



Engineering World Health

EWH Design Competition

Guidelines for a Successful Design Submission

A written submission of the design is due by May 31. This submission will be evaluated by an expert panel of EWH Design Competition judges. The EWH Chapters sponsoring the top three placing Design Teams will be awarded cash prizes. The Design Team should have a functioning prototype at the time of final submission. The judging criteria are available at www.ewh.org, or by request via emailing chapters@ewh.org.

The design submission should contain the following sections:

1. Problem definition (1 page maximum)

Describe an engineering problem that has a feasible technological solution. Please explain the purpose and function of the proposed technology, including which medical condition(s) it can be used to treat and/or diagnose. A brief description of the target performance requirements of the technology may be appropriate.

2. Impact in developing world (1 page maximum)

Describe how your technical solution will benefit people in developing countries. Provide a brief description of any technology currently used to solve the defined problem. If there is an existing technology, please explain what advantages your proposed design will have (lower cost, increased portability, battery powered, more robust, etc.) over the existing solution.

3. Required performance specifications (1 page maximum)

List all relevant technical specifications that your technology must meet to effectively perform the function for which it was designed. These specifications must be justified with documented research and consideration of health care conditions in developing countries.

4. Implementation of prototype (2 page maximum)

Describe the functional prototype your Design Team designed and constructed to meet the required performance specifications outlined in the previous section. You should elaborate on the methods of construction and mode of operation of your prototype. You may include any drawings, schematics, figures, etc. in an appendix that will not count as part of your page limit. Do not include text in the appendix that goes beyond brief descriptive captions.

5. Proof of performance (2 page maximum)

Prove that your prototype meets the minimum required performance specifications. Include the results of validation tests and measurements of relevant aspects of the prototype's performance. Provide quantitative evidence that your prototype meets or exceeds the minimum performance specifications and provides a superior solution to that of existing designs.

6. Business plan for manufacture and distribution of the technology (3 page maximum)

Propose a method of manufacture and distribution of the technology. This should include detailed estimates of the costs of manufacture and distribution, as well as a plan for funding the technology. Issues to consider:

- Will there be a paying customer for the final product? If so, who will the customer be (developing world health care clinics, international charities/NGOs, developed world clinics in addition to the developing world clinics, etc.) and how much revenue can you expect to generate from sales of the final product?
- How will the technology be funded? Is the technology sustainable with sales, or does funding from an outside source need to be secured to manufacture the technology? Is there a startup investment necessary to get the technology to the point of sustainability? What options exist for funding the technology?
- How will the technology be manufactured? Will it be manufactured in developing world settings? Is there enough manufacturing capital locally to construct the technology? How would this option affect the materials or construction techniques used in manufacture, and what impact might developing world manufacturing have on the local economy? Will the technology be manufactured in developed nations and then distributed to developing countries?
- How will the technology be distributed? Will it be distributed by charities/NGOs to developing countries throughout the world? Will the technology be distributed throughout a particular country or region to address a local need? What partnerships may need to be formed with international organizations or with developing world governments and agencies to achieve effective distribution?
- What regulatory and intellectual property issues affect the technology? Will you seek a patent for the technology? Must your technology be cleared/approved by the FDA, CE, or any other international regulatory groups for it to be effectively implemented and accepted?