Criteria for a Competitive Proposal

Likely high impact
New and original ideas
Succinct, focused project plan
Knowledge of subject area or published, relevant work
Experience in essential methodology
Clarity concerning future direction
Sound scientific rationale
Realistic amount of work
Sufficient detail
Critical approach

Essentials for Scientific Discovery

Theory
Data
Evidence
Mechanism
(Then you can draw inferences)

Research Proposal Outline

Introduction
  Problem (theoretical construct)
  What is known
  What is not known
  Therefore my objective is.

Model species or system
Hypothesis (objective) I
  Experimental design
  Data analysis
  Possible (expected) outcomes
Hypothesis (objective) II (repeat)
Timeline
Broader impacts (Significance of results)
Literature cited

Challenge to Investigators

Know the natural history of your species
Question the assumptions of methods and test the predictions of hypotheses
Know the universe of your study, what inferences can you make; are you studying a species or a question
Advance science, not “. . . more research is needed . . . “
Question conventional wisdom – think outside the box
Use quantitative (predictive [defensible]) terminology


