

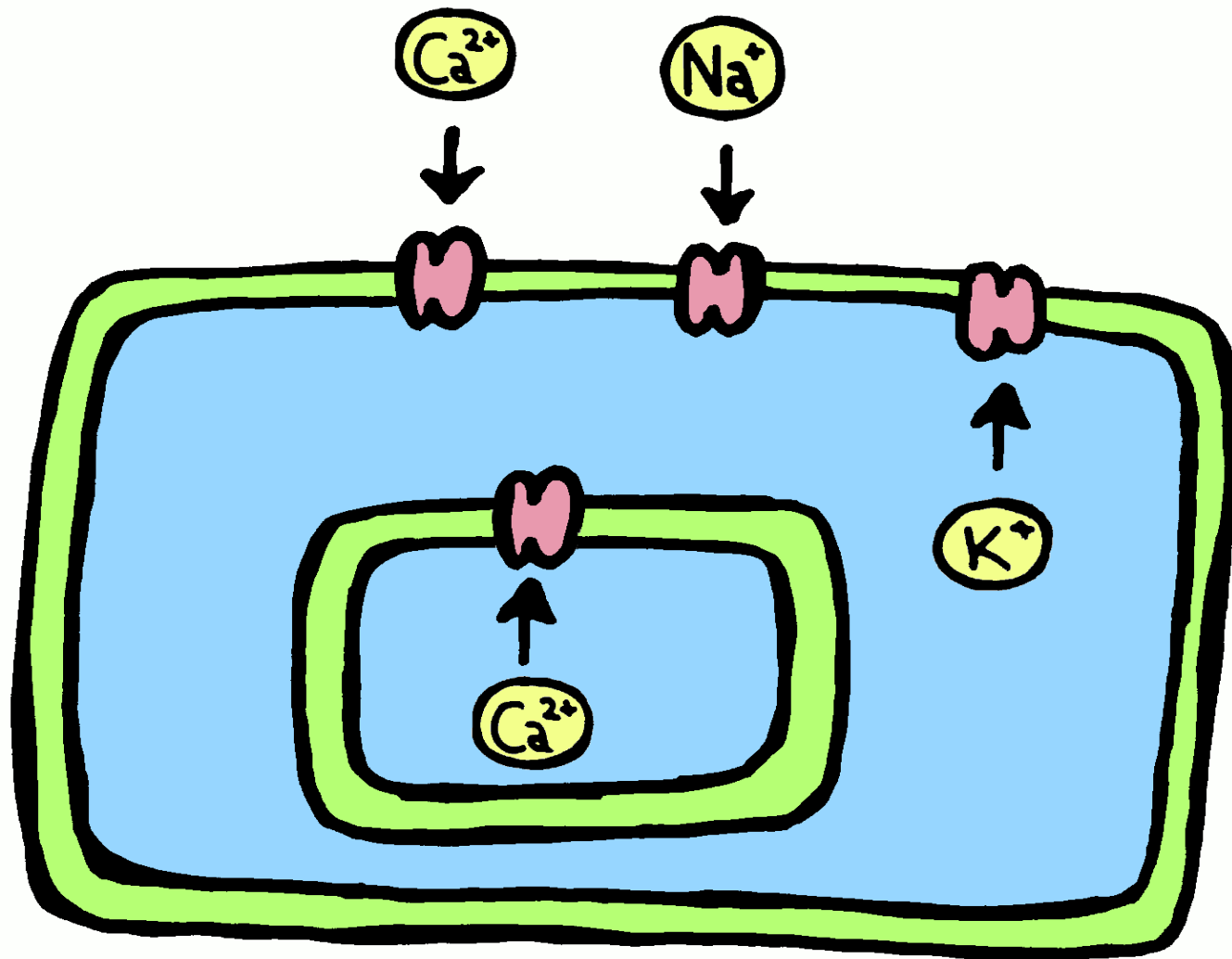


Afterdepolarisations as a predictor of drug-induced arrhythmias

Beth McMillan

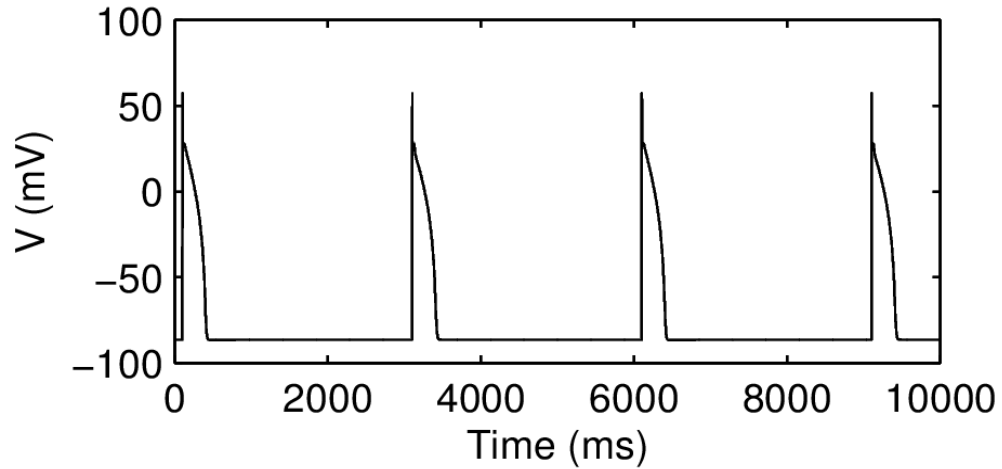


Electrophysiology

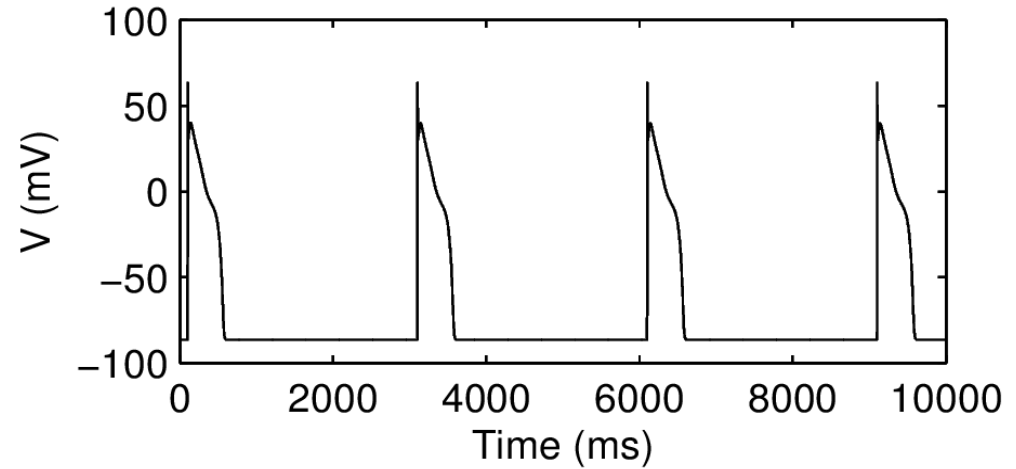


Provoking afterdepolarisations

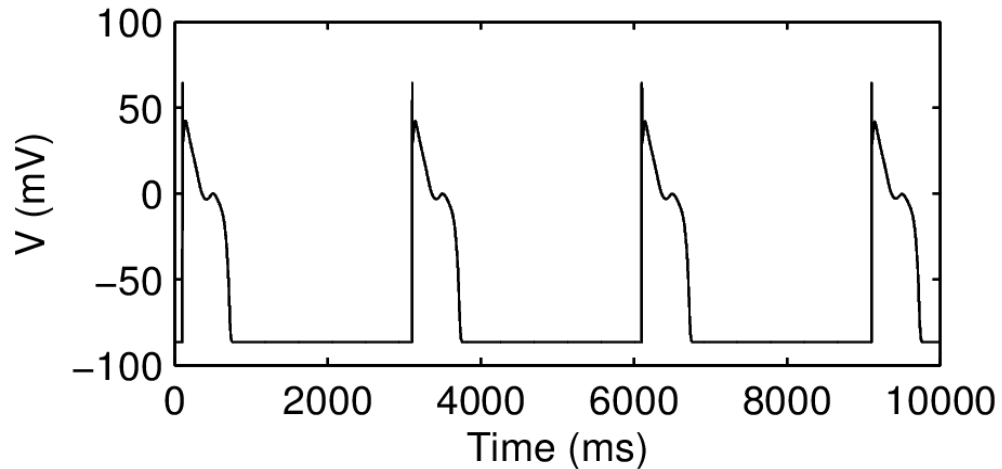
1



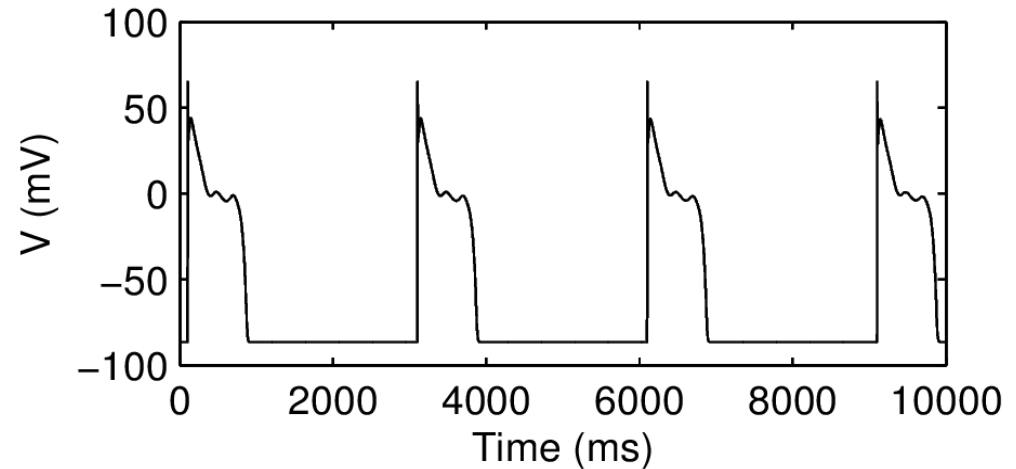
6



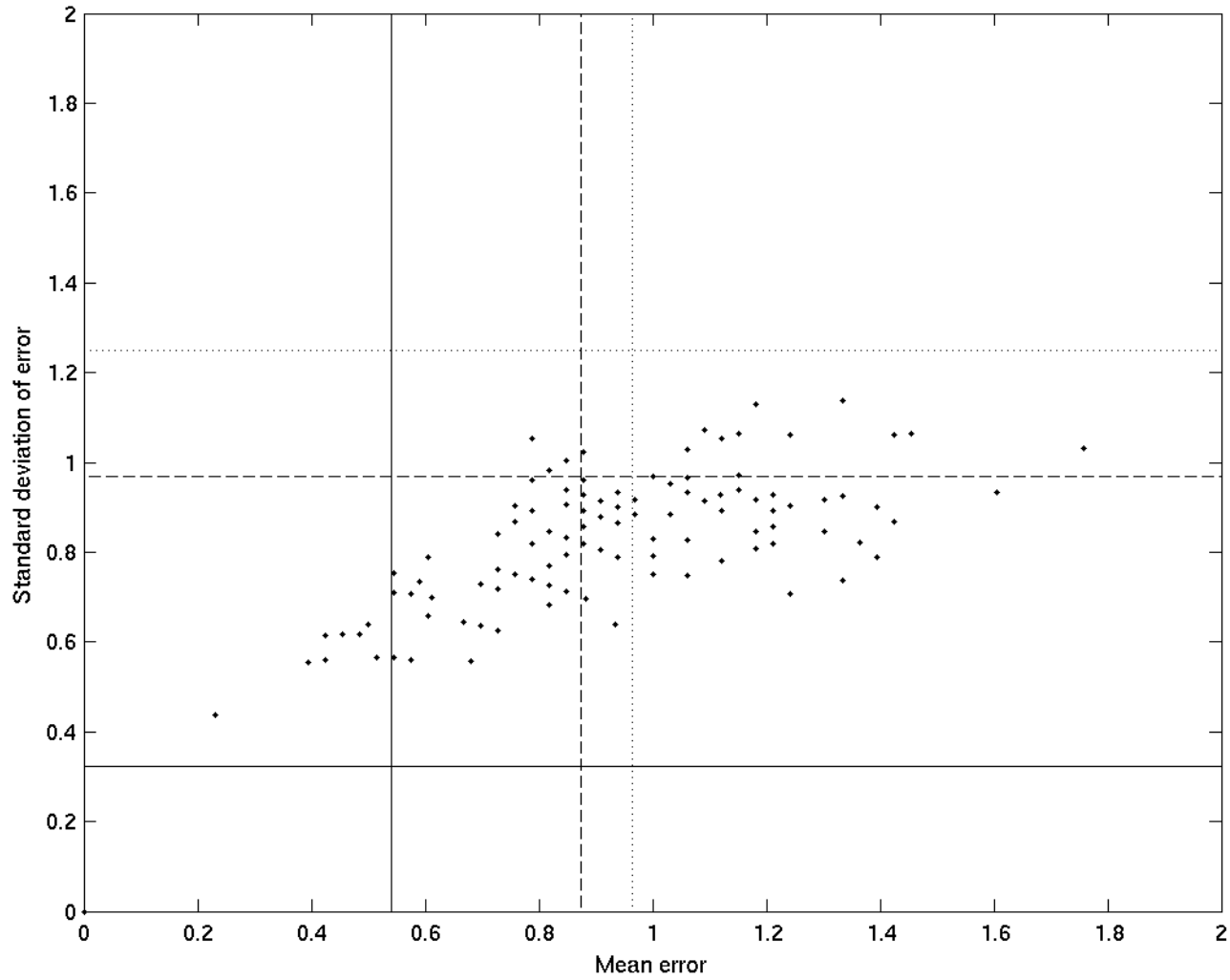
7



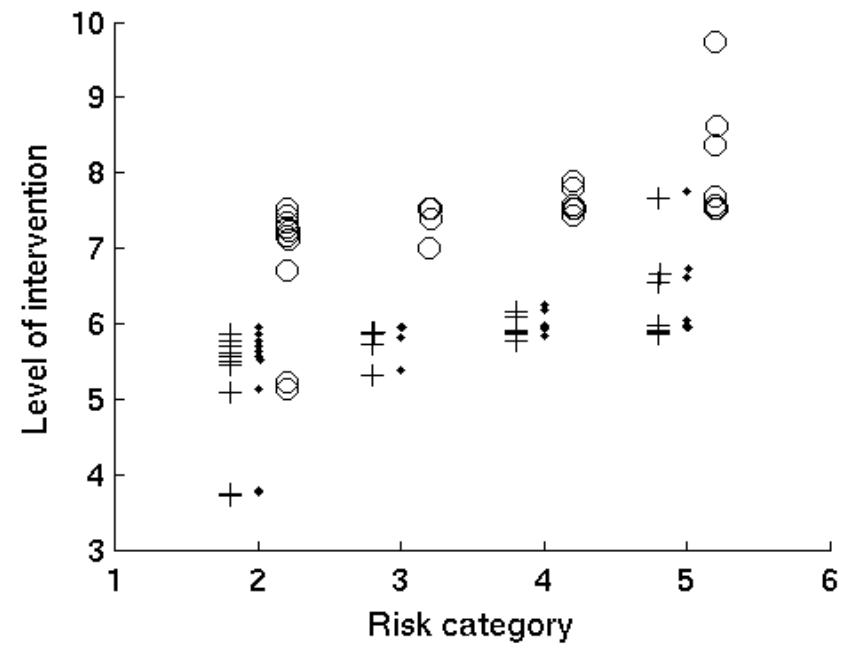
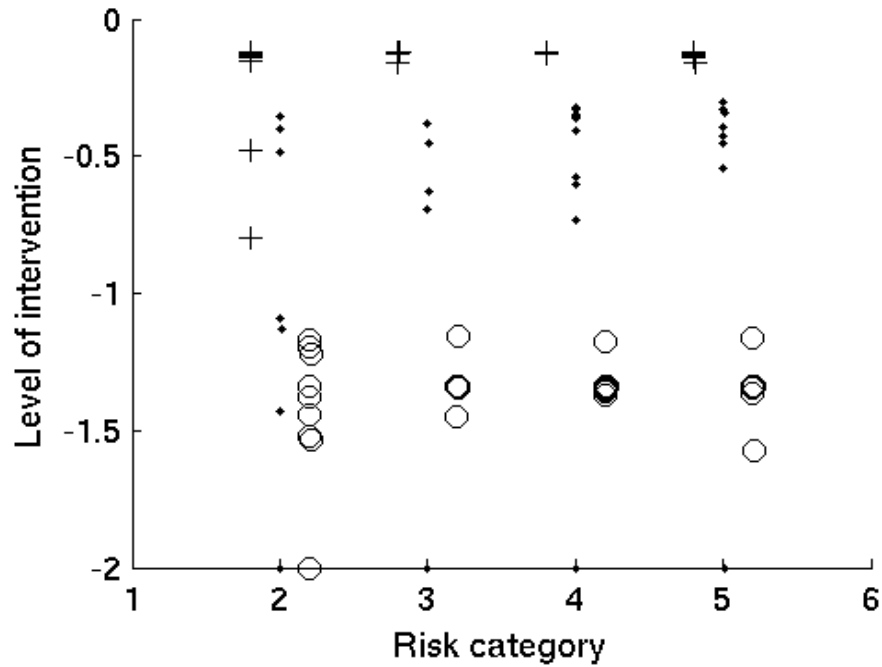
8



Errors



Extracellular potassium



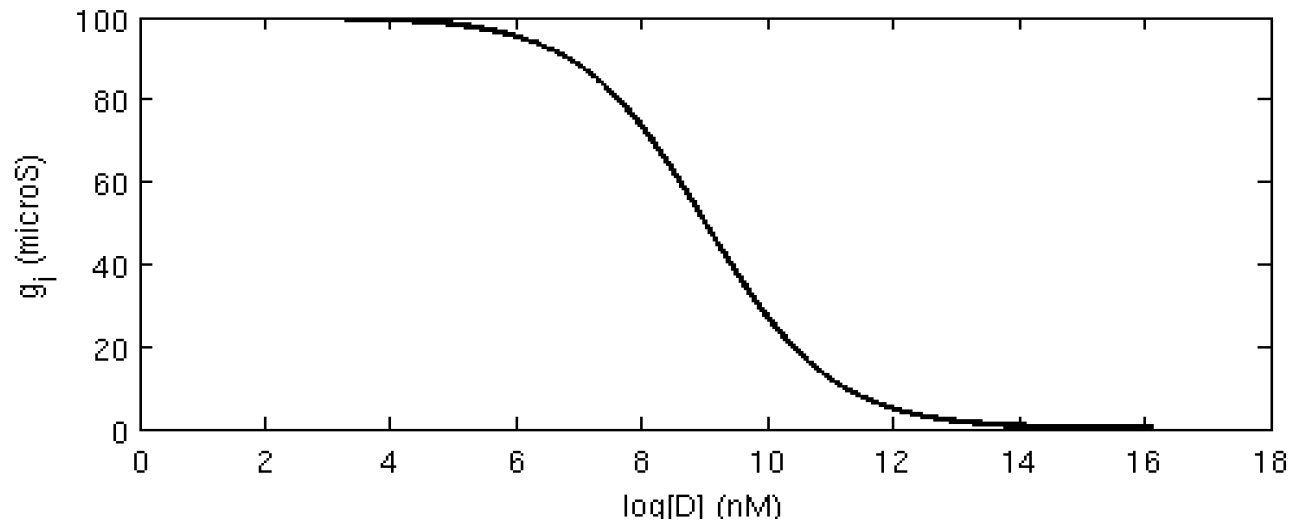
Acknowledgements

Thanks to my supervisors, Gary Mirams and David Gavaghan, the Computational Biology group and the EPSRC for funding me.



Appendix 1 – drug block

$$g_j = g_{control,j} \left[1 + \left(\frac{[D]}{[IC_{50}]} \right) \right]^{-1}$$



Appendix 2 - Risk categories

1. Anti-arrhythmic drugs which are designed to prolong the QT interval, which carry a high, but acceptable, level of risk for Torsades-de-Pointes.
2. Those drugs which have been suspended or withdrawn from the market due to Torsades-de-Pointes risk.
3. Drugs for which there are numerous case reports or a measurable incidence of Torsades-de-Pointes.
4. Drugs associated with isolated case reports of Torsades-de-Pointes.
5. Drugs which are not associated with any published reports of Torsades-de-Pointes.

