BUILD PODER PILOT PROJECTS

FOLLOWING YOUR BLISS...
WITH FUNDING

BUILD PODER Pilot Project Workshop
FUNDING SOURCES

Public

- NIH, NSF, DOE, DOJ, state, local
- Usually more $ 
- More space to write about project 
- Can be basic or applied projects 
- Greater freedom
- Greater indirect costs (~45% for federal)
- Annual progress report

Private

- CA Wellness, CA Endowment, RWJF 
- Usually more tied to applied research or projects
- Concise, related to mission
- Sometimes directive
- Smaller or no indirect costs (often 8%)
- Often quarterly progress report
LEARNING ABOUT THE NIH

Overview of NIH and grants process (YouTube videos, sample grants, pragmatics)
https://grants.nih.gov/grants/about_grants.htm

Podcasts

Tips for new applicants
NIH 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.
NIH 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;
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• to exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science.
NIH RESEARCH DOMAINS

• The NIH provides leadership and direction to programs designed to improve health by conducting and supporting research:
  
• in the causes, diagnosis, prevention, and cure of human diseases;
• in the processes of human growth and development;
• in the biological effects of environmental contaminants;
• in the understanding of mental, addictive and physical disorders;
• in directing programs for the collection, dissemination, and exchange of information in medicine and health, including the development and support of medical libraries and the training of medical librarians and other health information specialists.
NIH MECHANISMS

• R Series Research Grants (R21, R15, R01)
• K Series Career Development Awards
• T/F Series Research Training/Fellowships
• P Series Program Project/Center Grants
• Resource Grants
• Early Stage Investigators – 10 years since terminal degree
• New Investigator – not having a large research grant
TYPES OF RESEARCH/CAREER GRANTS AT NIH

- R01 Research Project Grant Program $unlimited/5 years
- R03 Small Grant $50,000/PER 2 years
- R15 Academic Enhancement $300,000 (total)/3 yrs
- R21 Exploratory/Developmental $275,000 (total)/2yrs
- R34 NIH Clinical Trial Planning Grant
DEFINITION OF A CLINICAL TRIAL

• An "intervention" is defined as a manipulation of the subject or subject’s environment for the purpose of modifying one or more health-related biomedical or behavioral processes and/or endpoints. Examples include: drugs/small molecules/compounds; biologics; devices; procedures (e.g., surgical techniques); delivery systems (e.g., telemedicine, face-to-face interviews); strategies to change health-related behavior (e.g., diet, cognitive therapy, exercise, development of new habits); treatment strategies; prevention strategies; and, diagnostic strategies. (which may include placebo or other control) to evaluate the effects of those interventions on health-related biomedical or behavioral outcomes.

• R34 is a mechanism for clinical trials
NIH INSTITUTES AND CENTERS

BUILD PODER Pilot Project Workshop
https://projectreporter.nih.gov/reporter.cfm

“mental health” and “Hispanic”

Funding mechanism: Non-SBIR/STTR research project grants + Other Research-related

Agencies: NIMH, NICHD, NIMHD

https://projectreporter.nih.gov/reporter_searchresults.cfm

Circle map

BUILD PODER Pilot Project Workshop
SUCCESS RATES FOR NIH GRANTS

- Overall
  - [Link](https://report.nih.gov/success_rates/Success_ByIC.cfm)

- By Institute and mechanism
  - [Link](https://report.nih.gov/success_rates/Success_ByIC.cfm)
## Success Rates for NIMH, NICHD, NIMHD

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Award Type</th>
<th>NIH Institute</th>
<th>Activity Code</th>
<th># Reviewed</th>
<th># Awarded</th>
<th>% Success</th>
<th>Award Amount</th>
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<tbody>
<tr>
<td>2016 New</td>
<td>NIMH</td>
<td>R01</td>
<td>1332</td>
<td>290</td>
<td>(21.77%)</td>
<td>$166,636,424</td>
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<tr>
<td>2016 New</td>
<td>NIMH</td>
<td>R03</td>
<td>117</td>
<td>29</td>
<td>(24.79%)</td>
<td>$2,572,611</td>
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<tr>
<td>2016 New</td>
<td>NIMH</td>
<td>R15</td>
<td>46</td>
<td>8</td>
<td>(17.39%)</td>
<td>$2,848,695</td>
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<td>2016 New</td>
<td>NIMH</td>
<td>R21</td>
<td>671</td>
<td>132</td>
<td>(19.67%)</td>
<td>$30,675,026</td>
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<tr>
<td>2016 New</td>
<td>NIMH</td>
<td>R34</td>
<td>92</td>
<td>17</td>
<td>(18.48%)</td>
<td>$4,595,629</td>
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<tr>
<td>2016 New</td>
<td>NICHD</td>
<td>R01</td>
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<td>(12.59%)</td>
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<td>354</td>
<td>53</td>
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<td>R21</td>
<td>16</td>
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<td>(12.50%)</td>
<td>450,605</td>
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## FUNDING RATES

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<tr>
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</table>
EARLY STAGE INVESTIGATOR

• A Program Director/Principal Investigator (PD/PI) who has completed their terminal research degree or end of post-graduate clinical training, whichever date is later, within the past 10 years and who has not previously competed successfully as PD/PI for a substantial NIH independent research award.

• ESI applications with meritorious scores will be prioritized for funding; they are increasing in the number of awards strategically

• A list of NIH grants that a PD/PI can hold and still be considered an ESI can be found [here](#).
EVALUATION CRITERIA

• **Significance.** Does the project address an important **problem or a critical barrier** to progress in the field? If the aims of the project are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?

• **Investigator(s).** Are the PD/PIs, collaborators, and other researchers well suited to the project? If Early Stage Investigators or New Investigators, or in the early stages of independent careers, do they have appropriate **experience** and training? If established, have they demonstrated an ongoing record of accomplishments that have advanced their field(s)? If the project is collaborative or multi-PD/PI, do the investigators **have complementary and integrated expertise;** are their leadership approach, governance and organizational structure **appropriate for the project?**

• **Innovation.** Does the application **challenge and seek to shift** current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions? Are the concepts, approaches or methodologies, instrumentation, or interventions novel to one field of research or novel in a broad sense? Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?

• **Approach.** Are the overall strategy, methodology, and analyses **well-reasoned and appropriate to accomplish the specific aims** of the project? Are potential problems, alternative strategies, and benchmarks for success presented? If the project is in the early stages of development, will the strategy establish **feasibility** and will particularly risky aspects be managed? If the project involves clinical research, are the plans for 1) protection of **human subjects** from research risks, and 2) inclusion of minorities and members of both sexes/genders, as well as the inclusion of children, justified in terms of the scientific goals and research strategy proposed?

• **Environment.** Will the scientific environment in which the work will be done contribute to the probability of success? Are the institutional support, equipment and other physical resources available to the investigators **adequate** for the project proposed? Will the project **benefit** from unique features of the scientific environment, subject populations, or collaborative arrangements?
OVERALL IMPACT

Overall Impact. Reviewers will provide an overall impact/priority score to reflect their assessment of the likelihood for the project to exert a sustained, powerful influence on the research field(s) involved, in consideration of the five core review criteria, and additional review criteria (as applicable for the project proposed).
SIGNIFICANCE

Does the project address an important problem or a critical barrier to progress in the field? If the aims of the project are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?
INVESTIGATOR(S)

Are the PD/PIs, collaborators, and other researchers well suited to the project? If Early Stage Investigators or New Investigators, do they have appropriate experience and training? If established, have they demonstrated an ongoing record of accomplishments that have advanced their field(s)? If the project is collaborative or multi-PD/PI, do the investigators have complementary and integrated expertise; are their leadership approach, governance and organizational structure appropriate for the project?
INNOVATION

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ENVIRONMENT

• Will the scientific environment in which the work will be done contribute to the probability of success? Are the institutional support, equipment and other physical resources available to the investigators adequate for the project proposed? Will the project benefit from unique features of the scientific environment, subject populations, or collaborative arrangements?
APPROACH

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SCORING

- 1 Exceptional
- 2 Outstanding
- 3 Excellent
- 4 Very Good
- 5 Good
- 6 Satisfactory
- Below 6 – NO WAY!
- Averaged to be 10-90
CHECKLIST

- eRA Commons account (contact Research and Grants)
- Understand NIH
- Use RePORTER to Help Identify Where Your Research Fits
- Contact NIH
- Ensure Your Idea is Original
- Find a Funding Opportunity Announcement
- Determine Application Submission Date
- Plan within your Institution
- Obtain Any Prior Approvals from NIH
- Get to Know the NIH Peer Review Process & Criteria
- Consider These Additional Application Elements
- Organize Your Time to Complete the Application
EXERCISE 1: RESEARCH PROJECTS VS. A PROGRAM OF RESEARCH

• How would you describe your research topic generally?
• How does your current work follow from your previous work?
• What barriers have you encountered while conducting research at CSUN?
• Draw a schematic for your research interests now and where you would like them to grow.
Social Change

Youth Disability

Transition to Adulthood

Global Disability Rights

Education

Life Chances for LA Youth
Global Disability Rights

- Training and Education
- Mental Health
- Philippines
- African Diaspora
- Advocacy as a Human Right
GRANTS TRAJECTORY

• Start local and small $ ($5,000-$30,000)
• Pilot projects with trajectory to larger projects
• Private or on-campus
• Move to public, local → national (NSF, NEH, NIH, etc.) ($200,000-$1,000,000+)

FIRST TASK: FIND YOUR PASSION AND THEN MAKE IT FEASIBLE

FEASIBLE
WHAT’S A GOOD IDEA?

• Feasible
• Significant
• Innovative
• Interesting to you
• Interesting to others
• Meets the funder’s mission
• Aligns funder’s mission, project goals, methods, analysis, and dissemination DIRECTLY
INDUCTIVE OR DEDUCTIVE?

• Start with your interests or an RFP (request for proposals)
• Identify your interests, their subdomains and how they map onto your science or art, develop a program of research
• Identify funding sources that support this type of project – start small, increasing in $ and competitiveness
SO MANY PROJECTS
SO LITTLE TIME!

• Research, AND of course...
• Community outreach/centers -- service
• Program development, change, evaluation
• Student advancement (BUILD PODER, MARC, RISE, AIMS2, CIRM, CAMINO)
• Construction – enable development of buildings, renovation, etc.
• Conferences or meetings
WRITING TIPS

• A reviewer often reads 10 to 15 applications in great detail and forms an opinion about each of them.
• Proposal instructions require that materials be organized in a particular format.
• Reviewers are accustomed to finding information in specific sections of the application.
• Organize your application to effortlessly guide reviewers through it.
• This creates an efficient evaluation process and saves reviewers from hunting for required information.
• Use an Arial, Helvetica, Palatino Linotype, or Georgia typeface, a black font color, and a font size of **11 points** or larger. (A Symbol font may be used to insert Greek letters or special characters; the font size requirement still applies.)

• Type density, including characters and spaces, must be no more than 15 characters per inch. Type may be no more than six lines per inch. Use standard paper size (8 ½" x 11). Use at least **one-half inch margins** (top, bottom, left, and right) for all pages. No information should appear in the margins.
GRANT STRUCTURE, LENGTH, DETAILS

- Always attend to all instructions, details; write down in a place that’s readily accessible
- (# of pages, font size, # characters/inch, type and length of sections)
- R21s may be 6 or 12 pages
- Know scoring criteria, keep these accessible
- Keep running record of all references, documents
BUILDING AN ORGANIZATIONAL FRAMEWORK

• Outline grant structure
• Start with structure typed into document with direct instructions below the section
• Use their words for headings if possible (e.g., under significance, they say as for past, present, future of the phenomenon)
• Align with feasibility analysis (time, money, mission)
KEEPING RECORDS

• Keep daily records of progress in lab book
• Keep track of references, double-check
• Make notes about methodological or theoretical innovations that should be included
• Keep track of budget implications
• Keep lists of collaborators and other roles
• Keep track of timeline implications
• Checklist of forms and additional materials
• Checklist of external arrangements – equipment estimates, planning space changes, letters of support
WRITING A GRANT PROPOSAL: CREDIBILITY

- Stay close to the mission and terminology of the funder
- Data-driven – pilot data are best, build on publications
- Document (nearly) every statement
- Develop tight linkages among all sections – stay focused on your specific aims and a simple theme (“the hook”)
- Structure matters always – overall coherence with a direction, parallel structure within and across sections (“red thread”)
- Be innovative AND integrate strong evidence for the success of your innovation – statistics, theory, studies, policy, etc.
- Identify weak links in your application so the application you submit is solid, making a strong case for your project.
- Seek an editor if you’re not a good writer
- 2-3 drafts? No way! 10-20 drafts...
CLARITY

• Use basic English, avoiding jargon or excessive language.
• Be consistent with terms, references and writing style.
• Make your points as directly as possible.
• Spell out all acronyms on first reference.
• Write one sentence summarizing the topic sentence of each main section.
• Do the same for each main point in the outline.
• Make one point in each paragraph.
• Keep sentences to 20 words or less.
• Write simple, clear sentences.
• Use the active, rather than passive, voice. For example, write "We will develop an experiment, not "An experiment will be developed ."
LINK PROPOSAL TO BUDGET

• Before you start writing the application, think about the budget and how it is related to your research plan. Remember that everything in the budget must be justified by the work you've proposed to do.
• Be realistic. Don't propose more work than can be reasonably done during the proposed project period. Make sure that the personnel have appropriate scientific expertise and training. Make sure that the budget is reasonable and well-justified.
• Example: if you request 4 research assistants, make sure they show up in your narrative!
GRAPHICS AND HUMAN FACTORS

• Use diagrams, figures and tables, and include appropriate axis labels and legends, to assist the reviewers to understand complex information. Reviewers will look for discrepancies between your data and text.
• Make sure the figures and labels are readable in the size they will appear in the application. (can be 10 pt)
• Use bullets and numbered lists for effective organization.
• Indents and bold print add readability.
• Bolding highlights key concepts and allows reviewers to scan the pages and retrieve information quickly.
• Do not use headers or footers.
SAMPLE PROPOSAL

• Michael N. Starnbach, Ph.D., of Harvard University Medical School
• "Alteration of host protein stability by Legionella"
• Professor of Microbiology at Harvard
• On NIH NIAID website under sample proposals and summary statements
• http://www.niaid.nih.gov/researchfunding/grant/pages/appsamples.aspx
TELL ‘EM THE BAD NEWS TOO

• Read the PHS 398 carefully for specific requirements, especially those involving human subjects. Discuss honestly the potential risks for participants.

• Estimate how much you expect to accomplish each year of the grant and state any potential delays you can anticipate.

• Describe sources of reagents, animals or equipment not generally available. If collaborators will provide them, include letters from the sources in your application.

• Describe any procedures, situations, or materials that may be hazardous and precautions you will take.
SCENARIO: R21

- Beginning-level grant but allows for $275,000 over 2 years
- Pilot projects, smaller innovations
- Less competitive
- Can lead to other larger funding sources
Purpose

The Exploratory/Developmental Grant (R21) mechanism is intended to encourage exploratory and developmental research projects by providing support for the early and conceptual stages of these projects.

What this tells me

Exploratory means innovation – you’re using a new method or a new perspective or ....

Developmental means you’re new to the field or new IN a field, you’re just getting started for whatever reason (including a gap in your research career!)
ALIGN MISSION AND GRANT

Purpose
The Exploratory/Developmental Grant (R21) mechanism is intended to encourage exploratory and developmental research projects by providing support for the early and conceptual stages of these projects.

What this tells me

**Early and conceptual stages** means that your project will be judged less harshly by evaluators; they understand you’re relatively new.

BUT this is no excuse for not using the most well-thought out ideas and methods with strong documentations.
By using the R21 mechanism, the NIH seeks to foster the introduction of novel scientific ideas, model systems, tools, agents, targets, and technologies that have the potential to substantially advance biomedical research.

What this tells me:
- Distinguish clearly what is NEW in your project
- Maintain credibility
- What will I substantially advance?
- What makes this project biomedical?
ALIGN SOURCE WITH YOUR GOALS

R21 – 6 pages

• Match with mission
• 2 year grant
• $275,000

My Goals

• Check!
• Keep goals simple, conceptual, pilot-like! Many grants tank because they’re unrealistic. Coherent, integrated, complete, where does it lead?
• University large grant policy, minimize salary, maximize students, mission-based goals
• WILL I HAVE ENOUGH?
SPECIFIC AIMS

• Your specific aims are the objectives of your research project, what you want to accomplish. The project aims should be driven by the hypothesis you set out to test. Make sure they are highly focused.

• Begin this section by stating the general purpose or major objectives of your research.

• If you have more than one hypothesis, state specific aims for each one.

• Keep in mind your research methods will relate directly to the aims you have described.

• Choose objectives that can be easily assessed by the review committee.

• Do not confuse specific aims with long-term goals.
SAMPLE SPECIFIC AIMS

*L. pneumophila* is a powerful model organism that can be used to understand the interactions between intracellular pathogens and the host cells they infect. Our lab has been interested in understanding, at a global scale, how effector proteins that are translocated into host cells during bacterial infection post-translationally manipulate host cell proteins and pathways. Although some host cell proteins targeted by specific *L. pneumophila* type IV secreted effectors have been identified, most have remained elusive. We have been working with Stephen Elledge’s lab in the Department of Genetics to adapt their recently-developed “Global Protein Stability” (GPS) system to analyze how translocated effector proteins impact the stability of individual host cell proteins. Our goal in this proposal is to globally characterize changes in host protein stability caused by translocated proteins and to begin identifying specific *L. pneumophila* effectors responsible for these alterations. Understanding on a large scale what host proteins are altered by specific bacterial effectors will allow us to uncover host pathways that are critical for *L. pneumophila* replication and survival inside a cell.
SAMPLE SPECIFIC AIM 1

Specifically, we will:

**Specific Aim 1. Identify and characterize host cell proteins that are stabilized or destabilized by *L. pneumophila* translocated effectors.** To better understand how *L. pneumophila* manipulates host cells, we will conduct a “Global Protein Stability” (GPS) screen to identify host proteins that are altered in stability when the *Legionella* type IV secretion system is present. We will determine the stability of >12,000 individual host proteins during infection with wild-type *L. pneumophila* and then identify which of these host proteins are more or less stable when the cell is infected with *L. pneumophila* (ΔdotA) that lacks a functional type IV secretion system (and is unable to secrete effectors into cells). Once we identify proteins whose stability is altered by the *L. pneumophila* effectors, we will determine whether reversing these changes, by either reducing or increasing the prevalence of these host proteins, impairs the intracellular growth of *L. pneumophila*. This will identify host proteins whose stability must be manipulated by *L. pneumophila* in order for the organism to grow.
SAMPLE SPECIFIC AIM 2

Specific Aim 2. Determine the *L. pneumophila* Dot/Icm-translocated substrates that are responsible for alterations in host protein stability. Previous loss-of-function studies using *L. pneumophila* mutants have been unable to identify the targets of many effectors due to significant redundancy in the function of the effectors. Once we identify changes in host protein stability mediated by the translocated effectors (in Specific Aim 1), we can then test which *L. pneumophila* effector(s) is responsible for that alteration. This allows a more direct approach to identify bacterial effector/host target pairs important in pathogenesis. Together these approaches will help us understand both the host proteins that are altered in stability and the bacterial effectors responsible for these changes. If these effector-mediated manipulations of host cell protein stability are required for growth, it will allow us to develop new classes of antibiotics that prevent these manipulations and prevent bacterial growth.

Through these two fundamentally linked aims we will use GPS to identify host proteins, pathways or networks altered by *L. pneumophila* translocated effectors. We then can begin to identify the specific bacterial virulence factors responsible for those alterations. The use of GPS is an innovative method that can be adapted widely to understand host-pathogen interactions.
EXERCISE 2: SPECIFIC AIMS

• Identify 2-4 specific aims for your proposed project
RESEARCH PLAN

• Varies by RFP, so beware! ALWAYS defer to the RFP if inconsistent with general instructions

• 3 general sections:
  • Significance
  • Innovation
  • Approach (should be the majority of your writing)

• All guided by 2-4 specific aims
BACKGROUND AND SIGNIFICANCE

• Keep the statement of significance brief. State how your research is innovative, how your proposal looks at a topic from a fresh point of view or develops or improves technology.

• Show how the hypothesis and research will increase knowledge in the field. Relate them to the longer-term, big picture scientific objectives and to the betterment of public health.

• Justify your proposal with background information about the research field that led to the research you are proposing. The literature section is very important because it shows reviewers you understand the field and have a balanced and adequate knowledge of it.

• Use this opportunity to reveal that you are aware of gaps or discrepancies in the field. Show familiarity with unpublished work, gained through personal contacts, as well.

• Identify the next logical stage of research beyond your current application.
SIGNIFICANCE

R21

• **Explain** the importance of the problem or critical barrier to progress in the field that the proposed project addresses.

**Tips**

• First -- define the problem clearly and concisely
• Second – why the problem is a barrier to progress
• Place in broader context – nation, culture, economics, etc.
• Evidence that the problem exists -- use statistics that are from federal sources if possible
• Identify specifically who or what is affected
SIGNIFICANCE

R21

• Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields.

Tips

• Be clear but realistic about the potential positive outcomes of your research (direct and indirect)

• Point to studies that can be done once yours is done

• Emphasize interdisciplinary, collaborative aspects – place yourself in your science and your field
EXERCISE 3: SIGNIFICANCE

• Write down at least three points to develop the significance of your project
INNOVATION
• Since innovation is a review criterion, you want to think outside of the box—but not too far.
• It's enough to show how the work you propose is new and unique and will push the frontiers of knowledge ahead starting from what's known.
• A reviewer may take a challenge to the status quo as a challenge to his or her world view or research.
• **Checkpoint.** After finishing the draft innovation section, check that:
  • I show how my proposed research is new and unique, e.g., explores new scientific avenues, has a novel hypothesis, will create new knowledge.
• If I am a new investigator:
  • Most likely, I explain how my project's research can refine, improve, or propose a new application of an existing concept or method.
  • Less likely, I go for the other option described in NIH's definition: show how my research can shift a current paradigm. If I choose that path, I:
    • Make a very strong case for challenging the existing paradigm.
    • Have data to support the innovative approach.
    • Have strong evidence that I can do the work.
INNOVATION

R21

- Describe any novel theoretical concepts, approaches or methodologies, instrumentation or intervention(s) to be developed or used, and any advantage over existing methodologies, instrumentation or intervention(s).

Tips

- Distinguish yourself! (value added model)
- Quality of health outcomes?
- Economic value? (Perry Preschool study)
- Accessibility?
- Efficiency?
- Comparative charts with data
- Specific documentation of why it’s better
EXERCISE 4: INNOVATION

• Write three innovations that can be found in your project.
METHODOLOGICAL/METHOD APPROACH

- State why you chose your approach(es) as opposed to others.
- If you are choosing a nonstandard approach, explain why it is more advantageous than a conventional one. Ask yourself whether the innovative procedures are feasible and within your competence.
- Spell it out in detail. While you may assume reviewers are experts in the field and familiar with current methodology, they will not make the same assumption about you. It is not sufficient to state, "We will grow a variety of viruses in cells using standard in vitro tissue culture techniques." Reviewers want to know which viruses, cells, and techniques; the rationale for using the particular system; and exactly how the techniques will be used. **Details show you understand and can handle the research.**
- Make sure any proposed model systems are appropriate to address the research questions and are highly relevant to the problem being modeled.
PRELIMINARY STUDIES/PROGRESS REPORT

• By providing preliminary data, this extremely important section helps build reviewers' confidence that you can handle the technologies, understand the methods, and interpret results.

• Preliminary data should support the hypothesis to be tested and the feasibility of the project.

• Explain how the preliminary results are valid and how early studies will be expanded in scope or size.

• Make sure you interpret results critically. Showing alternative meanings indicates that you’ve thought the problem through and will be able to meet future challenges.

• Preliminary data may consist of your own publications, publications of others, unpublished data from your own laboratory or from others, or some combination of these.

• Include manuscripts submitted for publication. Make sure it's clear which data are yours and which others reported.
RESEARCH DESIGN AND METHODS

Describe the experimental design and procedures in detail and give a rationale for their use.

Organize this section so each experiment or procedure corresponds to one of your specific aims and is stated in the same order.

Even holding to this structure, the procedures still must follow a logical sequence. They must have a clear direction or priority, i.e., the experiments and procedures should follow from one another and have a clear starting or finishing point.
EXERCISE 5: RESEARCH APPROACH

• Do you have a methodological stance? Examples might be constructivist/interpretivist, positivist, feminist? Provides an anchor, greater meaning

• How will you collect data? Who/what are the “subjects” of your project? Is it informed by your methodological stance? Map your data collection on to your model.
RESULTS

• Show you are aware of the limits to - and value of - the kinds of results you can expect based on current knowledge of the subject. State the conditions under which the data would support or contradict the hypothesis and the limits you will observe in interpreting the results.

• Show reviewers you will be able to interpret your results by revealing your understanding of the complexities of the subject.

• Many applications benefit from statistical analysis. The early involvement of a statistician to determine the amount of data to collect and the methods for analyses will favorably impress reviewers.

• Describe your proposed statistical methods for analyzing the data you plan to collect. Define the criteria for evaluating the success or failure of a specific test.
EXERCISE 6: DATA ANALYSIS

• How will you analyze your data? How does your data analysis relate back to your methodology and method?
APPROACH

R21

• Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate.

Tips

• Methodology and method – be knowledgeable about your field from many disciplines
• Early introduction of a graphic model of the overall design
• Be concise, be clear, cohesive
• Keep terms consistent throughout!
APPROACH

R21

• Describe the overall strategy, methodology, and analyses to be used to **accomplish the specific aims** of the project. Include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate.

Tips

• Refer to the specific aims regularly
• They must be measureable
• Provide a clear and documentable rationale for your method
**APPROACH**

**R21**

- Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate.

**Tips**

- Document access to a data source
- Describe population, sampling frame, inclusionary/exclusionary criteria
- Use verifiable resources if possible;
- Discuss difficulties with sampling; variations
APPROACH

R21

• Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate.

Tips

• Analysis fully planned out if quantitative if possible
• Boxes and arrows
APPROACH

R21

• Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate.

Tips

• Interpretation – place in broader context, picture
• How will you measure whether or not you met your specific aims?
• How will you know if you had an impact?
APPROACH

R21

- Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the aims.

Tips

- Be realistic about problems, don’t hide problems
- Make a table of problems, impact, solution
- Table of benchmarks with confidence intervals (reduce recidivism x%)
- Use effect sizes, impact factors
EXERCISE 7: PROBLEMS AND ANSWERS

• What problems might arise as you conduct your project? How might you prevent and/or deal with these projects?
APPROACH

R21

• If the project is in the early stages of development, describe any strategy to establish feasibility, and address the management of any high risk aspects of the proposed work.

Tips

• Be clear about TIMELINE
• More specific the better
• Budget justification should be clear
• Legal considerations of any sort
• Health risks must be fully managed
EXERCISE 8: TIMELINE

- Given the time period for your PA/RFA, draw a tentative timeline from start to finish
HUMAN SUBJECTS

• Assuring NIH human subjects are protected is a key responsibility of the applicant, in concert with the applicant's institution. If your proposed research does not involve human subjects, indicate this by noting "Not applicable in this section of the 398."

• If your proposed research involves human subjects or samples from human subjects, read carefully and follow the Human Subjects Research section of the PHS 398 instructions.

• Include enough information so reviewers have no questions about what you propose to do.

• Your research plan must be certified by your institution's institutional review board (IRB) prior to funding (unless exempt). Though IRB approval is not required at the time of application, you should start the process early because revisions and final approval can take time.
VERTEBRATE ANIMALS

• A detailed description of the proposed use of animals.
• A justification for the choice of species and number of animals to be used (describe any statistical methodology used for this determination).
• Information on the veterinary care of the animals.
• An explanation of procedures to ensure that the animals will not experience unnecessary discomfort, distress, pain, or injury.
• Justification for any euthanasia method to be used.
• If the proposed research involves vertebrate animals, your project must be reviewed and approved by an institutional animal care and use committee (IACUC) prior to review, and an Animal Welfare Assurance must be on file with the Office of Laboratory Animal Welfare. See the instructions for item 5 of the face page of PHS 398 for further details. For more information, contact OLAW or your institution's grant or contracts office.
LITERATURE CITED

• Refer to the literature thoroughly and thoughtfully but not to excess. The publications you cite need not be exhaustive but should include those most relevant to your proposed research.

• Research proposals typically do not fare well when applicants fail to reference relevant published research, particularly if it indicates that the proposed approach has already been attempted or the methods found to be inappropriate for answering the questions posed.

• Each citation must include the names of all authors (not et al.), name of the book or journal, volume number, page numbers (not first page only), and year of publication.
NIH ADDITIONAL MATERIALS

• Additional Elements Required in a Grant Application

The following elements need to be included in the grant application as appropriate. Unless stated, these elements do not influence the rating (priority score) of the application. However, the reviewers are asked to comment on the adequacy of the information provided for each element. Any concerns the reviewers identify may negatively affect and postpone the granting of an award.

• Appendix Materials

The Appendix may not be used to circumvent the page limitations of the Research Plan. Essential information should be included within the body of the grant application. The appendices should contain supportive or supplemental information.

• Bibliography & References Cited (formerly “Literature Cited”)

Provide a bibliography of any references cited in the Research Plan. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. Make sure that only bibliographic citations are included. Be especially careful to follow scholarly practices in providing citations for source materials relied upon when preparing any section of the application. Note the location of this information is slightly different in the SF424 R&R and the PHS398. Please read the application instructions carefully for whichever application you are using.

• Care and Use of Vertebrate Animals in Research

If you are planning to use live vertebrate animals in the project, you must adhere to the requirements in the Public Health Service (PHS) Policy: HTML Version and PDF Version. The PHS Policy is summarized in the brochure What Investigators Need to Know About the Use of Animals. Additional information can be found at:

• Office of Laboratory Animal Welfare Web Site

• NIAID’s tutorial: Requirement for Grantees Using Research Animals

• Consortium/Contractual Arrangements

Explain the programmatic, fiscal, and administrative arrangements to be made between the applicant organization and the consortium organization(s).

• Consultants

Attach appropriate letters from all consultants confirming their roles in the project. For consultants, letters should include rate/charge for consulting services.

• Facilities & Other Resources

This information is used to assess the capability of the organizational resources available to perform the effort proposed. Identify the facilities to be used (Laboratory, Animal, Computer, Office, Clinical and Other). If appropriate, indicate their capacities, pertinent capabilities, relative proximity and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work.

• Inclusion of Women, Minorities and Children in Research

Peer reviewers will also assess the adequacy of plans to include subjects from both genders, all racial and ethnic groups (and subgroups), and children, as appropriate, for the scientific goals of the research will be assessed. Plans for the recruitment and retention of subjects will also be evaluated.

• Protection of Human Subjects from Research Risk

Applicants must assure NIH that all human subjects are protected. Reviewers will assess the potential risk to human subjects in proposed research and evaluate what protections are in place to guard against any research-related risk. Awards cannot be made until assurances are on file with the Office for Human Research Protections (OHRP). Decision charts are presented that are helpful in thinking through relevant human subject protections issues (see http://www.hhs.gov/ohrp/policy/checklists/decisioncharts.html).

• Resource Sharing Plan(s)

This section includes Data Sharing Plan, when applicable, and Sharing Model Organisms. For more information on data sharing, please see the NIH website at http://grants.nih.gov/grants/policy/data_sharing/.

• Select Agents

Identify any select agents to be used in the proposed research. Select agents are hazardous biological agents and toxins that HHS or USDA have identified as having the potential to pose a severe threat to public health and safety, to animal and plant health, or to animal and plant products. CDC maintains a list of select agents and toxins.

• Multiple PD/PI

For applications designating multiple PDs/PIs, you must include a leadership plan.

• Use of Internet Sites

NIH instituted a policy that prohibits the use of World Wide Web addresses (URLs) in grant applications in the place of text describing the same material. This is because of the potential for providing a large amount of extra material from a web site beyond what would fit in the page limit, and thereby giving an unfair advantage to some applicants and a large additional burden for reviewers.

BUILD PODER Pilot Project Workshop
EXTERNAL AGREEMENTS

• **Consortium/Contractual Arrangements**
  
  This section should briefly describe any consortium and contractual arrangements you have made with regard to the proposed research plan. The roles of individuals or organizations with whom you have made such arrangements should be noted and reference made to any letters from them that are included in the application. Letters should describe the individual's or organization's understanding of the consortium or contractual arrangements.

• **Consultants**
  
  Careful selection and addition of consultants can add credibility to your application and greatly improve its quality. A letter describing the willingness of an investigator to participate as a consultant to your project should be included in your application.
BIOSKETCH

- New Biosketches as of January 2015, 5 major scientific accomplishments, less emphasis on publications
- SciENcv (Science Experts Network Curriculum Vitae) – fillable forms generate NIH Biosketches, soon integrated with all grants.gov formats.
GET YOUR PUBS IN THERE!

• Include supporting data.
• Include relevant publications.
• If you (or your collaborators) have publications showing your use of the proposed methods, put them in the appendix.
• If they are NIH-funded publications, they should be registered with PubMed.
PROJECT NARRATIVE

• For NIH and other PHS agencies applications, using no more than two or three sentences, describe the relevance of this research to public health.

• In this section, be succinct and use plain language that can be understood by a general, lay audience. If the application is funded, this public health relevance statement will be combined with the project summary and will become public information.
SAMPLE PROJECT NARRATIVE

*Legionella pneumophila*, the causative agent of Legionnaires’ disease replicates inside host cells. To manipulate the host cell and replicate intracellularly, the organism injects >150 of its proteins into host cells. The proposed research uses a large-scale approach to identify the targets of these injected bacterial proteins – identifying the host cell proteins that are destabilized or stabilized by the injected bacterial proteins. Once we identify which bacterial proteins are manipulating which host proteins, we can test methods to disrupt these interactions. This may lead to the development of new classes of antibiotics to treat bacterial infection.
PROJECT SUMMARY/ABSTRACT

• The Project Summary must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained description of the project and should contain a statement of objectives and methods to be employed. It should be informative to other persons working in the same or related fields and insofar as possible understandable to a scientifically or technically literate lay reader.

• The Project Summary is meant to serve as a succinct and accurate description of the proposed work when separated from the application. State the application’s broad, long-term objectives and specific aims, making reference to the health relatedness of the project (i.e., relevance to the mission of the agency). Describe concisely the research design and methods for achieving the stated goals. This section should be informative to other persons working in the same or related fields and insofar as possible understandable to a scientifically or technically literate reader. Avoid describing past accomplishments and the use of the first person. Finally, please make every effort to be succinct.

• This section must be no longer than 30 lines of text, and follow the required font and margin specifications. An abstract which exceeds this allowable length may be flagged as an error by the agency upon submission. This would require a corrective action before the application will be accepted.
Infection with the intracellular pathogen *Legionella pneumophila* can lead to a severe pneumonia known as Legionnaires' disease. *Legionella pneumophila* uses a specialized type IV secretion apparatus, also known as the Dot/Icm system, to secrete over 150 effector proteins directly into the host cell. The translocated bacterial effectors establish a vacuolar niche that supports replication of *L. pneumophila* in eukaryotic cells. While there is an extensive literature describing how several of these effectors alter host cell functions, the targets of most have remained elusive. A significant problem in linking a particular effector to a particular function is the redundant or overlapping activity of many effectors. This means that *L. pneumophila* mutant strains deficient in any one effector often have no appreciable phenotype, preventing the identification of their host targets.

While it is well appreciated that many *L. pneumophila* effectors directly alter host proteins through functions such as E3 ubiquitin ligase activity, there have been few methods developed to monitor pathogen-induced changes in host protein stability on a large scale. Here we propose to apply a novel screening method called the “Global Protein Stability” (GPS) system to identify host cell proteins whose stability is altered by the secreted *L. pneumophila* effectors. Once we have identified host proteins that are stabilized or destabilized when a functional type IV secretion system is present, we will test whether reducing or increasing the prevalence of these proteins (attempting to reverse the effects of the *Legionella* effectors) impairs the capacity of *L. pneumophila* to replicate and survive within host cells. Once we identify which host proteins must be altered in order for *L. pneumophila* to replicate, we will take a targeted approach to identify which of the *L. pneumophila* effectors are causing these essential changes to host proteins. In addition, the GPS screen may also identify the targets of specific “families” of effectors that have remained elusive, such as the *L. pneumophila* E3 ubiquitin ligases. The directed approach we propose allows us to overcome the difficulties inherent in target identification, such as the redundancy of effectors, and identify the functions of effectors that have remained cryptic. Organism-induced alterations of the host are key to pathogenesis, yet it has previously not been possible to study alterations to individual host proteins at the scale the GPS system permits. The experiments described in this proposal allow, for the first time, dissection of how bacterial infection globally regulates host cell proteins and pathways beyond the transcriptional level.
The PI’s laboratory consists of 1700 square feet of space in the Warren Alpert Building. There is ample bench, desk space and a fume hood. In addition, we have exclusive access to a tissue culture room with four laminar flow hoods, a CO2 incubator and microscopes. We have shared access to warm and cold rooms and several equipment rooms. A newly constructed SPF animal facility is located within the Warren Alpert Building. Space for infected mice is available in a newly constructed BL2/BL3 vivarium in an adjacent building. Apple Macintosh personal computers are located in both the office and laboratory space. All computers are attached by Ethernet to Harvard University computing facilities, the internet, software for analysis of sequence data, the Harvard Medical School library databases, and scientific literature databases.

The PI’s office is 240 square feet and is attached to the laboratory space.

Administrative support, computer support, statistical consulting, bioinformatics support and secretarial support for this project is available in the Department of Microbiology and Molecular Genetics.

The equipment necessary to perform the research in this proposal is located either within our laboratory, within the Department of Microbiology & Molecular Genetics, or within the adjacent Immune Diseases Institute. These include centrifuges, FACScan and FACSaria flow cytometers/sorters, oligonucleotide synthesizers, thermal cyclers, HPLC, refrigerators, freezers, -800 C freezer, liquid N2 storage, and electrophoresis equipment.

The Department of Microbiology and Molecular Genetics has just purchased an Agilent array reader that is available for analyzing the arrays in this project.
SAMPLE RESOURCE SHARING PLAN

- Research resources generated with funds from this grant will include DNA constructs and transfected cell lines. These resources, as available, will be freely distributed upon request to qualified academic investigators for non-commercial research. My institution and I will adhere to the NIH Grants Policy on Sharing of Unique Research Resources including the “Sharing of Biomedical Research Resources: Principles and Guidelines for Recipients of NIH Grants and Contracts” issued in December, 1999.
- http://ott.od.nih.gov/NewPages/Rtguide_final.html. Specifically, material transfers would be made with no more restrictive terms than in the Simple Letter Agreement or the UBMTA and without reach through requirements. Should any intellectual property arise which requires a patent, we would ensure that the technology remains widely available to the research community in accordance with the NIH Principles and Guidelines document.
- Resource
EXERCISE 8: RESOURCES

- What resources do you bring to the table here?
- Use boilerplate text for university when possible
- Think office, lab, department, college, university – what resources will you draw upon?
MULTIPLE PIS

• The multiple PI option, which allows applications to have more than one principal investigator, is for collaborative research, also called team science.

• Most NIH grants, including R01s, allow multiple PIs; to be sure, check the funding opportunity announcement.

• If your application includes an established PI, it will not qualify for the new or early investigator payline.

• Another way to amp up expertise—or create a research team—is to be part of a multiple PI application.

• Also be aware that a multiple PI application is usually appropriate only if you could not complete the research without the other person (or persons). To succeed in peer review, your research must require a high degree of synergy.

• For a multiple PI application, all PIs have the same status and are responsible for their research.

• Each PI must have a leadership role, and the application should state which PIs are responsible for which Specific Aims. The science determines the level of effort for each PI; there is no minimum.

• One person serves as contact PI, coordinating communication between all PIs and NIH and coordinating the progress report. He or she must be affiliated with (not necessarily employed by) the applicant institution.
MULTIPLE PI LEADERSHIP PLAN

• The Leadership Plan has no page limit and does not count toward the Research Strategy page limit. It must address these items:
• Rationale and justification for choosing the multiple PI approach.
• Administrative and scientific responsibilities for each PI, including who will be the contact PI. As in the Research Strategy, state which PI is responsible for which Specific Aims.
• Governance and organizational structure of the team.
• Procedures for resolving conflicts.
• Policies for communication, data sharing, publication, and intellectual property.
• Process for making decisions on scientific direction and allocating resources and funds.
• Budget issues.
  • If each PI will have a budget, state how resources will be distributed.
  • If requesting money for administrative activities, put it in the Leadership Plan.
  • Having more than one PI should not increase the cost of the application except for items such as travel to scientific meetings.
  • The PIs may request that we include a budget allocation in the Notice of Award.
CONSULTANTS AND COLLABORATORS

• **Consultants or Collaborators—How They Differ**

  - Collaborators play an active role in the research; consultants provide advice or services and may participate significantly in the research.
  - Consultants and collaborators are treated differently in your application. Sometimes people play both roles.
  - Consultants usually provide advice or services.
  - They may participate significantly in the research, but often they help fill in smaller gaps, for example, supplying software, making technical comments, or setting up equipment.
  - Consultants do not receive a salary from your grant but may receive a fee. When paying them, your institution issues a [Form 1099 Misc](#) to the [Internal Revenue Service](#).
  - Collaborators always play an active role in the research.
  - They do not get a fee, but the grant may pay part of their salary in person months through a consortium agreement (also called a subaward). Collaborators get an IRS [Form W-2](#) from their institutions.
EXERCISE 9: CONSULTANTS AND COLLABORATORS

• How will you round out your expertise? Do you have people involved who can bring skills that you may be lacking to the project?

• How will you work collaboratively and what roles will your collaborators and consultants play?
IDENTIFYING INFORMATION

AWARDEE: UNIVERSITY CORPORATION

TOTAL DIRECT AND GRAND TOTAL FUNDS REQUESTED

DUNS

FWA
CERTIFICATIONS

• SFLLL (Disclosure of Lobbying Activities) or Other Explanatory Documentation
• Authorized Representative
• Project/Performance Site Locations
• Congressional District
• Other Project Information Form
• Human Subjects
• Animal Subjects
WHAT’S THE UNIVERSITY LARGE GRANT PROGRAM?

• $9,000 - $17,999 of indirect cost (F&A) – 3 units
• $18,000-$35,999 – 6 units
• $36,000-$71,000 – 12 units
• $72,000-$89,999 – 15 units
• $90,000-$107,999 – 18 units
• $108,000-$125,999 – 21 units
• $126,000+ 24 units
INDIRECT COSTS

On-campus research 45.0%
Off-campus research 26.0%
On-campus instruction 48.0%
Off-campus instruction 26.0%
On-campus other sponsored activity 50.0%
Off-campus other sponsored activity 26.0%
THE CON SIDE

• Many administrative tasks
• BUDGETS are a pain (write an assistant into your grant), interactions with Univ. Corporation
• Hiring, training new researchers
• Securing participants
• IRB issues
• On the whole, overall workload is not reduced
• Progress reports
• Fragmentation away from teaching, student contact
PERSEVERENCE

Don’t expect to get a grant the first time!

Second time’s a charm...
CSUN’S RESEARCH, SCHOLARSHIP, AND CREATIVE ACTIVITIES AWARDS

• **Significance and Broader Implications**
  • The project will make a significant contribution to the field.
  • The project shows promise of extramural funding.
  • The project positively impacts student learning and/or mentoring.
PROSPECTS FOR SUCCESS

- Sufficient resources are available, the budget is appropriate to carry out the research method or process, and the timeline is realistic, including any approvals for human subjects or animal research.
- The project contains adequate dissemination, performance or exhibition plans.
- The applicant, if previously supported by competition funds, has utilized the award effectively and completed the requisite reports.
CONTENT AND FORMAT

- The project, problem or subject is clearly presented and the aim is clear.
- The research method or creative process is clearly stated, justified, and appropriate to achieve the project goals.
- The proposal conforms to formatting guidelines.
HOW TO GET STARTED

- Write format into file – 5 pages, double-spaced
- 12 point Arial, Times New Roman, Georgia, Palatino
- Begin template
APPLICATION

• Title: Descriptive and concise
• Often use a : to elaborate
• Social Media: Networking and Bullying
• Seed support vs. continuing (I recommend seed support)
• I recommend giving permission to use as a model
• If human subjects, good to be through committee or at least have applied
• Signatures – check ahead about policies
BUDGET

- Students are valued
- Undergraduates $10-12/hour
- Graduates $12-14/hour
- Don’t ask for materials or travel that you already have access to
- Reassigned time – be specific
OVERVIEW

1) identifies the problem or subject to which the project is directed
2) the aim or outcome and
3) the significance of the proposed project

Write this last
Be succinct
Accessibility to those outside of your discipline
a. Identify the Problem - An introduction to the subject area to which the project is directed.

b. Aim or Expected Outcome of the Project - The purpose of the study or project.

c. Research method or creative process - Research design, or creative approach/activity that will be used. If applicable, step-by-step details are preferred. Include evaluation criteria, if applicable.

d. Timeline - List major activities and approximate number of weeks needed for each activity.

e. Potential Significance - Identify the potential, practical, theoretical, or creative value of the project.

• If your proposal is for a segment of a larger project, make clear why the larger project is likely to have a significant impact and how the segment for which you are requesting support fits into this larger work.

f. Impact on Instruction - Describe potential benefits to teaching and student mentoring, if appropriate.

g. Plans for Dissemination - Plans for publishing, exhibiting or otherwise disseminating the results of the project.

h. Availability of Resources - Identification of the availability of the equipment, space, etc. needed to accomplish the project.

i. Bibliographic References - List only those references cited in the proposal.
IDENTIFY THE PROBLEM

• An introduction to the subject area to which the project is directed.
• Filling an important gap in the literature
• Statistics (% affected)
• Seriousness of the problem (morbidity vs. mortality for example)
• Vulnerable populations (e.g., children, low income, people with disabilities)
• Problem links to other problems that could be solved by a higher level solution
AIM OR EXPECTED OUTCOME

- The purpose of the study or project
- BE CLEAR!
- Be objective – measureable outcome (% increase in smoking cessation)
- Provide a rationale given prior studies – must be credible
- Often bulleted aims (not more than 3)
RESEARCH METHOD

• Research method or creative process - Research design, or creative approach/activity that will be used.
• If applicable, step-by-step details are preferred.
• Include evaluation criteria, if applicable.
RESEARCH QUESTION/HYPOTHESIS

- Research question – Not necessarily refutable
- Hypothesis – refutable
- Null – no effect, no difference
- Alternative – Effect, difference, etc.
SAMPLE

• Population/Sampling Frame/Sample
• Justification for sample size and sampling techniques
• Inclusionary/exclusionary criteria
• Sample size justification
• Generalizability
• How will you gain access?
• IRB
• Ethical protections
DATA COLLECTION

- Type of data – nominal, ordinal, interval, ratio
- Quantitative/qualitative/mixed method
- Technique (survey, observation, secondary analysis, etc.)
- Validity and reliability
PROCEDURE

• Replicable if possible (step by step)
• Who will collect data/training?
• Time it will take for each “unit” or participant
• Is it the simplest procedure?
• Feasibility
EVALUATION

• How will you know if you’ve succeeded in developing a valid study that answers your question?
• Analytic strategy and justification/rationale
• Alternative criteria
• Outside expert
• Manipulation (lie scale, criterion)
TIMELINE

- List major activities and approximate number of weeks needed for each activity.
- Feasibility, cite pilot study
POTENTIAL SIGNIFICANCE

- Identify the potential, practical, theoretical, or creative value of the project
- If you answer your research question, what could happen?
- Local only? Generalizable?
If your proposal is for a segment of a larger project, make clear why the larger project is likely to have a significant impact and how the segment for which you are requesting support fits into this larger work.
IMPACT ON INSTRUCTION

• Describe potential benefits to teaching and student mentoring, if appropriate.
• Involve students in all phases
• How, specifically, will students benefit?
• Name the skills, how it will help (lead to job, graduate program, etc.)
• Can you link to a specific class?
PLANS FOR DISSEMINATION

• Plans for publishing, exhibiting or otherwise disseminating the results of the project
• Grants – public and private
• Publications in peer-reviewed journals
• Policy briefs/other
• Lay public
• Online
• Be realistic!
AVAILABILITY OF RESOURCES

- Identification of the availability of the equipment, space, etc. needed to accomplish the project
- Feasibility trumps grand ideas!
BIBLIOGRAPHIC REFERENCES

• Only the references you cited
OVERVIEW

1) identifies the problem or subject to which the project is directed
2) the aim or outcome and
3) the significance of the proposed project

Write this last
Be succinct
Accessibility to those outside of your discipline
SUPPORTING INFORMATION

- Report from Previous Support
- Details of other support
- Evidence of qualifications
SUPPORTING INFORMATION

• Previous internal awards
• Copy of report
• If references in CV, make sure to highlight
• Dissemination/outcome best if grant or article written
• Details of other support – overlap/linkages
• Other strengths for preparation – other grants, projects, alliances
CURRICULUM VITAE

• Same font size
• 2 pages maximum
• Include terminal degree, current rank and position within the university, a summary of your professional experience, and identification of any background information and/or publications most relevant to your proposed project
• The publications/creative activity list must include author(s), title, journal/magazine title, and the date of publication/activity
Months 1-3

Division of Receipt and Referral in the Center of Scientific Review

CSR Assigns application to Institute or Center

Scientific Review Officer (SRO) assigns applications to reviewers and readers

BUILD PODER Pilot Project Workshop
Initial Level of Review

SRG members review and evaluate for scientific merit

Peer review

Impact scores available to PI on eRA Commons

Second Level of review – Advisory Council/Board reviews

Summary Statement available to PI on eRA Commons

MONTHS 4-8
Pre-Award Process

IC grants management staff conduct final administrative review, negotiates award

Notification of Award

NIH I/C director makes funding decision. NoA to applicant institution/organization
Project period begins!

Then there’s post-award management

BUILD PODER Pilot Project Workshop
NIH SCIENTIFIC REVIEW OFFICER (SRO)

- Ensures equity
- Oversees the nuts and bolts of the review process, Applications assigned to SRO’s panel or SRO is assigned to a panel
- Finds suitable reviewers
- Coordinates the review meeting
- Makes assignments to reviewers
- Looks over reviews for format, rules, appropriateness
- Runs the review meeting
- Arbitrates policies and regulations of review
- No conflict of interest, no violations of confidentiality
NIH PROGRAM OFFICER (PO)

• Monitors the science
• Manages grant awards
• Develops funding opportunities to address gaps in a scientific area
• Provide scientific expertise to other federal agencies
• If you want to know if you research fits a call, PO is your person
• Attends review meetings, give advice
• Work with grants management to negotiate the award
• Works with you throughout your project period
NIH GRANTS MANAGEMENT OFFICERS AND SPECIALISTS

- Handles financial and administrative aspects of awards
- Manager oversees all operations
- Specialists have a portfolio of grants, responsible for oversight
- Review applications to policy and regulations, certifications, etc.
- Prepare award calculations, enter into system
- Post-award work with issues for each project
- Officers and specialists work separately – awarding and running the grants are separate jobs
NIH COMMON BUDGET QUESTIONS

• Modular and non-modular forms
• What are the annual direct costs
• Conference grants, grants over $500,000 in direct costs have to be approved ahead of time
• Institute or center-level approval
• If not approved, don’t have to do work
• If you submit and you don’t see your grant there in a few days, call
• Then information about your application is available at some points during review
• Summary statement is the written reviews, can call PO to interpret, may still be making funding decisions
• POs can tell you what was said at the meeting
• Sometimes you have to contact PO because there’s a special condition
FUNDING SCORE

• If you’re told you’ve got a fundable proposal, grants management can answer questions, but usually you wait for them to contact you
• Get together just-in-time materials, but don’t upload until you’re asked to do so
• Contact via authorized official, cc PO and GMS
• Grants management is involved in negotiating the award
• GMS if questions about NoA
NOA

- Restrictions – be sure to abide, if you want to lift, talk to GMS
- For scientific questions, PO, for financial questions, GMS
- Administrative changes – talk with PO, sometimes GMS
- Contact as soon as you know if you’re changing institutions
- Changes in scope, ask NIH, requires approval