Genes in Space

Detailed Scoring Criteria

I. **Have you identified an important question or challenge related to space biology? (10 points)**
- Topic is meaningful to the field of space biology
- Question remains unaddressed or unsolved

II. **Have you clearly addressed why your experiment must occur aboard the International Space Station? (10 points)**
- Justification is sound
- Experiments that could be conducted solely under Earth conditions will not be considered

III. **Have you selected a space biology problem that can be explored using molecular biology methods and identified a molecular target for investigation? (10 points)**
- Hypothesis and experimental plan clearly identify a molecular target for investigation
- Target is relevant to the identified space biology problem

IV. **Have you stated a clear and well-reasoned hypothesis? (20 points)**
- Hypothesis demonstrates understanding of prior work done in the field
- Hypothesis is nuanced and original
- Hypothesis is focused and clearly related to the research question

V. **Have you presented a clear and actionable experimental plan? (20 points)**
- Experimental plan is appropriately detailed and specifies variables, samples, and controls
- Experimental plan clearly conveys the nature of the data that will be collected

VI. **Does your experimental design make sensible use of the Genes in Space Toolkit? (10 points)**
- Experiment incorporates PCR, and/or BioBits® cell-free protein expression, and/or P51™ fluorescence detection
- Rationale for using the selected tool(s) is accurate
- Selected tool(s) will yield data that address the research question

VII. **Does your proposal communicate your ideas clearly? (10 points)**
- Writing is precise
- Sufficient detail is included

VIII. **Does your proposal inspire enthusiasm for your selected topic? (10 points)**
- Writing is engaging and persuasive
- Proposal conveys “big picture” meaning and value of space biology research