Task 1 – Interface Definition:
From the middeck IDD, please assess the available power, mass and volume, as well as the possible / available means for heat rejection, for your single middeck locker experiment that you are designing.

Mass: _____________________________

Power: _____________________________

Volume: _____________________________

Heat Rejection options: _____________________________

Reference:
Middeck IDD:  http://www.unitedspacealliance.com/icd/mdkidd/contents.html
Shuttle Payload IDD  http://shuttlepayloads.jsc.nasa.gov/data/PayloadDocs/PayloadDocs.htm
Spacehab IDD  http://www.boeing.com/nosearch/sh_verification/

Task 2 – Microgravity Environment:
As a money-starved biologist unable to afford a real spaceflight mission, what are your options to conduct a microgravity biology experiment that simulates at least SOME aspects of microgravity. List options for simulation, and what aspect of the microgravity environment they simulate. At minimum, list one example each for cell biology, plant biology, human health, combustion research, materials science and fluid physics. Please list your reference (web site, book, article….)

<table>
<thead>
<tr>
<th>Sim. Technique</th>
<th>Aspect Simulated</th>
<th>Experiment Duration</th>
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</thead>
<tbody>
<tr>
<td>Cell Biology</td>
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<td>Plant Biology</td>
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<td>Materials Science</td>
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<td>Combustion</td>
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<td>Fluid Physics</td>
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Task 3 – Safety:
A hazard report attempts to a) describe a hazard, b) its cause, c) a hazard control, and d) a verification of the designed control.
Pick an example from everyday life (shower, espresso machine, bicycle pump / tire inflation, driving your car, refueling your car, mountain climbing, rock climbing,.. Walking your dog, playing with your cat,..) and:
a) list all applicable generic hazards associated with this activity/design/hardware (per NASA form 1230).
b) list one example of a unique hazard associated with this activity/design/hardware.

Use the PSRP documents with respect to content (title, description, control, verification), not format (i.e., don’t need to use the forms listed below under references).

Reference:
PSRP:  http://jsc-web-pub.jsc.nasa.gov/psrp/
Generic Hazards  http://jsc-web-pub.jsc.nasa.gov/psrp/docs/jscf1230.doc
Unique Hazard  http://jsc-web-pub.jsc.nasa.gov/psrp/docs/jf542b.doc