

The slide features a teal-to-blue gradient background with a white circuit board pattern on the left side. The text is centered and reads:

**THE COMPONENTS OF A NIH
GRANT APPLICATION**

SYR PRECONFERENCE WORKSHOP

OCTOBER 2019

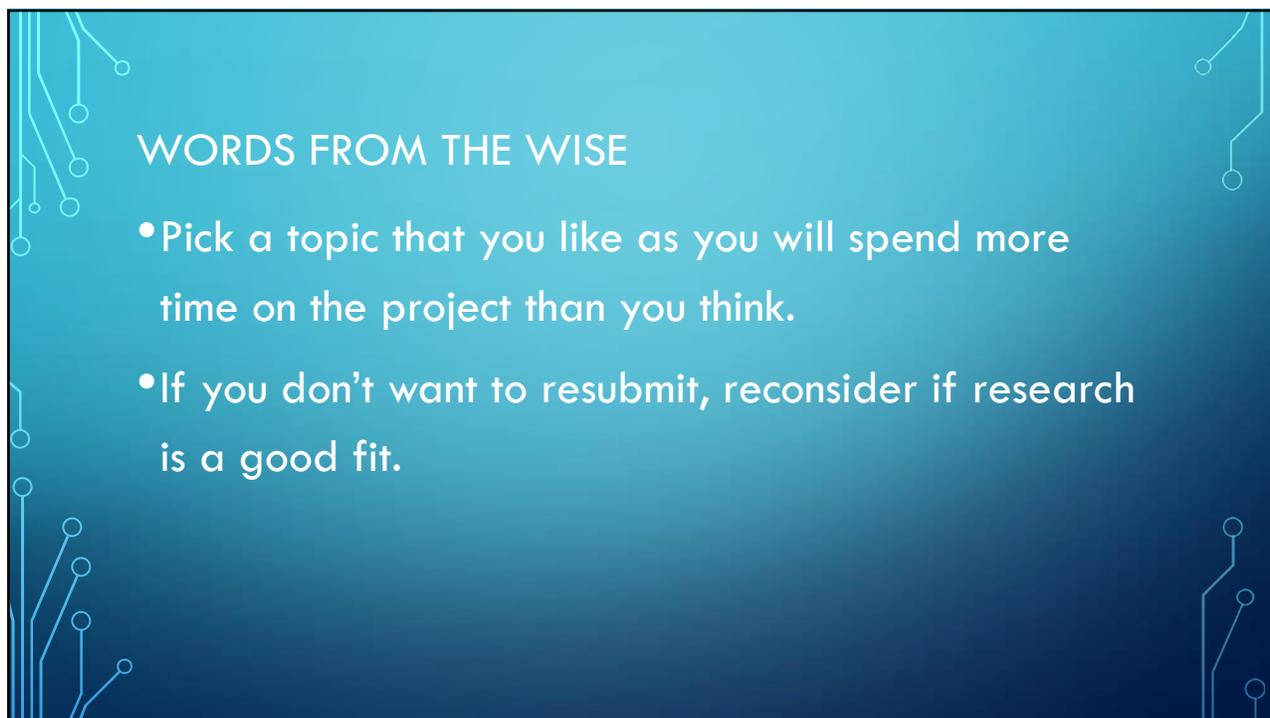
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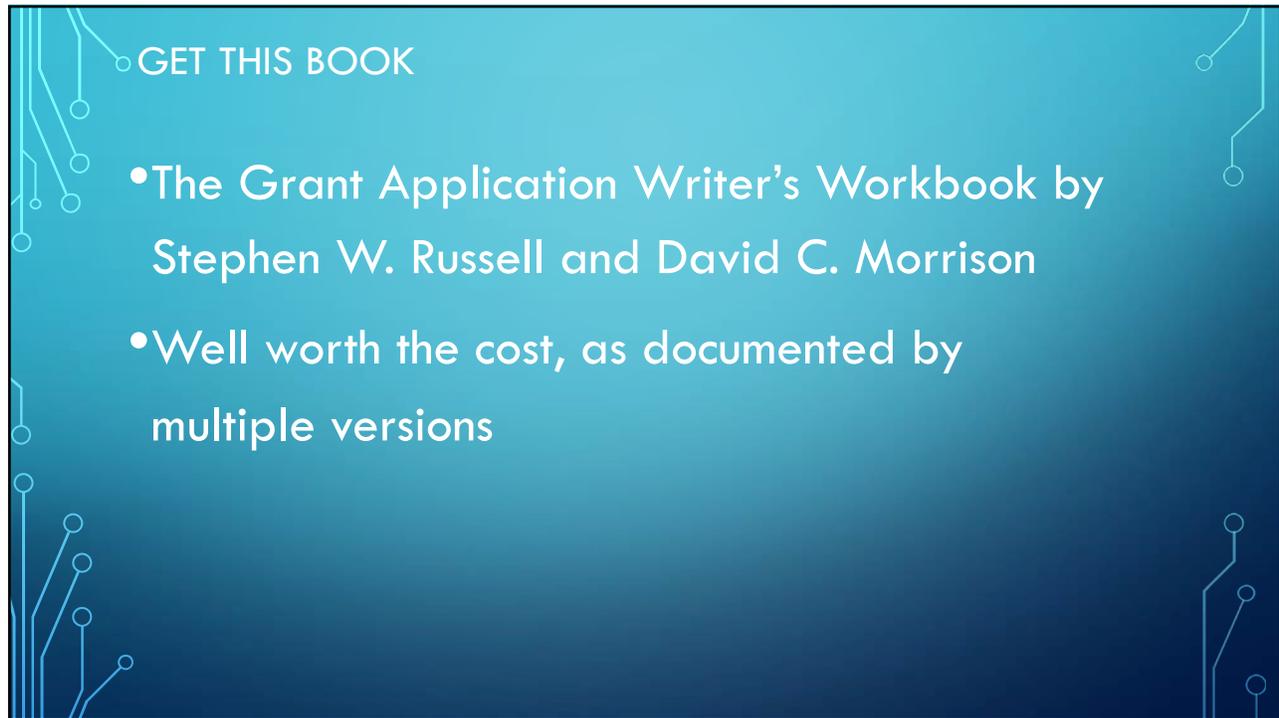
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The slide has a teal-to-blue gradient background with white circuit board patterns in the corners. The text is centered and includes:

WORDS FROM THE WISE

- Pick a topic that you like as you will spend more time on the project than you think.
- If you don't want to resubmit, reconsider if research is a good fit.

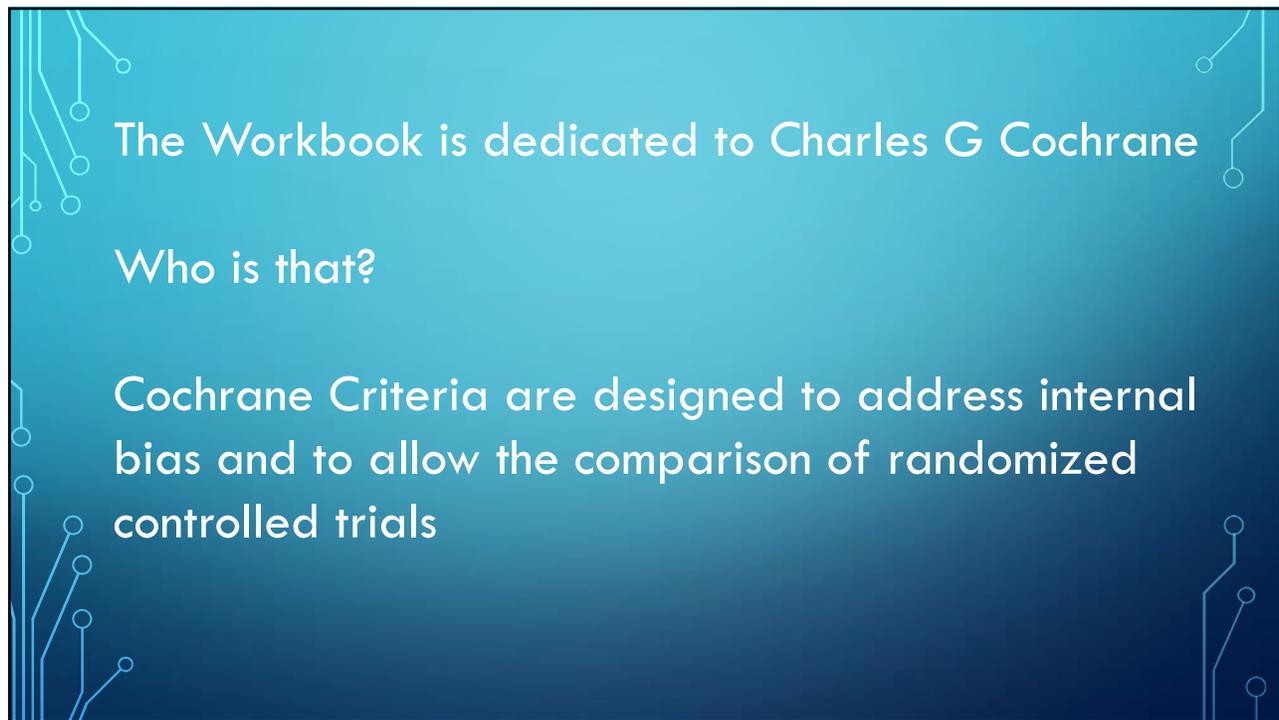
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○ GET THIS BOOK

- The Grant Application Writer's Workbook by Stephen W. Russell and David C. Morrison
- Well worth the cost, as documented by multiple versions

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The Workbook is dedicated to Charles G Cochrane

Who is that?

Cochrane Criteria are designed to address internal bias and to allow the comparison of randomized controlled trials

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Cochrane Collaboration's tool for assessing risk of bias (adapted from Higgins and Altman¹³)

Bias domain	Source of bias	Support for judgment	Review authors' judgment (assess as low, unclear or high risk of bias)
Selection bias	Random sequence generation	Describe the method used to generate the allocation sequence in sufficient detail to allow an assessment of whether it should produce comparable groups	Selection bias (biased allocation to interventions) due to inadequate generation of a randomised sequence
	Allocation concealment	Describe the method used to conceal the allocation sequence in sufficient detail to determine whether intervention allocations could have been foreseen before or during enrolment	Selection bias (biased allocation to interventions) due to inadequate concealment of allocations before assignment
Performance bias	Blinding of participants and personnel*	Describe all measures used, if any, to blind trial participants and researchers from knowledge of which intervention a participant received. Provide any information relating to whether the intended blinding was effective	Performance bias due to knowledge of the allocated interventions by participants and personnel during the study
Detection bias	Blinding of outcome assessment*	Describe all measures used, if any, to blind outcome assessment from knowledge of which intervention a participant received. Provide any information relating to whether the intended blinding was effective	Detection bias due to knowledge of the allocated interventions by outcome assessment
Attrition bias	Incomplete outcome data*	Describe the completeness of outcome data for each main outcome, including attrition and exclusions from the analysis. State whether attrition and exclusions were reported, the numbers in each intervention group (compared with total randomised participants), reasons for attrition or exclusions where reported, and any reinclusions in analyses for the review	Attrition bias due to amount, nature, or handling of incomplete outcome data
Reporting bias	Selective reporting	State how selective outcome reporting was examined and what was found	Reporting bias due to selective outcome reporting
Other bias	Anything else, ideally prespecified	State any important concerns about bias not covered in the other domains in the tool	Bias due to problems not covered elsewhere

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- Irresistible Idea for Your Grant Application –
- An idea that will make a significant, vertical difference in your field once it is acted upon.
- Find a Nitch Area That You Want to Systematically Develop

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LONG-TERM GOAL MORE THAN CAN BE DEVELOPED IN A SINGLE GRANT

- ONCE YOU HAVE IDENTIFIED THE IDEA YOU WANT TO PURSUE CHECK THE FOLLOWING
- CAN YOU DO IT (STICKS AND RUBBER BANDS)
- COMPETITION YOU WILL ENCOUNTER, RESEARCH ALREADY DONE, AVOID WRITING SOMETHING SIMILAR TO SOMETHING ALREADY FUNDED.
- CONSTRUCTIVE CRITICISM FROM KNOWLEDGEABLE COLLEAGUES

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SUMMARY PAGE

1. Principal knows on which the work would build (Background)
2. Gap in the knowledge to be filled
3. Central Hypothesis to be tested
4. Rationale or underlying reason why the work needs to be done
5. What could be expected from the work
6. Why the expected outcomes are potentially important in vertically advancing the field

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READ THE INSTRUCTIONS

ALL OF THEM
EVEN THE ANNOUNCEMENTS THAT YOU ARE
REFERRED TO

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NIH MISSION GOALS

- to foster fundamental creative discoveries, innovative research strategies, and their applications as a basis for ultimately protecting and improving health;
- to develop, maintain, and renew scientific human and physical resources that will ensure the Nation's capability to prevent disease;
- to expand the knowledge base in medical and associated sciences in order to enhance the Nation's economic well-being and ensure a continued high return on the public investment in research; and
- to exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science.

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WHO MAKES THE DECISIONS

- Review panels don't fund grant applications. Review panels recommend funding. Program officials make the funding decisions.
- Ask the Program officer if your proposal is something they would be interested in funding
- Each NIH program has its own set of funding priorities

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KISS

- Keep
- It
- Simple
- Stupid



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5 CORE REVIEW CRITERIA PLUS OVERALL IMPACT

- Significance
- Investigators
- Innovation
- Approach
- Environment

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SIGNIFICANCE

- If the specific aims are achieved, what would the project contribute to this field and how significant/important is this contribution
- Significance assumes success of the specific aims
- Is the proposed project based on sound scientific knowledge or concepts

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INNOVATION

- Does the application challenge or seek to shift current research or clinical practice paradigms?
- Are novel concepts/approaches/methods/instrumentation/interventions employed?
- Don't feel obligated to look for reasons why an application is innovative if you don't think it is. Innovation need not be a driver of impact. High innovation is often related to high significance, but there is important work that will impact the field that is not innovative by nature. You can assign a weak innovation criterion score and still assign a strong Overall Impact score.

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APPROACH

- Are the strategy, methods, and analyses well-reasoned and appropriate to accomplish the aims?
- A power analysis is important so you know how many subjects need to be recruited and where the aims are appropriate for the budget.

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INVESTIGATORS

- Does the investigative team have the collective expertise to lead the project, do the work and interpret the results.
- There will be a statistician on the review committee, collection and analysis of data needs to be addressed.
- Once someone is on your team, their preliminary data is the teams data, if they agree

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ENVIRONMENT

- Are the resources, facilities and equipment appropriate for the needs of the proposed project
- The environment should support the ability to recruit enough subject to meet the goals

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OVERALL IMPACT

- What is the likelihood of the research to exert a sustained, powerful influence on the research field
- Likelihood (i.e., probability) is primarily derived from the investigator(s) approach and environment
- Sustained powerful influence is primarily derived from the significance and innovation criteria
- Most important and comes first, but is based on the other criterion factors
- Overall impact is not an average of the criterion scores

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SPECIFIC AIMS

- People have an attention span of one page
- If people other than your three reviewer's read your grant, they will probably look at the Specific Aims
- It needs to provide an overview of the study design, significance, innovation, Aims and Hypotheses
- The Aims are what you do
- The Hypothesis are what you test using the data you collected in the Aims
- It is helpful if the Aims are tied to the Hypotheses
- You need to be able to accomplish the Aims
- Not all Hypotheses turn out the way you predict

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REVIEW AND SCORING

- Getting the grant to the right review section is important, because if the review section does not understand or care about your topic, you will not get a good score if you are scored at all.
- There are three reviewers who will read and score your grant.
- The grants with the highest scores do not get discussed, about 1/3
- The grants that are discussed are presented by the three reviewers who state their scores again after the discussion. If other reviewers vote outside the range of the three assigned reviewers it is noted
- The lower the score the better. There will be a funding line score, grants under that line can be funded, but not always.
- Scores that are close can be revised and resubmitted
- Resubmission have an introduction page where responses to the critiques are given. Respond to these carefully and completely. Reviewer like to see that previous critiques were taken seriously, as they are trying to help you.
- You want the reviewers to be happy and understand your grant, if you make it hard for them, they will not give you what you want
- The research design that does not fit in the 12 pages does not get to go in the Protection of Human Subjects section

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SCORING

- Scores of 1-3 should be supported by clearly articulated strengths.
- Scores of 4-6 may have a balance of strengths and weaknesses.
- Scores of 7-9 should be supported by clearly articulated weaknesses (or lack of strengths).

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CHURCHILL: FORGIVE ME FOR WRITING SUCH A LONG LETTER, I DID NOT HAVE TIME TO WRITE A SHORT ONE

- Well written grants are easy to read
- There is space between sections
- Concise well written

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RESUBMISSION AND THE INTRODUCTION

- Remember if you can't stand to reapply reconsider your choice to do research
- So your grant was scored, it was a reasonable score but not good enough to get funded the first time.
- Grants are rarely funded the first time
- You need to address the critiques in the one page introduction
- Address all of the critiques, if you don't agree say why
- Then resubmit

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ADDITIONAL COMPONENTS

- Protection of Human Subjects
- Women, children and minorities
- Letters of collaboration
- Biosketch
- Budget
- Specific packet for each grant that has information in it and to which pdfs of the various sections are attached
- The grant belongs to the Grant Administrator that provides certain guarantees
- This is not your grant, you are the Principal Investigator, or Co-Investigator

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IT IS WORTH IT

- You forget how hard it was to submit by the time of the next submission

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