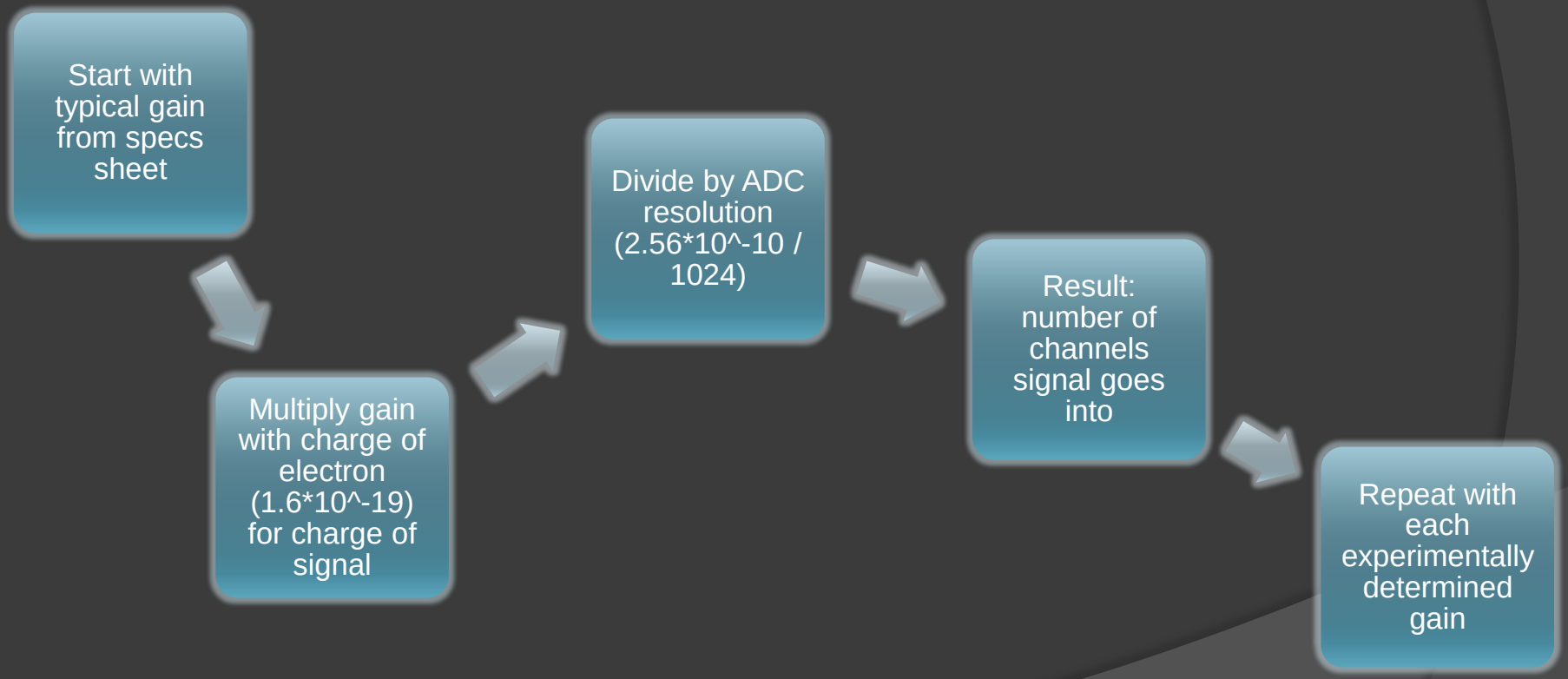
Lillian Anderson

ADC AND S.E.P. CALCULATIONS

To find channel numbers of S.E.P



of Channels of S.E.P.

H.V. (-kV)	2” Gain	5” Gain	2” Charge (C)	5” Charge (C)	2” # Chan.	5” # Chan.
1.700	5.364E5	3.029E6	8.52E-14	4.846E-13	0.34	1.94
1.799	5.206E5	6.427E6	8.330E-14	1.028E-12	0.33	4.11
1.898	5.206E5	8.361E6	8.330E-14	1.338E-12	0.33	5.35
2.000	1.704E6	1.237E7	2.726E-13	1.979E-12	1.09	7.92
2.099	2.114E6	1.694E7	3.382E-13	2.710E-12	1.35	10.84
2.199	3.755E6	2.169E7	6.008E-13	3.470E-12	2.40	13.88
Typical (specs based)	1.00E6	2.00E7	1.60E-13	3.20E-12	0.64	12.80

Summary

- ADC *can* measure the single electron peak signal from both the 2” and 5” PMTs
- 2” PMT S.E.P. signal would be swallowed by pedestal, so it wouldn’t show up on an ADC histogram
- Thus the amplification factor would need to be about 10 for an easily measured signal
  - This would bring the signal up to the size of the 5” PMT, which the ADC can easily measure