Genes in Space

Detailed Scoring Criteria

I. Have you identified an interesting question? (20 points)

- Question is relevant to space exploration
- Question is creative and original
- Demonstrates accurate understanding of problem
- Describes problem and relevance with an appropriate level of detail
- Compellingly written and shows nuance

II. Have you stated a clear and well-reasoned hypothesis? (20 points)

- Demonstrates understanding of prior work done in the field
- Hypothesis is creative and original
- Hypothesis is focused, can be tested by a single experiment
  *Note: multiple tools can be used within the context of a single experiment
- Clearly justifies hypothesis and objective
- Writing is clear, technical, and precise

III. Do you present a clear and actionable experimental plan? (15 points)

- Experimental plan is appropriately detailed (specifies variables, controls, groups, etc)
- Clearly conveys nature of data that will be collected
- Thoroughly describes possible outcomes
- Writing is clear, technical, and precise

IV. Does your experimental design make sensible and creative use of the Genes in Space toolkit? (15 points)

- Experiment incorporates PCR, BioBits® cell-free protein expression and/or P51™ fluorescence detection
- Rationale for using selected tools is clear
- Selected tool(s) are properly used and will yield data that address the research question
- Use of selected tool(s) is innovative
- Writing is clear, technical, and precise

V. Do you make a strong case for the benefits your work will bring to future generations of space travelers? (25 points)

- Conveys relevance of experimental results to human prosperity (on Earth or in space)
- Response would be easily understood by an audience of non-scientists

VI. Does your proposal inspire enthusiasm for your selected topic? (5 points)

- Writing is engaging and persuasive
- Writing conveys “big picture” meaning and value of space biology research