

Discrete to Continuous

- We can draw a curve going through the midpoints of the tops of the bars in a discrete distribution.
- As the number of bars gets larger in a discrete distribution this curve approaches a continuous probability distribution.
- Sometimes we can approximate a discrete distribution with a continuous distribution or vice versa.
- E.g. To the right we see a (discrete) binomial distribution with $n = 80$ and $p = 0.5$ (and thus $\mu = np = (80)(0.5) = 40$ and $\sigma = \sqrt{npq} = \sqrt{(80)(\frac{1}{2})(\frac{1}{2})} = \sqrt{20}$ approximated by a (continuous) normal distribution with the same mean and standard deviation.

