
FOUNDATION FOR PHYSIOLOGY AND EXERCISE SCIENCES

School of Biological Sciences
University of California, Irvine



Exercise is Medicine. Request for Applications (RFA)

Goal: Investigate the relationship between physical activity and human health

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Proposal number: E117C - 05562

Date: Spring 2019

EXECUTIVE SUMMARY

The Foundation for Physiology and Exercise Sciences has unlimited access to facilities and resources, and if funded, you will be guaranteed funding to complete your research. The Foundation will fund projects that align with the following research goals

- Measure the effects of physical activity/exercise in populations that are understudied (based on gender, age or ethnicity);
- Identify barriers and facilitators for achieving national physical activity guidelines across population groups;
- Identify genes and gene expression patterns that influence responses to physical activity;
- Conduct basic and clinical research related to the detection, diagnosis, treatment, and prevention of metabolic syndrome, pre-diabetes, and diabetes;
- Develop interventions to prevent diseases and injuries of the musculoskeletal system and its component tissues;
- Develop post-injury rehabilitation strategies that may include physical therapy, pharmaceutical, or engineering approaches.

Your research proposal will be reviewed by researchers who have a general background in biology, but not necessarily exercise sciences, according to specific criteria.

Researcher Training

Training sessions will be on Mondays, 9:00 - 11:50am in 237 Steinhaus Hall (but a few sessions will meet elsewhere).

You will be expected to submit your proposal in both written form, and as an oral presentation. In preparation, you will go through an 8-week training program. By the end of your training, you will be able to

- Describe the steps that researchers go through in order to submit a proposal
 - Identify ethical practices for human and animal research
 - Formulate a research justification for a general audience
 - Integrate preliminary data into a proposal
 - Appreciate that you've learned a lot of useful skills over the last 4 years!
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PROPOSAL PREPARATION SCHEDULE

This schedule is subject to change depending on the needs of the researchers and the availability of equipment and support staff.

Date	Topic	Due before class	Activity during Class
April 1	Human research: the good, the bad and the unethical		1) Case study on ethics in human research 2) Form research teams and brainstorm
April 8	Introduction to Motion Capture (meet at the Contemporary Arts Center)	1) Assigned reading on Canvas 2) Human Research Protection Certification	Dr. Kelli Sharp will lead a discussion of biomechanics research in humans and demonstrate tools for analyzing motion.
April 15	Research proposal writing 1. Grab the attention of your reviewer	1) Assigned reading on Canvas. 2) Project outline 3) 1st draft of rationale	1) Peer review. Bring a laptop if you can. 2) Brainstorm methods
April 22	Research proposal writing 2. How are you going to change the world?	1) Assigned reading on Canvas 2) Revised rationale	1) Outline of methods 2) Plan preliminary data collection
April 29	Preliminary data collection at the ARC	Data collection plan	Collect data
May 6	Research proposal writing 3: Who are you and why are you qualified to do the work?	1) Assigned reading on Canvas 2) Your current resume	Create a group resume
May 13	Tentative: return to motion capture studio	Draft of personnel section	Collect data
May 20	TBA. Depending on the needs of the researchers		
May 27	Holiday	By Monday night, complete peer reviews of each others proposals on Canvas.	
June 3	Symposium: Proposal presentations & Breakfast	Current 3rd years and faculty affiliated with the Exercise Sciences Initiative will be invited.	

PROPOSAL REQUIREMENTS

The proposal should meet the following requirements. A detailed rubric will be posted on Canvas

1) Title

- clearly indicates the topic

2) Rationale

- Overall relevance and significance of the study
- A specific problem to be solved
- A review of the current state of knowledge
- Clearly stated, testable hypotheses

3) Methodology

- a clear explanation of the proposed experiments
- justification for a specific subject population

4) Preliminary Data & Predicted Results

- Preliminary data
- Predicted results of other proposed experiments

5) Interpretations and Discussion

- Discuss alternative possible results and their interpretations.
- Discuss the limitations of the proposed experimental strategy
- Briefly summarize and reflect on the impact of the proposed research on scientific knowledge

6) Holistic criteria

- Aligns with the Foundation's goals
- Logical relationship between question(s), experimental design, predicted results and interpretations / concerns
- Clear, concise, to the point. No long-winded, awkward or convoluted sentences
- The overall goals of the project are consistent with those of the Foundation
- An ecology major can understand it without using Google

7) References

- Minimum 6 references
 - The majority of the references (~90%) are peer-reviewed research articles (not review articles or webpages)
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