Letters of Intent, Preproposals, White Papers, Requests for Information, Abstracts, and Logic Models: The Role of these Short Papers in Successful Grant Applications

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What purposes do they serve?

- Preliminary screening of potential applicants
- Selecting/eliminating reviewers
- Managing conflict of interest
- Estimating budget requests
- Allocating appropriate staff
- Gauging interest in the topic
- Gathering data for future funding opportunities (sense of the market) or for future budget requests to Congress

What Agencies Use these Papers

- National Science Foundation
- National Institutes of Health
- National Endowment for the Humanities
- NASA
- U.S. Department of Energy
- Environmental Protection Agency
- U.S. Department of the Interior, including Bureau of Land Management
- U.S. Department of Defense and many of its branches
  - DARPA
  - Army Research Lab
  - Office of Naval Research
  - Air Force Office of Scientific Research
  - U.S. Coast Guard

Other Agencies and Organizations

- Private Foundations
- Not-for-profit organizations
- Congressional Offices
- Industries
- Federal laboratories
- State or local grant agencies
- Internal grant programs
- Limited submission grant opportunities

Letter of Intent

- Used for multiple purposes:
  - Find out how many applications are expected so reviewers can be identified and agency staff prepared
  - Determine eligibility of applicant for the full grant application
    - Type of institution/adequate infrastructure
    - Qualifications of PI
    - Appropriate partnerships or cost-sharing
    - Fit of topic with agency program

Letter of Intent, continued…

- May serve as screening document to invite full proposal, especially NSF and DOD
- May or may not receive written, oral or telephone reviews
- May be asked to submit more details before decision
- May request budget total without details or none at all
- Often submitted directly online
  - NSF Fastlane to specific program
  - DOD directly to Program Officer

Letter of Intent, continued…

- Format and Content
  - May or may not have required content or length
  - Typically 1-2 pages, addressed to the program officer, signed by the PI
  - Minimum Content:
    - Number and title of the funding opportunity
    - Title and brief description of the proposed project
    - Name, affiliation, and contact info for all PIs and Co-PIs
    - Participating institutions, if applicable

NSF's Reasons for Letters of Intent

- "Reduce the proposers' necessary effort in proposal preparation when the chance of success is very small.

  "This is especially true of exploratory initiatives where the community senses that a major new direction is being identified, or competitions will result in a small number of actual awards." … and …
- "Increase the overall quality of the full submission."
- Reduce program officers' workload?
- Deter inappropriate applicants from applying?
- Save PI time and grief?

White Paper

- Short document that
  - Answers a funding agency's need
  - Poses a technological problem and solution
  - Helps agency decide to invite/not invite/fund
  - May be confidential to agency
  - May not receive a response or review
  - May or may not lead to a proposal or grant
  - May be used by agency for internal purposes
    - Find reviewers, find consultants, validate their own research or technology, impress Congress

Typical Format of White Paper

- Cover page (may be optional, may include abstract)
- Abstract—one paragraph, high-level overview
- Small sections, clear headings; sections include--
- Introduction/background
  - What is the problem/question to be addressed
  - Why is it important to agency and/or proposer
  - How does proposer know about the problem
- Proposed solution
  - The current or basic solution
  - Your solution or technology
    - several options with varying complexity, sophistication, time, cost, risk

White Paper Details

- Proposed solution, continued…
  - Use graphs, illustrations, sufficient detail to show that the solution and proposer can solve the problem
  - Include examples of previous/other research as proof that the solution can work
    - Case studies, comparisons, success stories, literature of proposer and others
    - Describe risks and risk management
      - What-if scenarios
      - Alternative approaches

White Paper Details, continued…

- Future direction/long-term focus
  - Clarify steps, timelines
  - Overall future of the problem/solution
    - Long-term benefits/outcomes
      - To agency
      - To proposer
      - To society/nation/world
- Recommendations/results/conclusions
  - Prioritize proposed activities
  - Review recommended solution(s) and why
- Biosketches
- References
- Appendices

Preliminary Proposals-Preproposals

- May be the first stage of a grant application or
- May be the second stage after letter of intent
- Often used to screen and then invite at this stage
- May have only internal agency review, not peers
- NSF, DOE, DOD, ED major users of preproposals
- Usually a mini-version of the full proposal
  - Typically 3-5 pages of narrative
  - Often same title, agency number, proposal components, format, order as full proposal
  - May have a full budget
  - May require biosketches
  - May require references

Pros and Cons of Preproposals

- Pro: saves investigator's
  - Time: no need for full proposal unless invited
  - Anxiety: usually short turn-around decision
- Pro: allows risk-taking
  - with new ideas:
  - with new agencies:
    - Reviewer comments can help improve the concept and make a more fundable proposal
- Con:
  - May disclose confidential/proprietary ideas
  - Other problems or issues that you see?

Request for Information

- Purposes:
  - Used by funding agency or specific program to help shape the actual request for proposals
    - Document technical need for the competition
    - Elicit potential solutions to that need
  - Used to gauge applicant interest
  - Used to document need for program to Congress
    - Number of responses, nature of responses, estimated budget needs, type of solutions, benefits to funding agency, industry, research community

Proposal Abstracts

- Immediately shows topic, approach, relevance to program officer
- Helps program officer determine selection of reviewers
- Forms first impression of full proposal for reviewers
- Most-read section of proposal; often in non-technical language
- Entered into permanent electronic database
- Becomes primary identifier of project
- Used by many agencies as press release, notice to politicians, or other publicity purposes
- Can also be called
  - Project Summary
  - Executive Summary
  - Technical Abstract
  - Project Overview

Abstract Audience/Readers

- Agency staff
- Highly technical, scientific peers
- Non-technical but professional peers
- Generalists/lay readers
- Public advisory council/board of directors
- Congress: staff, elected officials
- Local politicians
- Special interest groups
- General public

Components of Proposal Abstracts

- One or two sentences each on:
  - Subject: What is the project about?
  - Purpose and significance:
    - What is to be accomplished?
    - Why is this important—to funder, to discipline, to society?
  - Activities:
    - What will be done?
    - With what methods?

Components of Abstract, continued

- Location of project, if relevant or requested
  - City, state, region
- Target population and location of project
  - Demographics of participants, including beneficiaries or subjects
- Expected outcomes:
  - What results will be produced?
  - How will results advance knowledge/state of the art in the discipline or the profession?
  - What will be long-term benefits?

Agency Differences in Abstracts

- National Science Foundation
- National Institutes of Health
- U.S. Department of Education
- U.S. Department of Defense: DARPA
- National Endowment for the Humanities
- U.S. Environmental Protection Agency
- Private foundations
  - Robert Wood Johnson Foundation
  - The Camille and Henry Dreyfus Foundation

Agency Differences: NSF

- Called a “Proposal Summary”
- Requirements revised in 2013 and 2014
  - 4600 characters, including spaces
  - Three distinct sections, separately uploaded
    - Overview
      - Summarizes research topic, plan and approach
    - Intellectual Merit
      - How the project contributes to scientific knowledge
    - Broader Impact
      - How the project will benefit society

Agency differences: NIH

- Called a “Proposal Summary/Abstract”
- Maximum of 30 lines of text in PDF format
- Requirements include
  - Broad, long-term objectives and specific aims
  - Brief description of research design/methods
  - Target population, if applicable
  - Information on the health-relatedness, significance, and value of the research
  - Relevance to the specific mission of the agency

Agency differences: ED

- U.S. Department of Education
  - Requirements and format vary widely by DED program
  - Usually one page
  - May contain
    - institutional information, contact person, title
    - objectives
    - budget summary
    - project outcomes
    - institutional overview
    - number/demographics of targeted population

Agency Differences: DARPA, NEH

- U.S. Department of Defense: DARPA Young Faculty Award
  - “Write a 1-page executive summary”
- National Endowment for the Humanities Individual Fellowship
  - “Provide a description of your project.”
  - “State the importance of the proposed work to larger issues in the humanities.”
  - “Enter the starting and ending dates for your project.”

Agency Differences: EPA

- Environmental Protection Agency
  - EPA STAR Program: Project Summary (1 page)
    - Definition of technical challenge to sustainability
    - Development of innovative design approach with technical merit to address challenge
    - Discussion of how challenge and proposed design relate to sustainability, including people, prosperity, and the planet (P3)
    - Description of strategy for measuring results, evaluation and demonstration
    - Description of how P3 concepts will be used as an educational tool at the applicant institution
    - Supplemental key words

Agency Differences: Private Foundations

- Robert Wood Johnson Foundation
  - “In no more than 4000 characters (roughly 650 words), please summarize your proposed work in the text box below.”
- Camille and Henry Dreyfus Special Grant Program in the Chemical Sciences
  - “A one-page equivalent of an executive summary that answers the following:
    - What problem does the proposal address?
    - Why is it important?
    - How will what is proposed address the issue?”

Trends in Related Documents: Logic Models and Quad Charts

- Agencies are beginning to require logic models as part of the pre-proposal process
  - Logic model breaks the project into phases
    - Inputs (Resources)
    - Activities (Processes)
    - Outputs (Evidence)
    - Outcomes (Expected changes and benefits)
- Some agencies, especially Defense, are asking for a single Power Point Quad Chart that provides a visual abstract of the project

Logic Models

Grant agencies are beginning to request a logic model

- as part of the proposal or
- as a preliminary screening document to determine whether the idea is a good fit with the agency

- Logic models have many forms and formats, from very simple to very complex
- Logic models may be used as a tool to help an institution decide whether a project is ready to be submitted for funding
- Logic models may serve as a management tool for a funded project

Information on Logic Models

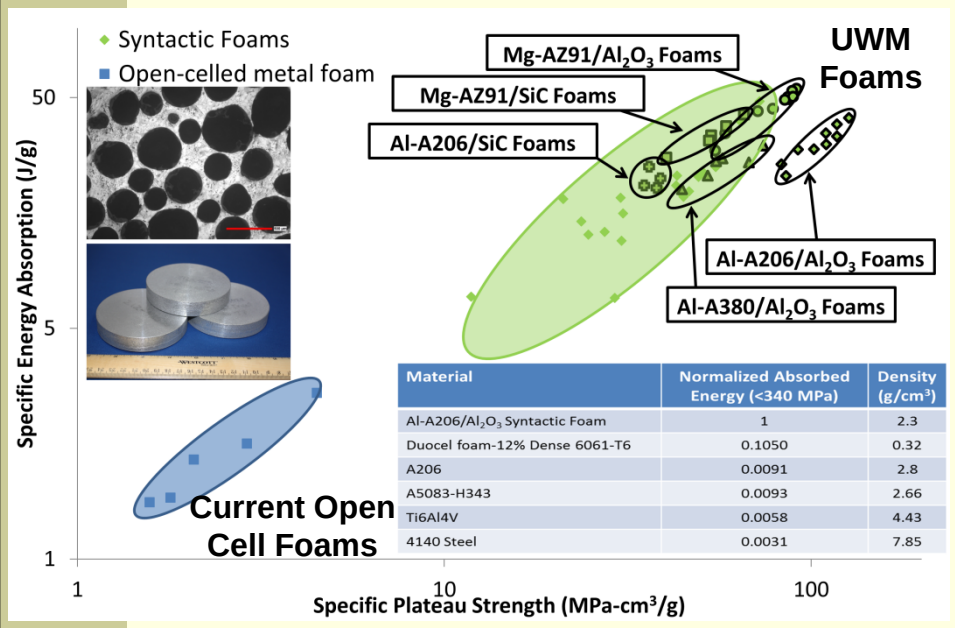
- Introduction to Logic model http://www.youtube.com/watch?v=lLCNfDsdi9I&NR=1&feature=endscreen
- Logic model analogy (great 3 minute video) http://www.youtube.com/watch?v=JFYQoHvNLQQ
- If you have not worked with Logic Models, refer to the W.K. Kellogg Foundation's Logic Model Development Guide. http://www.wkkf.org/resource-directory/resource/2006/02/wk-kellogg-foundation-logic-model-development-guide
- Another excellent source: University of Wisconsin Extension

  http://www.uwex.edu/ces/pande/evaluation/evallogicmodel.html

Examples

- Example of Quad Chart required by U.S. Army TACOM
- Examples of Logic Model: being required on U.S. Department of Education and other federal agency programs

Implementation of Lightweight Metallic Syntactic Foams and Hybrid Structures for Improved Performance and Survivability of U.S. Navy and Marine Corp Vehicles, UW-Milwaukee/Eck Industries/General Dynamics



Material	Normalized Absorbed Energy (<340 MPa)	Density (g/cm³)
Al-A206/Al_2O_3 Syntactic Foam	1	2.3
Duocel foam-12% Dense 6061-T6	0.1050	0.32
A206	0.0091	2.8
A5083-H343	0.0093	2.66
Ti6Al4V	0.0058	4.43
4140 Steel	0.0031	7.85

Technology Description:

- New Lightweight Metal Matrix Syntactic Foams and New Low Cost Method of Manufacture have been developed and will be implemented in vehicle components
- Technology Readiness Level (TRL) is currently 6 and will be TRL 9 at the end of Rapid Innovation Fund development

The "So What":

- The proposed project addresses Thrust Area 2: Developing, Using and Maintaining Advanced Materials.
- Lightweight, advanced syntactic foams (as shown in the picture at left) will be used with hybrid composites in vehicle floor plates and appliqué armor
- Reduced weight and volume enhance vehicle performance and survivability
- Low cost manufacturing methods reduces initial cost.
- NAVSEA / Development and Acquisition Cost

Project Objective and Scope:

- Design, Fabrication, Testing and Implementation of novel lightweight Blast/Ballistic Resistant Floor Protection Plates and Appliqué Armor

Key Deliverables:

- 24x24x2inch plates
- Technical Report including results of testing and characterization, qualification, introduction in Navy Vehicles

Key Subcontractors:

- General Dynamics, Eck Industries

Registered with System for Award Management (SAM)?: NO

Related SBIR or Other Government Contract: NONE

Proposed Funding: $3,000,000

Notional Project Schedule Milestones:

Activity	Year 1	Year 2	Year 3
Design Of Material and Component			
Prototype Fabrication & Testing			
Component Design Optimization, Testing, and Final Delivery			

Logic Model Example

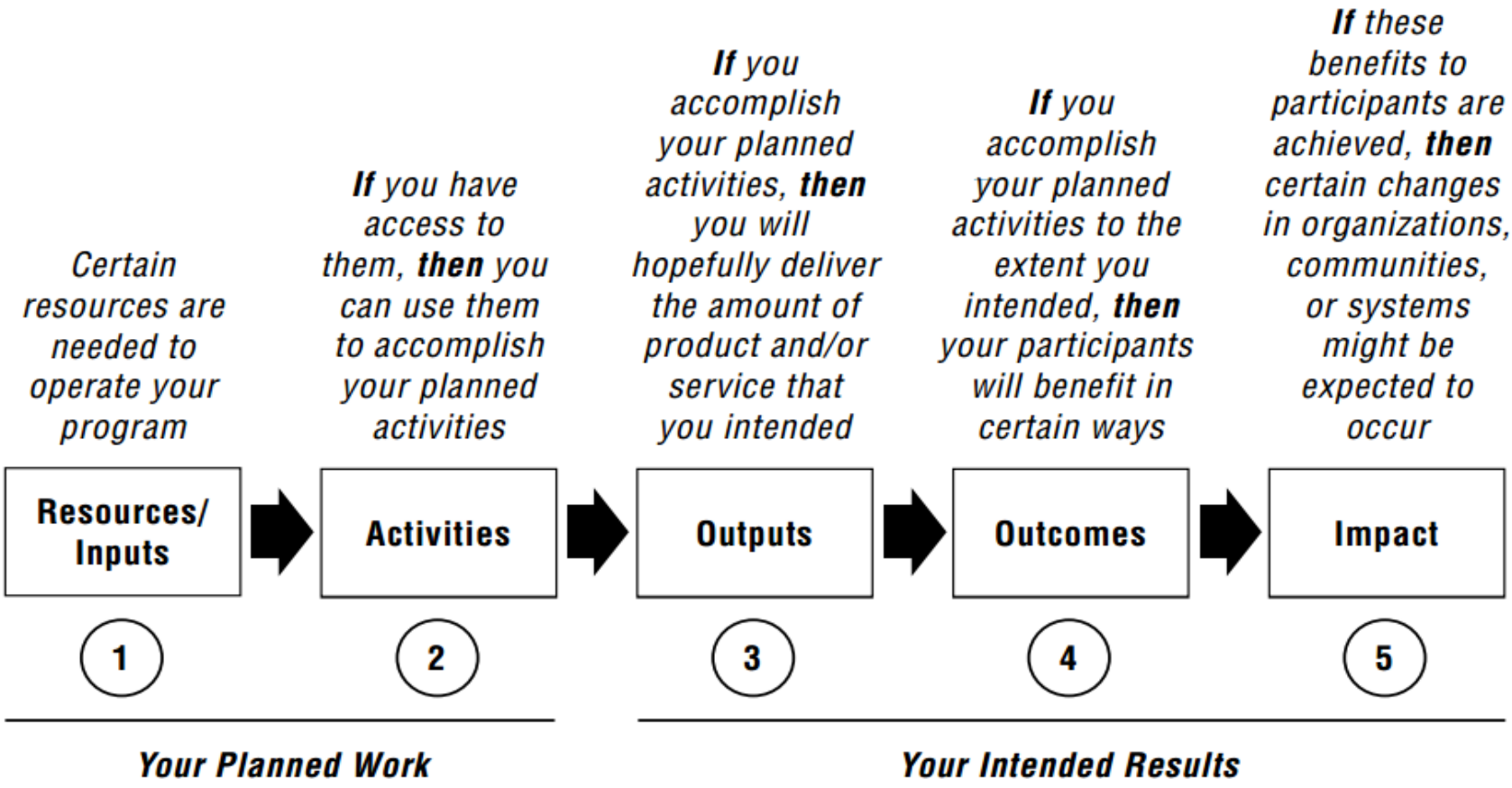
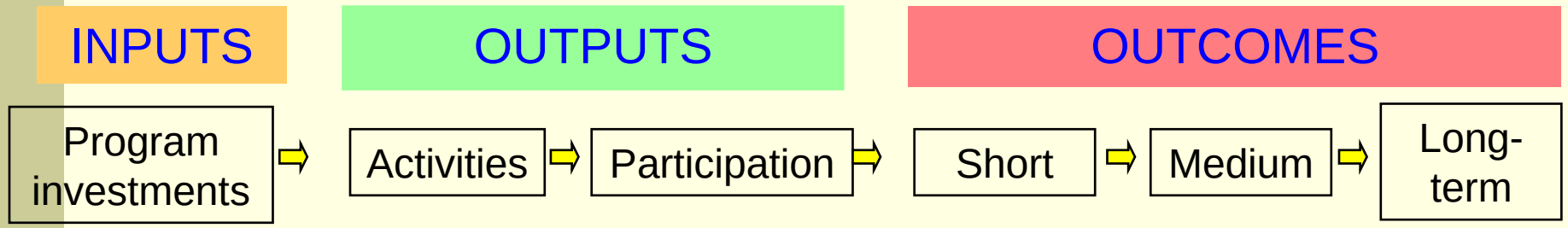


Figure 2. How to Read a Logic Model.

Logic Model Example: Basic



Implications for Research Development Professionals

- These short documents add a step to the proposal development process
- They can serve as an important planning and organizing tool
- They may be useful for internal competitions for limited submission proposals
- They need to be handled with care and taken seriously
- PIs may need to be educated about the role and value of these short but important documents

Thanks

For Questions and Follow-up

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