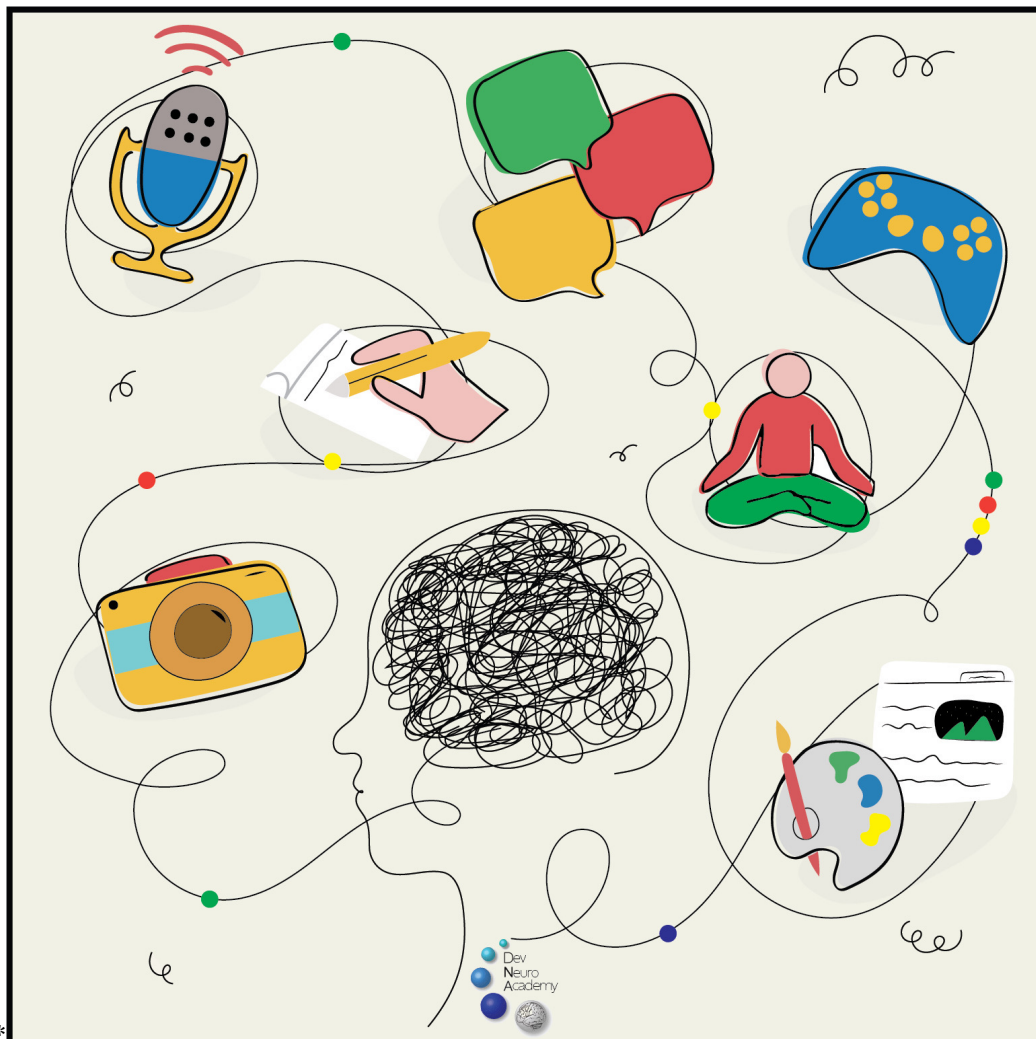
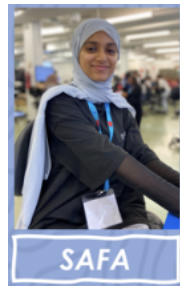


DEV NEURO ACADEMY CHAMPIONS

By Safa Arshad



The Dev Neuro Academy initiative constitutes an exceptional summer educational program designed to offer enrichment avenues for A-level students from socio-historically marginalised backgrounds. In tandem, the program has given rise to the DNA Champions program. This offshoot accommodates students desiring enhanced engagement through extended activities and a proactive role in contributing to the subsequent editions of the DNA summer school.

Fortuitously, I was granted the privilege of participation in the DNA Champions program, affording me the prospect of engaging in a multitude of exceptional opportunities. These encompassed immersive laboratory encounters under the mentorship of esteemed professors and PhD candidates specialising in stem cell research, cerebral organoids, and a diverse array of cognate subjects.

My inquiry into nanomedicine and nanotechnology's medical applications, particularly in the context of the COVID-19 vaccine, formed the crux of my Extended Project Qualification. In this pursuit, the investigative endeavours of Dr Benedikt Berninger captured my attention as he explored the potential of stem cells to regenerate neurons following traumatic incidents, potentially linked to conditions like Parkinson's disease. Notably, his exploration entailed a ground-breaking approach involving the differentiation of early-stage skin cells into functional neurons, obviating the need for embryonic stem cells.

Additionally, I had the esteemed privilege of participating in a journal club based on the paper titled "Neurons That Restore Walking After Paralysis,"¹ led by PhD student Emily and DNA alumni Cate. This session delved into the realm of neural network stimulation for post-paralysis recuperation, specifically delving into the domain of Electrical Stimulation Physical Stimulation rehabilitation (EES rehab) and its efficacy in enhancing motor function scores in both human subjects and murine models. The professors elucidated their personal research interests and scholarly journeys, which greatly resonated with my fellow participants and me. For those among us still charting our academic trajectories, this discourse was particularly enlightening, illuminating the myriad paths and research avenues available.

¹ Kathe, C., Skinnider, M. A., Hutson, T. H., Regazzi, N., Gautier, M., Demesmaeker, R., Komi, S., Ceto, S., James, N. D., Cho, N., Baud, L., Galan, K., Matson, K. J., Rowald, A., Kim, K., Wang, R., Minassian, K., Prior, J. O., Asboth, L., . . . Courtine, G. (2022). The neurons that restore walking after paralysis. *Nature*, 611(7936), 540-547. <https://doi.org/10.1038/s41586-022-05385-7>

Partaking in this summer school and engaging with distinguished scientists and researchers has given me unparalleled insights and experiences. This exposure has expanded my academic horizons, impressing upon me the multifarious research opportunities inherent within the scientific landscape. The role of a DNA Champion has proven pivotal in facilitating such enriching encounters and educational pathways, which I am certain I would not have encountered otherwise.

As a member of the DNA Champion program, I was privileged to contribute to the discourse surrounding mental health and well-being within the context of A-level studies and the ensuing rigours of university application processes. This opportunity manifested through participation in Annica Wang's podcast, where diverse perspectives converged to explore effective coping strategies. Witnessing the shared challenges of fellow students and their innovative approaches engendered a profound sense of camaraderie, alleviating the burden of isolation and stress that often accompanies such pivotal junctures.

Participation in the podcast exerted a transformative influence on my perspective, highlighting the significance of equilibrium between scholastic pursuits and personal well-being. Moreover, the experience extended beyond the realm of academia, permitting me to nurture my creative inclinations beyond the realm of scientific endeavours. Notably, I was entrusted with the task of conceptualising a logo* for the podcast, which provided an outlet to express my artistic proclivities. This creative interlude, in conjunction with the chance to temporarily step away from academic endeavours, served as a poignant reminder of the multifaceted dimensions of productivity and personal growth.

Moreover, during the course of my academic trajectory, the series of DNA Champions gatherings provided a distinct vantage point to observe the synchronous journeys of my peers. These occasions facilitated the expansion of my social network, enabling the cultivation of friendships while also furnishing a platform for the exchange of invaluable insights. Engaging in discussions about stress management, particularly within the context of shared age and life stage, proved to be enlightening, offering diverse coping strategies and perspectives.

A particularly impactful exercise entailed composing letters addressed to our future selves, a practice that yielded profound personal growth. The eventual receipt of these letters served as a poignant reminder of how far I've come, prompting a tangible sense of pride and accomplishment. This practice disrupted any tendency to downplay my achievements and

instead instilled a culture of recognition and celebration. By acknowledging the diligence I invested in my academic pursuits, this process elicited a forward-looking perspective, fostering anticipation for the fruition of enduring efforts.

Additionally, I enjoyed regular gatherings with my fellow DNA Champions, affording us the opportunity to convene within the exquisite environs of the Science Gallery and explore the immersive realms of the Museum of Life Sciences. This experience offered a twofold advantage, fostering social engagement amidst the rigours of academia while also nurturing a heightened appreciation for the diverse specimens on display.

The museum's meticulously preserved and three-dimensionally reproduced specimens underscored the unwavering commitment of scientists to their vocation, encapsulating the profundity of their dedication. This exposure catalysed an exploration of evolution and the captivating narrative of human development. Concurrently, interactions with scientists, particularly the discourse with Stephen Webster regarding the art of science communication, resonated significantly. The acquired insights have crystallised the importance of effectively conveying scientific concepts, and this newfound understanding bears relevance to real-world scenarios. The revelation of the pivotal role of appropriate science communication has fortified my resolve to make scientific knowledge universally accessible and comprehensible.

Henceforth, the DNA Champion program has facilitated my personal evolution and engendered a profound realisation of academia's intrinsic splendour. It has unequivocally affirmed that education, relentless perseverance, and fervent commitment collectively constitute the pathway to progress and the gateway to encountering remarkable individuals despite the occasional scarcity of daily interactions. The program has afforded me invaluable insights into the art of cultivating interpersonal bonds and honing transferable proficiencies, thereby enriching my real-world capabilities. The program's fundamental teachings underscore the paramount importance of maintaining equilibrium between scholastic endeavours and holistic well-being, alongside the significance of effective communication and mutual support in achieving collective success.

I have come to recognise that my potential is boundless, buoyed by the multitude of opportunities the program has bestowed upon me—opportunities that would have remained beyond reach without the unwavering dedication of the DNA team, with special acknowledgement to Leigh Wilson. Her constant encouragement to remain engaged and

participative has been instrumental in my journey. This program has propelled my evolution as a leader and magnified my understanding of the pivotal role that teamwork assumes in the broader contexts of life and professional engagement. Gratitude swells within me for having gained these insights prior to embarking on my trajectory in medicine. The proficiencies nurtured through this program, undoubtedly, are poised to be exceedingly advantageous on this forthcoming path.