List all combinations of anticipated targets and beam conditions required to execute the experiment. (This list will form the primary basis for the Radiation Safety Assessment Document (RSAD) calculations that must be performed for each experiment.)

<table>
<thead>
<tr>
<th>Condition No.</th>
<th>Beam Energy (MeV)</th>
<th>Mean Beam Current (µA)</th>
<th>Polarization and Other Special Requirements (e.g., time structure)</th>
<th>Target Material (use multiple rows for complex targets — e.g., w/windows)</th>
<th>Material Thickness (mg/cm²)</th>
<th>Est. Beam-On Time for Cond. No. (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>3300</td>
<td>24</td>
<td>none</td>
<td>Al</td>
<td>246.9</td>
<td>7.7</td>
</tr>
<tr>
<td>1B</td>
<td>3300</td>
<td>24</td>
<td>none</td>
<td>3H</td>
<td>81.2</td>
<td>4.4</td>
</tr>
<tr>
<td>1C</td>
<td>3300</td>
<td>24</td>
<td>none</td>
<td>3He</td>
<td>133.2</td>
<td>3.3</td>
</tr>
<tr>
<td>2A</td>
<td>4400</td>
<td>24</td>
<td>none</td>
<td>Al</td>
<td>246.9</td>
<td>73.7</td>
</tr>
<tr>
<td>2B</td>
<td>4400</td>
<td>24</td>
<td>none</td>
<td>3H</td>
<td>81.2</td>
<td>48.4</td>
</tr>
<tr>
<td>2C</td>
<td>4400</td>
<td>24</td>
<td>none</td>
<td>3He</td>
<td>133.2</td>
<td>25.3</td>
</tr>
<tr>
<td>3A</td>
<td>5500</td>
<td>24</td>
<td>none</td>
<td>Al</td>
<td>246.9</td>
<td>165</td>
</tr>
<tr>
<td>3B</td>
<td>5500</td>
<td>24</td>
<td>none</td>
<td>3H</td>
<td>81.2</td>
<td>110</td>
</tr>
<tr>
<td>3C</td>
<td>5500</td>
<td>24</td>
<td>none</td>
<td>3He</td>
<td>133.2</td>
<td>55</td>
</tr>
<tr>
<td>4A</td>
<td>6600</td>
<td>24</td>
<td>none</td>
<td>Al</td>
<td>246.9</td>
<td>31.9</td>
</tr>
<tr>
<td>4B</td>
<td>6600</td>
<td>24</td>
<td>none</td>
<td>3H</td>
<td>81.2</td>
<td>19.8</td>
</tr>
<tr>
<td>4C</td>
<td>6600</td>
<td>24</td>
<td>none</td>
<td>3He</td>
<td>133.2</td>
<td>12.1</td>
</tr>
</tbody>
</table>

The beam energies, $E_{\text{Beam}}$, available are: $E_{\text{Beam}} = N \times E_{\text{Linac}}$ where $N = 1, 2, 3, 4,$ or $5$. $E_{\text{Linac}} = 800$ MeV, i.e., available $E_{\text{Beam}}$ are 800, 1600, 2400, 3200, and 4000 MeV. Other energies should be arranged with the Hall Leader before listing.
**BEAM REQUIREMENTS LIST**

JLab Proposal No.: _______________________________ Date: 6/24/10

Hall: _______ Anticipated Run Date: ___________________ PAC Approved Days: _____________

Spokesperson: Gerassimos Petratos

Hall Liaison: ________________________________

Phone: (330) 672-5408

E-mail: gpetrado@kent.edu

List all combinations of anticipated targets and beam conditions required to execute the experiment. (This list will form the primary basis for the Radiation Safety Assessment Document (RSAD) calculations that must be performed for each experiment.)

<table>
<thead>
<tr>
<th>Condition No.</th>
<th>Beam Energy (MeV)</th>
<th>Mean Beam Current (µA)</th>
<th>Polarization and Other Special Requirements (e.g., time structure)</th>
<th>Target Material (use multiple rows for complex targets — e.g., w/windows)</th>
<th>Material Thickness (mg/cm²)</th>
<th>Est. Beam-On Time for Cond. No. (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5A</td>
<td>7700</td>
<td>24</td>
<td>none</td>
<td>Al</td>
<td>246.9</td>
<td>13.2</td>
</tr>
<tr>
<td>5B</td>
<td>7700</td>
<td>24</td>
<td>none</td>
<td>3H</td>
<td>81.2</td>
<td>7.7</td>
</tr>
<tr>
<td>5C</td>
<td>7700</td>
<td>24</td>
<td>none</td>
<td>3He</td>
<td>133.2</td>
<td>5.5</td>
</tr>
<tr>
<td>6A</td>
<td>8800</td>
<td>24</td>
<td>none</td>
<td>Al</td>
<td>246.9</td>
<td>5.5</td>
</tr>
<tr>
<td>6B</td>
<td>8800</td>
<td>24</td>
<td>none</td>
<td>3H</td>
<td>81.2</td>
<td>3.3</td>
</tr>
<tr>
<td>6C</td>
<td>8800</td>
<td>24</td>
<td>none</td>
<td>3He</td>
<td>133.2</td>
<td>2.2</td>
</tr>
<tr>
<td>7A</td>
<td>11000</td>
<td>24</td>
<td>none</td>
<td>Al</td>
<td>246.9</td>
<td>698.5</td>
</tr>
<tr>
<td>7B</td>
<td>11000</td>
<td>24</td>
<td>none</td>
<td>2H</td>
<td>134.4</td>
<td>192.5</td>
</tr>
<tr>
<td>7C</td>
<td>11000</td>
<td>24</td>
<td>none</td>
<td>3H</td>
<td>81.2</td>
<td>330</td>
</tr>
<tr>
<td>7D</td>
<td>11000</td>
<td>24</td>
<td>none</td>
<td>3He</td>
<td>133.2</td>
<td>176</td>
</tr>
</tbody>
</table>

The beam energies, $E_{\text{Beam}}$, available are: $E_{\text{Beam}} = N \times E_{\text{Linac}}$ where $N = 1, 2, 3, 4, \text{ or } 5$. $E_{\text{Linac}} = 800$ MeV, i.e., available $E_{\text{Beam}}$ are 800, 1600, 2400, 3200, and 4000 MeV. Other energies should be arranged with the Hall Leader before listing.
## Hazard Identification Checklist

**JLab Proposal No.:**  
(For JLab U1 Liaison Office use only.)  
**Date:** 6/24/10

Check all items for which there is an anticipated need.

### Cryogenics
- Beamline magnets
- Analysis magnets
- Target type: 
- Flow rate: 
- Capacity: 

### Electrical Equipment
- Cryo/electrical devices
- Capacitor banks
- High voltage exposed equipment

### Radioactive/Hazardous Materials
List any radioactive or hazardous/toxic materials planned for use:
- 3H target

### Pressure Vessels
- Inside diameter
- Operating pressure
- Window material
- Window thickness

### Flammable Gas or Liquids
- Type: 
- Flow rate: 
- Capacity: 

### Other Target Materials
- Beryllium (Be)
- Lithium (Li)
- Mercury (Hg)
- Lead (Pb)
- Tungsten (W)
- Uranium (U)
- Other (list below)

### Special Target Materials
- * Helium (³He)
- Deuterium

### Drift Chambers
- Type: 
- Flow rate: 
- Capacity: 

### Other Target Materials
- Lifting devices
- Motion controllers
- Scaffolding or elevated platforms

### Vacuum Vessels
- Inside diameter
- Operating pressure
- Window material
- Window thickness

### Radioactive Sources
- Permanent installation
- Temporary use
- Type: 
- Strength: 

### Large Mech. Structure/System
- Type: 
- Wattage: 
- Class: 

### Lasers
- Type: 
- Wattage: 
- Class: 

### Installation:
- Permanent
- Temporary

### Use:
- Calibration
- Alignment

### Hazardous Materials
- Cyanide plating materials
- Scintillation oil (from)
- PCBs
- Methane
- TMAE
- TEA
- Photographic developers
- Other (list below)

### General
- Experiment Class:
  - Base Equipment
  - Temp. Mod. to Base Equip.
  - Permanent Mod. to Base Equipment
  - Major New Apparatus

Other: 

---

[Checklist details and options filled in]
List below significant resources — both equipment and human — that you are requesting from Jefferson Lab in support of mounting and executing the proposed experiment. Do not include items that will be routinely supplied to all running experiments such as the base equipment for the hall and technical support for routine operation, installation, and maintenance.

**Major Installations** *(either your equip. or new equip. requested from JLab)*

<table>
<thead>
<tr>
<th>Major Installations</th>
<th>Major Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Magnets:</td>
</tr>
<tr>
<td></td>
<td>Power Supplies:</td>
</tr>
<tr>
<td></td>
<td>Targets: 40 cm long, room temp, 2H, 3H and 3He targets</td>
</tr>
<tr>
<td></td>
<td>Detectors:</td>
</tr>
<tr>
<td></td>
<td>Electronics:</td>
</tr>
<tr>
<td></td>
<td>Computer Hardware:</td>
</tr>
<tr>
<td></td>
<td>Other:</td>
</tr>
</tbody>
</table>

**New Support Structures**

<table>
<thead>
<tr>
<th>New Support Structures</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Data Acquisition/Reduction**

<table>
<thead>
<tr>
<th>Data Acquisition/Reduction</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computing Resources:</td>
<td></td>
</tr>
<tr>
<td>New Software:</td>
<td></td>
</tr>
</tbody>
</table>

**Other:**

<table>
<thead>
<tr>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
Date: 6/24/10  
Exp. #: ____________

Offline Computing Requirements

Proposal Title:
Measurement of the F2n/F2p, d/u Ratios and A=3 EMC Effect in Deep Inelastic Electron Scattering Off the Tritium and Helium Mirror Nuclei

Spokesperson: Gerassimos Petratos  
Experimental Hall: A

Data:
Silo/Mass Storage (Tape):
Amount of Simulated Data Expected (TB): ________________________________
Amount of Raw Data Expected (TB): 0.6 ________________________________
Amount of Processed Data Expected (TB): ________________________________
Online Storage (Disk) Required (TB): ________________________________
Imported Data Expected from Offsite Locations (TB): ________________________________
Exported Data Expected to Offsite Locations (TB): ________________________________

Computing:
Simulation Requirements (SPEC CINT2000 hrs): ________________________________
Production (Replay, Analysis, Cooking) Requirements (SPEC CINT2000 hrs): ________

Other Requirements:
Please add any additional information that will be useful information for JLab’s Information Technology group regarding unique configurations or that may require additional resources and/or coordination. Please indicate if possible what fraction of these resources will be provided by collaborating institutions and how much is expected to be provided by JLab.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________