This week’s article talks about the widespreadness and the identification of batch effects in high-throughput experiments. Batch effects refer to systematic non-biological differences that occur in the data due to variations in the experimental conditions. the authors' analysis of nine independent genomic studies reveals that variations attributable to batch effects could account for 32% to 100% of the observed differences between control and experimental groups. The article also discusses various strategies to mitigate the impact of batch effects, such as applying good experimental design and applying statistical methods that mitigate the batch effect. I believe focusing on the experimental aspect is more impactful, as it addresses the root cause of the batch effect. I came across a study [1] which indicates that while statistical tools can mitigate batch effects, they might result in exaggerated confidence as well.

Reference

[1] Nygaard V, Rødland EA, Hovig E. Methods that remove batch effects while retaining group differences may lead to exaggerated confidence in downstream analyses. Biostatistics. 2016 Jan 1;17(1):29-39.