I am grateful to the British Geophysical Association for providing funding through the Gray-Milne Travel Fund, which assisted in the completion of fieldwork in 2023 associated with my PhD (Archaeological Geophysics, Bournemouth University). The focus of my research is the application of large-scale geophysical prospection methods for the archaeological investigation of early modern battlefield sites. The Battle of Waterloo (fought in 1815 in Belgium), where Napoleon Bonaparte was defeated for the final time by a European-wide coalition, was used a case study. Alongside a larger archaeological research project organized by British charity Waterloo Uncovered, geophysical survey is being used to examine areas of the expansive battlefield landscape (which totals nearly 1,000 hectares) for archaeological traces of the battle.

Mobile survey configurations for fluxgate magnetometry and frequency-domain electromagnetic induction were used to survey nearly 100 hectares of the battlefield. A wide range of anthropogenic features have been revealed including ferrous metal (ordnance) scatters, previously unknown structures, brick kilns, a quarry pit, remains of a forge, and lost parcel boundaries. While these point to the longer-term use of the palimpsest landscape, many are also likely to be directly related to the battle itself. A related focus has been the mapping of recent colluvial (eroded) deposits that have accumulated in the time since the battle, largely as a result of intensive agricultural landuse. These are highly relevant to the archaeology of the battle, as they inform on the likelihood of preservation of sensitive archaeological deposits. They are primarily recognized in electrical datasets through subtle variations in conductivity linked to soil texture. A series of boreholes were also conducted in select locations to validate geophysical anomalies (Figure 1). In all, the work has added considerably to our understanding of the battlefield and has opened numerous new avenues of investigation for the future.

*Figure 1: The author undertaking borehole sampling to validate geophysical anomalies at the battlefield of Waterloo. The prominent artificial mound in the background was constructed as a memorial to the battle in the early 1820s.*