SCIENCE FOR THE BENEFIT OF HUMANITY

Communicating Impact:

Public health impact statements for CCTS Pilot Award applications

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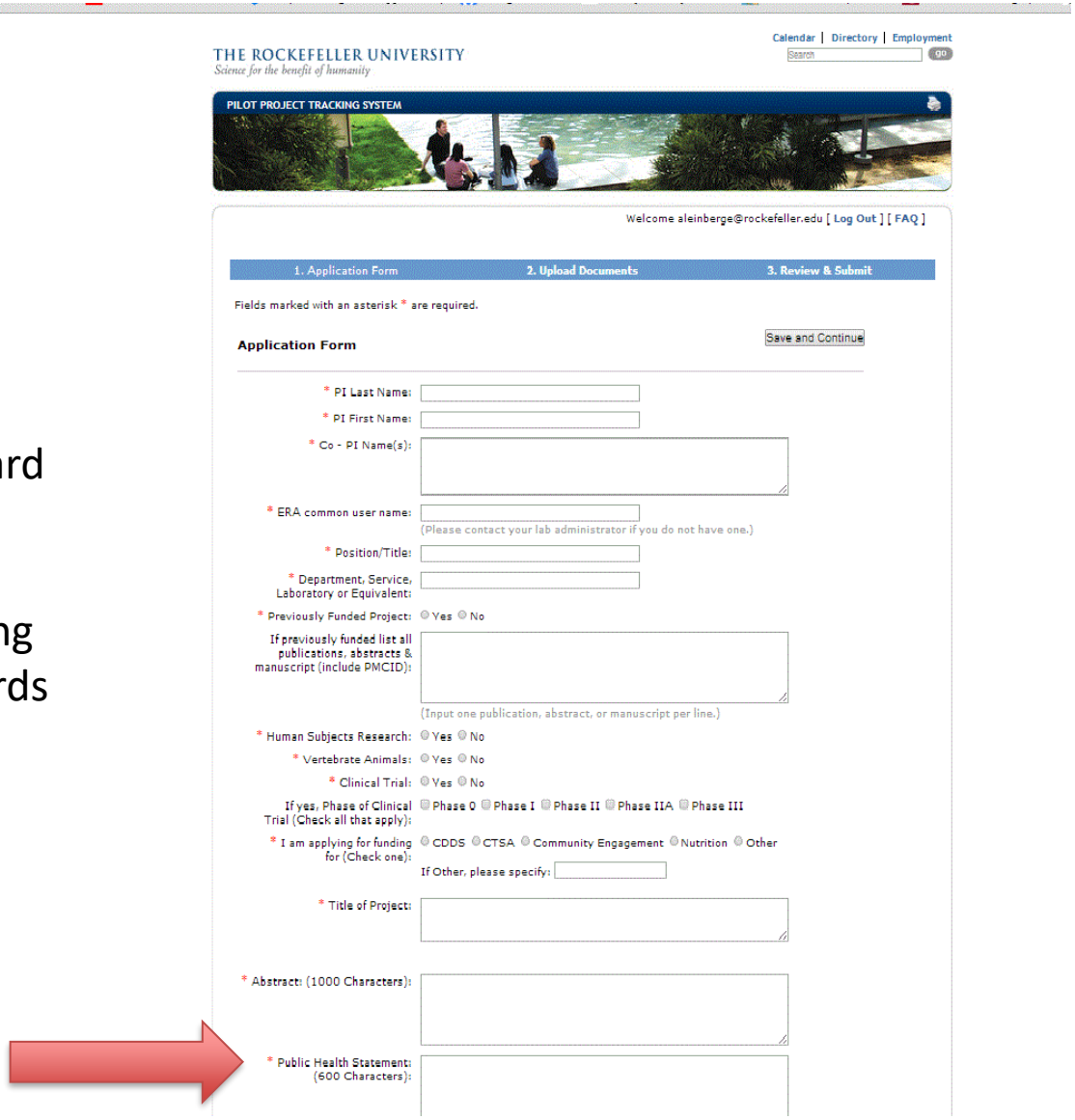
Learning Objectives

- To be able to:
  - Articulate the components of a Public Health Impact (PHI) Statement
  - Recognize when a PHI is required
  - Craft a clear, non-technical PHI statement

What is a Public Health Impact Statement?

A concise, lay language description that in a few sentences specifically describes the potential value and impact of your research.

- **REQUIRED** part of Pilot Award application
- Max 400 *characters* (including spaces); roughly 50 – 60 words or about 3 sentences



Why do I need a PHI statement?

- It provides a concise summary (in tandem with your abstract) of your proposed work and its context in translational science
- Funders often require a PHI statement (NIH, PCORI)
  - SR424 R&R PHS 398
- Funders use the PHI for accountability (NIH may use PHI to justify budgets to Congress)

Components of PHI Statement

Why is the research important? (What's the problem?)

What will you do? (What's novel or innovative)

How will it impact human health?

Typical Abstract

TITLE: THE ROLE OF ABNORMAL G-PROTEIN SIGNALING IN HEART DISEASE

DESCRIPTION: Congestive heart failure is a common and lethal disease in the U.S. Current medications for treating heart disease improve survival in some, but not all, patients. Therefore, additional medications are needed to treat individuals who do not respond to current medications. Research using animal models suggests that abnormal G-protein signaling may be a biochemical mechanism that may be one of the factors that cause heart disease. However, it is unknown how altered G-protein activity would cause this disorder. It has been shown that G-proteins can regulate the activities of several protein kinases. It is also thought that protein kinase activity in turn modulates sympathetic nervous system function. As a first step to determine whether this sequence of events could lead to heart disease, this project will use pharmacological and molecular genetic approaches to establish whether a G-protein-regulated protein kinase can modulate cardiac physiology in vivo and cardiac cell activity in vitro. Possible protein kinases to be tested that are regulated by G-proteins include G-protein coupled receptor kinase 2 (GRK2), PI3K, and ERK1/2. This research will enhance our understanding of the cellular and molecular mechanisms underlying sympathetic neuron dysfunction that may progress to heart disease, and may identify a possible novel pharmaceutical target for future experiments to develop therapeutic compounds to treat this disease.

Example courtesy of NIH Office of Extramural Research (http://grants.nih.gov/grants/plain_language_examples.htm#e2)

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Typical Abstract

TITLE: THE ROLE OF ABNORMAL G-PROTEIN SIGNALING IN HEART DISEASE

DESCRIPTION: **Congestive heart failure is a common and lethal disease in the U.S. Current medications for treating heart disease improve survival in some, but not all, patients. Therefore, additional medications are needed to treat individuals who do not respond to current medications.** Research using animal models suggests that abnormal G-protein signaling may be a biochemical mechanism that may be one of the factors that cause heart disease. However, it is unknown how altered G-protein activity would cause this disorder. It has been shown that G-proteins can regulate the activities of several protein kinases. It is also thought that protein kinase activity in turn modulates sympathetic nervous system function. **As a first step to determine whether this sequence of events could lead to heart disease, this project will use pharmacological and molecular genetic approaches to establish whether a G-protein-regulated protein kinase can modulate cardiac physiology in vivo and cardiac cell activity in vitro.** Possible protein kinases to be tested that are regulated by G-proteins include G-protein coupled receptor kinase 2 (GRK2), PI3K, and ERK1/2. **This research will enhance our understanding of the cellular and molecular mechanisms underlying sympathetic neuron dysfunction that may progress to heart disease and may identify a possible novel pharmaceutical target for future experiments to develop therapeutic compounds to treat this disease.**

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Simplify:

Why is the research important? (What's the problem?)

Congestive heart failure is a common and lethal disease for which new approaches to therapy are needed, as currently approved medications help many but not all patients.

What will you do? (What's novel or innovative?)

This project will use pharmacological and genetic approaches to understand whether a protein signaling pathway that is important in animal models of heart failure is also important in human physiology.

How will it impact human health?

This research has the potential to provide important information on a new approach to developing new treatments for congestive heart failure.

Example courtesy of NIH Office of Extramural Research (http://grants.nih.gov/grants/plain_language_examples.htm#e2)

More Examples

Title: Role of IgG Fc Glycan composition in vaccination

PHI Statement:
In order to produce better more effective vaccines, it is important to understand the particulars of why individuals have an effective or ineffective immune response to vaccination. (*Why*)

We will examine specific characteristics of the antibody (IgG Fc glycan) made by healthy volunteers who receive the flu vaccine to understand the nature of an effective (or less effective) vaccine response. (*What*)

The results of this research could be used to improve vaccine effectiveness. (*How*)

491 characters (80 words)

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More Examples

Title: Improvement of HIV therapy by a combination of anti-retroviral medication and broad neutralizing antibodies in humanized mice

PHI Statement:

HIV anti-retroviral treatment (ART) is effective in preventing disease progression, but the burden of daily medication, side effects, high costs, drug resistance, and the fact that less than half of HIV-1-infected individuals have access to these drugs, underscores the need for new treatment approaches. (*Why*)

We aim to use broadly neutralizing antibodies, isolated from HIV-infected individuals who effectively control their virus, to supplement current ART and further suppress HIV. (*What*)

The results of our research could expand options for treatment of HIV. (*How*)

534 characters

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Your Turn….

Using the worksheet provided, answer the questions about your proposed research. Then craft a 3 sentence statement about your project.

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FOR MORE INFORMATION

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