Reviewing Grants

Rationale

Hypothesis clearly stated with relevant comparison condition and testable
Likelihood hypothesis is correct
Both positive and negative outcomes of interest
Congruence with prior studies
Should more basic questions be answered first
Lit review – focused, comprehensive citation (including in press, presentations), balanced review vs argue one's own point, adequate interpretation of results
Alternate explanations consider
Is the hole you are filling important. If so, why?

Significance
Magnitude of problem
Novelty
Increase understanding- effect on theories about behavior
Improve public health/clinical outcomes
Magnitude of impact on above

Experience
Prior productivity
Content expertise
Pilot work
Used methods previously

Participants
How selected/recruited
Generalizability: Are groups over/underrepresented?
Inclusion criteria too strict/lenient
What is group of interest?
S expectancies
Flowchart of S attrition (see Consort)
Will Ss comply
Ability to recruit
Compensation is adequate
Sample size adequacy – use estimated effect size, base rates usually smaller than you think

Design
What is control group or base rates
Use multiple control/comparison groups?
Think factorially
Prefer to do within-Ss
What is the adequacy of test – esp if obtain negative results

How does test map onto hypothesis – are constructs well-operationalized
Control/comparison group will do better than you think
Possible confounds/moderators, interactions needed to show effect
Dismantle in later studies
Time, order, testing effects
Biases if not random assignment
Groups differ on variables other than variable of interest
Regression to the mean
Control groups: placebo, no drug, historical, multiple baseline, usual care, optimal care, standard care
Use positive control group; e.g. another tx
What are historical, epidemiological base rates
Pure vs stratified randomization
Will diffusion, demoralization, occur – See Campbell book
Randomize 2:1 if one group of more interest?
Anticipated dropout rate- reasons for dropouts
Baseline stability and noise, will practice or order or carryover effects occur
Usually there is initial noise in behavior change- focus on later data?
Is intervention well-operationalized
How handle missing contacts
Debriefing of participants. Ask questions to help interpret results

<u>Interventions</u>
Adequate dose, duration and timing of intervention
Adequate training of therapists
Practicality
Both conditions same emphasis/quality
Monitor compliance
Tx those in control group after study
Blindness maintained

<u>Measures</u>
Designated major outcome
If multiple outcomes are they expected to be convergent and, if so, how handle inconsistent results across outcomes
How well operationalized
Actual behavior>self-report of behavior>subjective reports>intentions, attributions
What is not being measured
Proxy vs real measures
Process/mechanism measures
Blinding of assessments
Add pre and post qualitative interviews
In what ways do measures map onto concepts
Test-retest and interrater reliability, predictive validity, sensitivity
Stability of outcome
Use measures hypothesized not to change as specificity test

What is likely effect of demand bias and political correctness
Use challenge or eliciting tests
Measure functional status
Are questions ambiguous

Results
A priori criterion for success
Stats tied to hypotheses
Magnitude of effect- clinical significance
Outliers
Type of scale – continuous, ordinal, categorical, nominal
Distribution for stats
Covariates included
Examine raw data
Avoid transformations when possible
Do not chop up continuous to ordinal/categorical unless clinically meaningful
Is nominal made to seem ordinal
Sufficient variability for correlational analyses
Linear vs curvilinear vs threshold effects
Dose-responsivity
Adverse events – clinically significant, cause dropouts
Amount of overlap of groups
Intent-to-tx, when designated as S

Interpretation
Causality – within subjects crossover > parallel groups RCT >prospective prediction > cross sectional association
Relate to others work
Is it actually a conceptual replication
Limitations of generalizability, qualifiers needed
Was it conservative or liberal test
Impact on field
Alternate explanations
Most conservative interpretation
Significance for explaining vs intervening

Human Ss
Safety, especially for subpopulations
Confidentiality
Ethics of control group
Subject concerns
Legal issues
Steps to minimize risks
Alternate treatments
How handle emergencies, break code
Consistent with usual care