AWARDEE REPORT FORM

NAME	Florina Szabó
TWITTER HANDLE* *optional*	N/A
UNIVERSITY	University of Oxford
NAME OF AWARD	Barclay-Smith Travelling Fund 2023/24 (Round 5 application)

PURPOSE OF AWARD *conference/event attended/organised (full name) with city and dates.*

The *Barclay-Smith Travelling Fund* enabled me to present a poster at the Anatomical Society Summer Meeting, which was held at the John McIntyre Conference Centre at the University of Edinburgh between 24 and 26 July 2024. The meeting also marked the 25th anniversary of the foundation of one of the leading journals of the Anatomical Society, the Aging Cell.

REPORT: What were your anticipated benefits?
Minimum number of words between 200-400. Please write in coherent paragraphs.

Considering that I am in the final year of my DPhil studies and writing my PhD dissertation, I believe attending conferences is crucial to sharing my research findings and gaining new knowledge in my field. I was therefore searching for an opportunity to present my PhD research at a scientific meeting where I could challenge myself by presenting to a non-specialist audience. While I had the chance to present my research at an international conference in Milazzo, Italy, in June 2022, that meeting was specifically organised for academics, senior researchers, and postdoctoral scientists working on the development of the cerebral cortex and thus, intended for a highly specialised audience.

I hoped the Anatomical Society Summer Meeting would serve as an ideal platform to engage with a broad scientific community where experts from different fields of medicine and the anatomical sciences gather to discuss their latest findings, research, and ideas. Informal discussions with presenters and attendees during the summer meeting would provide me with novel ideas and fresh views on my current work, as well as assist me in discovering any knowledge gaps. Besides engaging with well-established researchers, I was equally eager to meet and discuss my research with young investigators who are in similar stages of their careers. I was particularly interested in learning about the research of fellow PhD students and familiarising myself with the variety of projects being funded by the Society. Having received funding from the Anatomical Society for my DPhil studies, I was thrilled to present my findings to members of the Society as well.

In addition to the networking benefits, I hoped to hear presentations on cutting-edge research in neuroanatomy and neuroscience and apply insights from keynote presentations to my ongoing research projects. I anticipated the Anatomische Gesellschaft talks to be an excellent symposium to acquire new

information on synaptic plasticity and synapse physiology. Given that my PhD research examines the role of synaptic transmission in regulating the development, density, and distribution of inhibitory GABAergic neurons in the murine cortex, I hoped to gain new knowledge about the mechanism of synaptic plasticity in the human brain. Attending the Anatomical Society Summer Meeting would further help me formulate new research questions inspired by keynote presentations and panel topics.

COMMENTS: Describe your experience at the conference / lab visit / course / seminar/ event.
Minimum number of words between 200-400. Please write in coherent paragraphs.

I considered the Anatomical Society Summer Meeting in Edinburgh to be a truly unique scientific event as the meeting featured a symposium presented by the *Anatomische Gesellschaft* in addition to marking the 25th anniversary of the *Aging Cell*. This conference was strongly tied to my academic studies and scientific pursuits. I am reading for a *DPhil in Physiology, Anatomy, and Genetics* at the University of Oxford, and my PhD research was funded by the Anatomical Society. In addition to the pre-conference workshop specifically organised for early career researchers like me (*Title: Elevate Your Pitch: Communicating Across Disciplines and Audiences*), the nine sessions held over the three days addressed a variety of topics spanning from clinical anatomy to future geroscience research.

I particularly enjoyed the sessions on the biomarkers of aging and cellular senescence where I gained fresh knowledge about epigenetic clocks that can predict the biological age of different tissues of the body based on levels of DNA methylation. One of the most intriguing talks I heard was delivered by Professor Steve Horváth (*Title: DNA Methylation Age of Different Organs and Cell Types*), known for developing the Horváth clock, whose research discovered that the epigenetic age of the cerebellum is younger than that of other brain areas in centenarians. These sessions not only broadened my horizons but also brought my attention to the importance of studying brain regions and environmental interactions in aged animals. In addition to attending the sessions on multimorbidity in ageing and ageing theories, the *Anatomische Gesellschaft* symposium had a wide range of speakers with a neuroscience focus that was very beneficial for my own DPhil study.

Considering that my PhD research investigates the effects of evoked synaptic vesicle release from excitatory projection neurons on inhibitory interneurons, the sessions on synaptic transmission and activity-dependent plasticity were the most enlightening and informative. For instance, I was particularly intrigued by the talk of Maximilian Lenz from Hannover Medical School on the synaptic plasticity of cortical neurons in the human brain. One of the most interesting findings of his talk was that vitamin A derivates induce changes in excitatory synaptic strength and dendritic spine morphology in superficial layer 2/3 human cortical neurons. I was equally interested in the talk delivered by Anna Albrecht who presented her new research on hippocampal fear modulation and conducted a spatial transcriptomic analysis of the orexin type 1 and type 2 receptors.

During the conference, I also had the honour and privilege of presenting my poster to the President of the Anatomical Society, Professor Tracey Wilkinson. The poster displayed one of the primary findings of my DPhil research, i.e., *Chronic abolition of evoked vesicle release from layer 5 projection neurons alters the laminar arrangement of parvalbumin interneurons in the adult cortex*. At the poster session, I received insightful and valuable feedback and enjoyed sharing my findings with a broad audience.

The Anatomical Society Summer Meeting also allowed me to network with researchers in the fields of neuroanatomy and neurobiology while acquiring new insights into tissue engineering, skeletal muscle

homeostasis, and epigenetic clocks. I was particularly interested in a poster presented by Gina Krause from the Otto-von-Guericke University Magdeburg whose work demonstrated the role of somatostatin interneuron in contextual fear memory retrieval.

I am truly grateful to the Anatomical Society for awarding me the Barclay-Smith Travelling Fund which enabled me to attend the summer meeting at the University of Edinburgh. Over the three days, I learnt a great deal and gained further knowledge from my chosen field.

REPORT: In relation to skills, what were the most important things you gained? *(does not apply to equipment grant.* For public engagement/outreach awards what did your audience gain and how did you evaluate success?

Minimum number of words between 200-400. Please write in coherent paragraphs.

While this was not my first time delivering a poster presentation at an international conference, the Anatomical Society Summer Meeting was a brilliant platform to practise showcasing my research to a wider, non-specialist audience. Throughout my DPhil studies, I had attended prior winter and summer meetings of the Society, but this conference was unique in that it focused heavily on aging and cellular senescence, shifting the emphasis from general anatomy to geroscience research. This conference offered a well-rounded program that catered to the various needs and interests of professionals in the field, making it a must-attend event for anyone looking to stay current and connected in the field of anatomy and aging.

Attending the meeting was crucial for my professional development as it provided many opportunities to learn new skills, network with researchers and participants, and stay updated on the latest trends and advancements in the field. It enhanced my knowledge about general anatomy and cellular senescence and helped me expand my professional network as an early career researcher. Besides developing networking and leadership skills, the conference also provided a valuable opportunity to refine my presentation and communication skills which are essential for success in academic jobs. Not only did I become a better presenter, but I also learnt how to distil complex scientific concepts and communicate my research in a clear and concise manner. Presenting my work to individuals at varying stages of their careers, ranging from undergraduates to tenure-track faculty, was a challenge I relished. By participating in discussions with speakers, I had invaluable exposure to different perspectives and ideas while learning how to conduct rigorous studies and think critically. Given that the conference programme included both 20-minute oral presentations and 5-minute flash talks, I learnt how to schedule and organise a talk based on the allotted time.

REPORT: How do you think you will put this learning experience into practice in the future? For public engagement/outreach awards how with the materials/knowledge generated by this activity be used in the future? *Minimum number of words between 200-400. Please write in coherent paragraphs.*
During the conference, I noticed the importance of networking and utilising connections made for potential collaborations or partnerships. I have also understood that scientific meetings serve as excellent platforms for professional development and career advancement through meeting potential collaborators or employers. Following the Anatomical Society summer meeting, I will aim to explore additional resources recommended by conference speakers and seek out other conferences, workshops, or training opportunities in the field of neuroscience and anatomical sciences. I have also learnt the importance of following up with contacts made during the conference and expressing my interest in their work. I will also review my meeting notes and reflect on key takeaways from presentations and discussions. Having attended several winter and summer meetings of the Anatomical Society, I have understood the importance and benefits of attending scientific conferences. The opportunities for learning, networking, and collaboration are unparalleled. Moreover, the knowledge gained from the sessions and the connections made with fellow researchers will undoubtedly prove invaluable in advancing my research projects. As a final-year PhD student and early-career member of the Society, I will be able to advise young undergraduate and postgraduate students on how to make the most out of scientific meetings and encourage them to attend conferences. In my view, conferences provide valuable opportunities to learn new skills such as active listening, public speaking, time management, and critical thinking. I am confident I will be able to utilise all these skills throughout my DPhil studies.
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YES
Graphical Images: If you include graphical images you must obtain consent from people appearing in any photos and confirm that you have consent. A consent statement from you must accompany each report if relevant. A short narrative should accompany the image. Answer N/A not applicable, YES or NO in the box below
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SIGNATURE	Florina Szabo	DATE	31 July 2024

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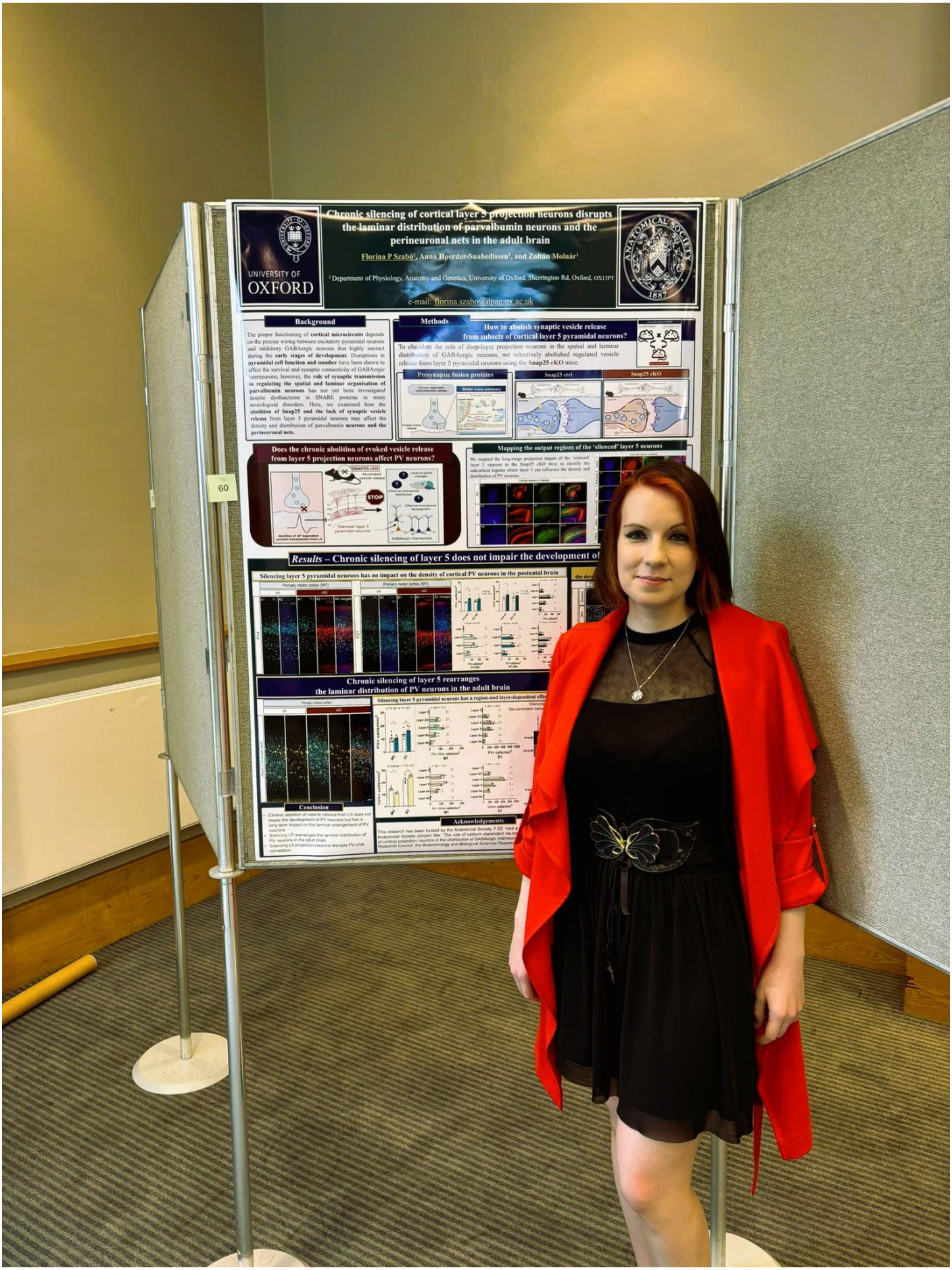
Chronic silencing of cortical layer 5 projection neurons disrupts the laminar distribution of parvalbumin neurons and the perineuronal nets in the adult brain
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Background
Methods
How to abolish synaptic vesicle release from subsets of cortical layer 5 pyramidal neurons?
Presynaptic fusion proteins
Snap25 ctrl
Snap25 cKO
Does the chronic abolition of evoked vesicle release from layer 5 projection neurons affect PV neurons?
Mapping the output regions of the 'silenced' layer 5 neurons
Results – Chronic silencing of layer 5 does not impair the development of
Silencing layer 5 pyramidal neurons has no impact on the density of cortical PV neurons in the postnatal brain
Chronic silencing of layer 5 rearranges the laminar distribution of PV neurons in the adult brain
Conclusion
Acknowledgements
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Day 1
Session 1