

# TRANSFORMING CURIOSITY INTO INQUIRY



## Writing a Successful Shapiro Proposal

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# Today's Goals:

1. Understand requirements for Shapiro applications
2. Know what reviewers look for and avoid pitfalls
3. Get application tips and know next steps
4. Allow enough time for one-on-one questions at the end
  - a) How many have confirmed projects?
  - b) How many are still looking?



# Timeline and Next Steps

## December-January

- ✓ Review Research Project lists and contact potential mentors
- ✓ Attend a session on Shapiro proposal writing

## February

- ✓ Have mentor and project confirmed by early February
- ✓ Write a draft of Shapiro proposal
- ✓ Attend Atrium Drop In Hours with any questions
- ✓ Mentor approves final proposal
- ✓ **Submit application by February 20**

## March

- ✓ Applications are reviewed by the Student Research Committee

## April

- ✓ Notifications are sent out

## May-August

- ✓ Mandatory orientation
- ✓ Shapiro Summer Research Program

## September

- ✓ Submit an abstract to participate in the Medical Student Research Forum

## November 23rd, 2020

- ✓ Medical Student Research Forum!

# Key Elements Of Shapiro Application

Create an account at [medwisc.Fluidreview.com](https://medwisc.Fluidreview.com)

## Tasks

**Step 1.** Complete Application Facesheet

**Step 2.** Upload your résumé or CV

**Step 3.** Upload research proposal (A-F)

**Step 4.** Send request to complete mentor statement of support for applicant

**Step 5.** Upload faculty mentor CV or NIH biosketch

**Step 6.** Upload IRB documents if you have them (IRB approvals needed by the time you start work)

[HTTPS://MEDWISC.FLUIDREVIEW.COM/](https://medwisc.fluidreview.com/)

# Shapiro Proposal Rating Rubric

Applicant:

Reviewer:

	<b>Beginning 1-2</b>	<b>Developing 3-4</b>	<b>Accomplished 5-6</b>	<b>Exemplary 7-8</b>	<b>Points</b>
<b>Background and Significance</b>	Rationale for research is weak or not stated. Study is not contextualized within field of literature.	Describes rationale for research but fails to establish significance. Connections to the literature are present but unclear or debatable.	Describes clear rationale and significance of specific research issue. Study is contextualized within field of literature.	Describes a specific and significant issue with high potential for scholarly impact. Study is contextualized within field of literature and proposes a unique approach.	
<b>Hypothesis or Research Question</b>	Statement made, but is neither a hypothesis nor a research question.	A hypothesis or research question statement is made, but is either not clear or doesn't follow logically from background information.	Hypothesis or research question is clear, reasonable, and succinct and follows logically from the background information.	Hypothesis or research question is clear, reasonable, and succinct and follows logically from the background information. Elaborates on purpose and specific aims.	
<b>Research Design</b>	Design is inappropriate for research question or has not been described in sufficient detail to evaluate.	Design is described in overly simplistic terms or appears to be under development.	Design is identified and described in sufficiently detailed terms. Potential challenges not identified.	Design is identified and described in very detailed terms. Potential challenges have been identified and solutions considered.	
<b>Methods, Data Collection and Analysis</b>	Research question does not match methods. Description of methods missing or inadequate to evaluate proposal.	Research question somewhat aligns with methods. Descriptions of relevant study population, data collection protocols, analytical methods are confusing or incomplete, with unstated timeline.	Research question aligns well with methods. Descriptions of relevant study population, data collection protocols, analytical methods are mostly complete. Project can realistically be completed in allotted time.	Research question aligns well with methods. Descriptions of relevant study population, data collection protocols, analytical methods are complete with high likelihood of generating valid and reliable data. Project can realistically be completed in allotted time.	

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<b>Student Role and Motivation</b>	Student role and responsibilities minimally described, indicate low quality of involvement in research, or do not match skill level of student. Statement of motivation missing or cursory.	Student role and responsibilities adequately described and indicate moderate quality of student involvement. Student may or may not have skills to execute project. Motivation is primarily exposure to field rather than research.	Student role and responsibilities clearly described with high quality of student involvement. Student has or will acquire skills to execute project. Motivation includes both exposure and advancement of research skills.	Student role and responsibilities well described. Active level of involvement which challenges student beyond previous research experience. Student has or will acquire skills to execute project. Motivation indicates high level of interest linked to future scholarly ambitions.	
<b>Student Learning Objectives</b>	Objectives are missing, or neither specific nor measurable. Activities and Products provide limited educational value.	Objectives are adequately articulated but broadly stated and may be obvious. Activities and products reflect average educational value.	Objectives are specific, measurable, and highly relevant to proposed research. Activities and Products are well described to meet objectives and reflect solid educational value.	Objectives are specific, measurable, and highly relevant to proposed research. Activities and Products are well described to meet objectives and reflect excellent educational value.	
<b>Mentoring Plan; Mentor LOS</b>	Minimal or vaguely described mentoring plan; cursory mentor letter of support.	Adequately described plan limited to regular meetings with mentor; acceptable mentor letter of support.	Well described plan includes regular meetings with mentor and other mentoring and enrichment activities. Acceptable mentor commitment expressed in letter of support.	Exceptional plan with activities that include regular meetings with mentor and other mentoring and enrichment activities. Strong mentor commitment expressed in letter of support.	

## Recommendation (place X in circle):

- Acceptable for funding as proposed
- Revisions or clarifications with re-review

## Reviewer comments on recommendation (optional if acceptable for funding):

Step 3. Upload Your Research Proposal (Proposal Format is Included Here)

INCOMPLETE

**Start**

Here upload a pdf file of your Research Proposal. The proposal must be written using the outline and headings below to be considered for funding. The limit for sections A-F is 3 pages, single spaced, 11 point font, one inch margins. Check your document to ensure that it aligns with this format! Write your proposal in the first person when referring to your role and responsibilities (e.g. "I will" rather than "the student will").

USE THE FORMAT AND HEADINGS BELOW!

**A. Project Title**

**Student Name**

**Mentor(s) Name and Title**

**Institution and Department**

**B. Research Plan**

The Research Plan narrative should be written in the applicant's (student's) words in sufficient detail for a reviewer to understand the project.

**1. Background and Significance (not longer than 1/2 page)**

Describe a clear rationale for your research and establish its significance. Contextualize the study within the field of literature. **Literature citations** may be included in parentheses within the text, at the end of the research plan in reduced text size, or on a separate page which does not count in the 3 page limit.



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### 2. Hypothesis or Research Question

State the research hypothesis or question clearly and succinctly. Elaborate with specific aims of the study if appropriate.

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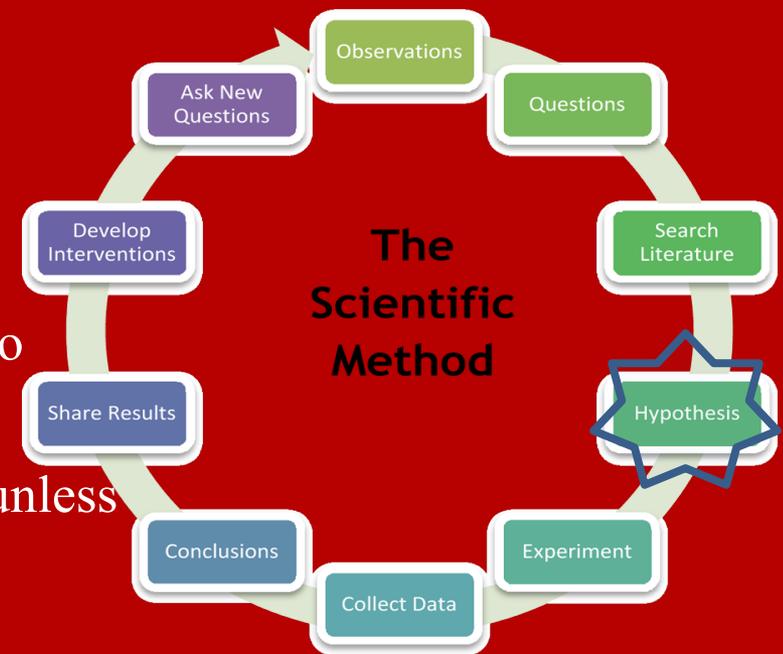


# Anatomy of a Hypothesis

A hypothesis is a specific and testable statement of prediction. It describes in concrete (rather than theoretical) terms what you expect will happen in your study.

A solid hypothesis:

- Is built upon sound scientific rationale
- Well-focused
- Testable and falsifiable
- Variables in the study must lend themselves to observation, measurement, and analysis
- States the directionality of expected results (unless exploratory research)
  - Does not have to be correct





# PICO(T) Model

**P = Population** (the sample of subjects you wish to recruit for your study)

**I = Intervention** (exposure or the treatment that will be provided to participants in your study)

**C = Comparison** (the reference group, which could be a control group or a gold standard treatment)

**O = Outcome** (disease incidence/prevalence, severity)

**T = Time** (the time it takes to see the outcome)

= *Type of Question*

= *Type of Study*

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### 2. Hypothesis or Research Question

State the research hypothesis or question clearly and succinctly. Elaborate with specific aims of the study if appropriate.

### 3. Research Design and Methods (1 page)

This is the most important section and must be specific! Outline the research design and the methods to be used in sufficient detail for a reviewer to understand. Include descriptions and details of the relevant study population, data collection protocols, data analysis methods, and an anticipated sequence and weekly timeline for the project.



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## C. Student Role, Responsibilities, and Motivation

Clearly outline your responsibilities on the project.

Also indicate any specialized lab techniques, data collection and analysis skills needed to conduct your research. If you will need training to conduct your project, indicate the plan to acquire such training. Note if you will work independently or with others as part of a research team.

If you have worked on your project previously, note this, and state how your work next summer will advance your research knowledge and skill level.

Provide a brief personal statement of why you want to undertake this project: what interests you, motivates you, and how this experience will enhance your education and professional development.

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## D. Learning Objectives, Activities, and Products

Develop 3 or 4 Learning Objectives for your experience that you have discussed with your mentor. For each objective, list what Activities you will undertake to achieve the objective, and Products that will provide evidence of your learning. These must be included for your application to be considered. Remember that learning objectives should be specific, measurable, and highly relevant to your proposed work.

### GOALS

A statement that describes in **broad terms** what you will gain from instruction.

### LEARNING OBJECTIVES

**Specific and measurable statement** that describes what you will know or be able to do as a result of engaging in a learning activity.

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**Learning objective:** learn techniques of bench lab research necessary to conduct my project.

**Activities:** I will receive training in and perform microdissection and DNA extraction. Training will be obtained through online tutorials and practice sessions with lab postdoc during the first week.

**Products:** 1. Competency performing techniques. 2. Data from these techniques that will be analyzed.

## E. Mentoring Plan

Discuss project and productivity expectations with your mentor and make sure that your expectations align with your mentor's. State your agreed-upon plan for regular meetings with your mentor and any others who will supervise your work. To whom will you go when there are problems to be resolved? If your day to day activities will be supervised by a post doc or other research staff, include the name of that person and indicate if you have met or will meet to discuss the project, your role, expectations, and communication. An exceptional plan will include other educational activities in which you might participate (journal clubs, lab meetings, trainings, shadowing, etc.)

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## F. Approvals

Here briefly state the status of institutional review board approvals or exemptions (human subjects, animal use, biohazardous materials, etc) for the project, or indicate if they are not needed. If approvals have not yet been obtained, indicate the plan and timeline for doing so prior to the start of the project.

Copies of human subjects, animal or biohazardous material approvals related to the project will be uploaded as another task in this application.

Be aware that all necessary approvals for the project must be obtained prior to your work start date.

Step 4. Request to Complete Mentor Statement of Support for Shapiro Applicant

INCOMPLETE

Start

Please use this feature to send an email request to your primary mentor to complete a statement of support for your application. The completed form will automatically become part of your application. The email request will provide further instructions for mentors. The statement of support replaces the written letter of support used in previous years. Please inform your mentor of this change.

Send the "request" at least two weeks prior to the deadline to allow your mentor enough time to complete this task!

**You will not be able to see your mentor's submitted statement of support in your application, but you will be copied on an email confirmation at the time it is submitted by your mentor. If you don't receive this by the application deadline, please remind your mentor to complete this task. It may be helpful to resend the request to your mentor via your application.**

Note that your mentor will be able to view your research proposal when they complete their statement of support only if you have uploaded it to the application site.

Step 5a. Upload Mentor CV or NIH Biosketch (preferred)

INCOMPLETE

Start

Upload a pdf file of your primary mentor's CV or biosketch here. A biosketch is preferred.

Step 6. Upload Project-related Approval Documentation

INCOMPLETE

Start

Upload any regular approval documentation (such as IRB human subjects, animal, or biohazard approvals) related to your project, provided by your mentor. Include documentation of exemptions if applicable. This is not required prior to submission if approvals are pending.

## **SUBMIT APPLICATION**

Can be edited until the deadline even if you have already submitted.  
Changes will be saved.

# Top Ten Pitfalls

1. Needs IRB approval
2. Hypothesis not stated
3. Research plan not detailed
4. If your mentor has two students: your projects are not distinct
5. Weak rationale for study
6. Challenges not stated and addressed
7. Statistical analysis not specific
8. Scope too large for time available
9. Lack of detail or vague proposal
10. Mentoring plan is vague

# Application Tips

- You are the author. Write in the first person.
- Don't copy and paste from mentor's grant.
- Write clearly and in sufficient detail.
- Give your mentor plenty of time to review draft.
- Inform mentor of request for statement of support.
- Have a friend critique proposal using the rating rubric.
- Edit, edit, edit. Spell check! Grammar check!
  - First impressions matter!

# Questions?

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