

# ST414: Advanced Topics in Statistics

## *Asymptotic Statistics*

Lectures 2, 3

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# What we've seen in previous lecture...

- Likelihood-based inferences for scalar parameter.
- Pivots and their use for hypothesis testing and the construction of confidence intervals.
- Approximate pivots and why they can be useful.

# Some basic tools for asymptotics

Main tools that are used for the development of asymptotic approximations in Statistics:

- Taylor's theorem,
- modes of convergence of sequences of random variables and limiting results,
- moments, cumulants and their generating functions, and,
- (stochastic) asymptotic expansions.