Letters to a Pre-Scientist, Inc is a thriving 501(c)(3) not for profit organization that coordinates a volunteer program to connect STEM professionals with school-aged students in underserved areas through letter writing. During a school-year long letter exchange, pre-scientists dive deep into the higher education and career journey of their pen pal, matched by common interest, to reveal the true person behind the title. Pre-scientists also engage with their classmates, learning about other STEM professionals' careers, scattering seeds of inspiration for all budding pre-scientists. The following is my account of how I became involved with Letters to a Pre-Scientist, my experience as a novice pen pal during my first year, the minor challenges that I faced, and the unexpected benefits that were yielded.

BREAKING NEW GROUND

I first learned of Letters to a Pre-Scientist (LPS) during a Town Hall at Certara in July 2022 and was immediately interested. During the 2021-2022 school year, Certara had piloted corporate sponsorship of the program which originally only included employees from a single department within the company. However, due to the success of Year 1, they were expanding the program company-wide and seeking volunteers for pen pals for the upcoming school year. At the time, the only information I had about the initiative was that it paired "students with STEM professionals from around the world to share hand-written letters about their careers and expose students to a view of science beyond the typical classroom." But this was enough to whet my appetite to learn more about the program because it included letter writing of the physical kind, not electronic as so many of today's communications are, and also because one of my close friends has a career working with pre-teen and teenaged youth to promote STEM education in Buffalo, NY.

After the meeting, I found a link for the program which led to a well-crafted website with several additional details. It noted the number of letters to be exchanged and mentioned that training and guidance during the letter writing process itself would be provided. The major themes of the letters were also provided, as well as an FAQ and advice from previous volunteer pen pals.

While scrolling through LinkedIn, I saw a post about LPS from another employee of Certara and decided to reach out to him to ask about participation in the program through our corporate sponsorship. He gave me the name of our contact internally, along with a link to the website form where I could volunteer outside of Certara in case the spots had already been filled. After reaching out to our contact, I was informed that the 10 guaranteed spots had already been granted, so I registered myself directly through the website. It was simple enough to do, the form asking for minimal information on the kind of work I was involved in and for a one-line description of my role written in a way that was simple enough for a grade-schooler to understand.

However, since I wasn't able to register through the sponsorship, I wasn't guaranteed to be matched as a pen pal. I honestly wasn't sure that my position qualified me for the role because I don't work in a lab, am not an engineer, and my math skills are more of the common kind. So, I was thrilled when I received the confirmation email that I was accepted to be matched. The email let me know I would need to participate in about an hour-long virtual training session I had read about during my initial research, and I was given a few weeks to complete the training before I would be matched with a student.

I found the online training to be very informative and useful to prepare me for the pen pal experience. It was broken into two different levels of training, one for returning pen pals and one for first timers, and it did only take about an hour to complete. There were different articles and videos included and even a forum to interact with others providing feedback on the educational material provided. Lastly, it provided guidance on updating our job description written at the time of registration that would ultimately be used to match us with our pre-scientist.

Once I was matched, I received another email informing me of the first name of the student and inviting me to participate in a meet and greet with the student's STEM teacher. All professionals matched with students in the teacher's class could join via Zoom to meet the teacher as well as other volunteers. During the call, my pre-scientist's STEM teacher expressed how excited all her students were to participate in the program and how the letter opening parties and sharing information with their peers would be one of the highlights of her students' class time.

SOWING SEEDS

Students would write the first letter to introduce themselves and tell us about their educational interests and hobbies outside of school, and I was thrilled to receive my first letter a few weeks after the meet and greet. I had been matched with a female eighth-grade student from San Jose, California whose favorite subject in school was social studies and who enjoyed reading, making bracelets, watching tv shows and movies along with spending time with friends and family. She was also inquisitive of me, including five questions for me to answer about my role and interests.

The goal of the first letter I was to write was to detail our occupation in student-friendly but informative language, which may sound simple on the surface, but caused a bit of writing and rewriting to tailor my thoughts. It can be challenging to describe to adults who are not familiar with clinical trials what exactly I do and why it's important, much less try to simplify the content to be relatable for a student while still being interesting! Plus, I have to admit, it's been quite some time since I was in eighth grade, and I also wanted to provide enough detail about my career without going overboard or off on a tangent. The prompts given by LPS for this round were helpful to develop the content, as were the details in my pre-scientist's original letter including her interests. Referring to the hobbies that my pen pal listed, I ended up borrowing from the process of jewelry making to explain the concept of clinical data standardization. In one example, I used the common practice of sorting beads by color to distribute each into different groups as a way to familiarize her with creating standardized datasets from different types of clinical trial data.

GERMINATING

I received a response in mid-November and in that letter, my pen pal mentioned that hearing from me had inspired her to read a book somewhat related to STEM she had initially been disinterested in. The book, *The Love Hypothesis* by Ali Hazelwood, follows a graduate student working in a research laboratory, and she said after receiving my letter, she was 'suddenly very interested'. Intrigued, I borrowed a copy and followed along, learning that the author was a STEM advocate having published a few young adult novels starring women in the field. It was great to receive feedback that the first round had made an impact, and we also strengthened our relationship by sharing details on traveling, TV shows, and our families, including pets.

The second letter I wrote was on the topic of higher education. This one was a bit easier to write, even though it ended up being one page longer than my first one. In the letter, I included information about my non-traditional and winding path through community college, university, and graduate school. Also, after reading the book my pre-scientist had mentioned which made use of the laboratory setting, I shared some of my experience working in the research lab when I was in grad school. As an added bonus, I had seen on the LPS website that I was permitted to send items to my pen pal, so while I was at the phuse EU Connect conference in Belfast, I made sure to visit all the booths in the exhibition area to collect several items to send with my letter.

Early in the new year, I received the third letter, and my pen pal responded that she had originally thought conferences sounded boring, but my letter had made them sound 'pretty fun'. Again, I was delighted to hear that our exchanges were beneficial and was eager to continue. However, writing my third letter was a little more challenging than the second, but not in quite the same way as the first. The topic of the third letter was overcoming obstacles and we were to write about a time in our lives when we conquered adversity we initially thought to be insurmountable. While I understood the importance of this, it was still difficult to decide what exactly to share, how much detail to give, and to fully embrace vulnerability. Even though the exercise was mildly uncomfortable, it also proved to be somewhat cathartic reflecting on past challenges, realizing the struggles were temporary, and being grateful for the opportunity to grow.

The fourth and final letter from my pen pal expressed gratitude for sharing my story and being open, which validated my efforts in deciding on the content for my previous letter. The topic of our final letter was to wrap up and include our wishes for our pre-scientist's future. I found that this came easily because my pen pal had become more enthusiastic

about STEM throughout the school year and also because she had shared details of her family life that I could draw from. However, I would be remiss if I didn't say that writing the last letter brought a mix of emotions: sadness for the realization I may never communicate with my pre-scientist again; happiness to complete my first year in the program successfully; gratitude for being able to participate; and hopeful I had made a lasting impact in even some small way.

CONCLUSION

Throughout the first year of my LPS experience, I felt highly supported by the team at LPS, revisiting the content of their emails and websites often. There was sufficient but not excessive communication from the LPS team with guidance on topics, prompts, and examples of outstanding letters, and there was even a Discord channel for discussions with other participating STEM professionals.

Some of the challenges I faced included creating relatable and intriguing age-appropriate content, underestimating the amount of time I would need to create letters that were engaging, informative, but not too complex, and sharing the more difficult parts of my career journey. However, these proved to be minor issues in the grand scheme of things, and I do not believe these to be showstoppers in terms of discouraging participation from myself or others in the future. Not only being able to convey complex thoughts and ideas clearly, but to make it engaging while doing so is a unique ability that can help improve communication, understanding, and maximize retention; useful for those in positions of any kind. Realizing I spent more time composing letters than I thought I would need initially was mainly due to the fact that my letters tended to be multiple pages as I enjoyed corresponding with my pen pal and responding to all of her questions, both professional and personal. Lastly, although sharing the more difficult times in my life was challenging, there was no requirement on how intense or harrowing the experience needed to be; it just needed to serve as an example of perseverance after tribulation to humanize STEM professionals and inspire.

Though there were minor challenges, there were several benefits to participating. Having a position with the ability to influence young minds is often attributed mainly to parents, teachers, and close family members, and I was grateful to be given that opportunity. Being able to do it in a way that cultivated interest in STEM career pathways allowed me a unique way of reflecting on my own path and growth as an individual many don't often consciously decide to do. Also, being able to contribute to opportunities for students who are in underserved areas was gratifying because I truly believe that a career in STEM should be available and attainable for all, regardless of their socioeconomic status.

If you've decided you'd like to embark on your own journey as a STEM professional pen pal, I encourage you to go to the Letters to a Pre-Scientist website, <https://prescientist.org/>, scroll down to the bottom of the home page, and sign up to subscribe to their mailing list. This will allow you to be notified once registration opens and you'll be able to sign up at that time. You should also contact your Human Resources department to find out if your employer is already a partner with LPS, as registering through a corporate sponsorship will ensure you're guaranteed a pen pal position. In the meantime, if you'd like to support the program, donations of any amount are accepted to cover the costs of stamps and envelopes for students, technology, limited Program Managers, and training for STEM professionals and teachers. Participating will not only help support a worthy cause by impacting underserved students' lives but may also yield unexpected benefits that will enrich your own as well.

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CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

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