# User Proposal and Request for Beam Time for the NASA Space Radiation Laboratory (NSRL) or Tandem Van de Graaff Radiobiology Laboratory

**Proposal No:** E-24 **Date:** 10/16/14

**1. Proposal Type:**

- ☐ Animals
- ☐ Cells/Tissues (human or animal)
- ☐ Physics
- ☐ Other

- ☐ New Proposal
- ☒ Renewal
- ☐ Replacement Proposal replaces proposal no.:
- ☐ "Piggyback" Proposal (limited to one run only)

**2. Title of Experiment:** NASA Certification of Electronic Components for Space Missions

Funding Source: NASA/JSC

Grant Title & Number: N/A

Grant Start Date: Grant End Date:

*Dates must cover runs being requested

**3. Principal Investigator:** Dr. Patrick M. O'Neill

Department: Electronic Design and Manufacturing Branch / EV5

Institution: NASA Johnson Space Center

Mailing Address: 2101 NASA Parkway
Mail Code EV5, Building 16
Houston, Tx., 77058

Telephone: 281-483-5180 Fax: 281-483-8426 Email Address: patrick.m.oneill@nasa.gov

**4. BNL Account No.:**
(see guidelines, page 3)

**5. Beam Time Request Summary:**

Requested Facility and Run: NSRL Variable Depth Bragg Peak setup for run in Summer 2015, Fall 2015, Spring 2016

Requested Ions/Energies and Times:
*(please use Beam Time Calculation Table in enclosed Excel spreadsheet)*

For each campaign, we request the following:
Desire 8 hours of Gold ions at ~ 200 MeV/n (Booster),
8 hours of Xenon ions at ~ 180 MeV/n (Booster), and
8 hours of Iron ions at ~140 MeV/n (Booster) on contiguous or near contiguous days

**6. Signature:**
As Principal Investigator/Spokesperson for this proposal, I certify that everything in this proposal is accurate to the best of my knowledge and that my research team will abide by the rules and regulations of Brookhaven National Laboratory. I also certify that the work described in this proposal is not proprietary and upon completion will be published in the open literature.

**PI/Spokesperson Signature:** Brandon Reddell **Date:** 10/16/14

*Please sign and submit the entire completed application electronically to Ms. Leah Selva, nsrladmin@bnl.gov.*

**7. Detailed Beam Time Request:** ***Please use Att. 6 Beam Time Calculation Table for beam requests. Sequential beam requests cannot be completed on Att.6; please submit separate calculation table, see Notes of Att. 6 for details.***

**A. List equipment and materials to be provided by the beamline (items furnished by BNL):**

2 small ion chambers, degrader wheel, collimator and standard mounting apparatus

**B. List equipment and materials to be provided by the user group (items you will bring to BNL):**

Laptop computers, power supplies, circuit board with article (memory chip/microprocessor/etc.) to be tested and cables

**C. Indicate requirements for any special equipment or additional BNL facilities:**

None

**8. Personnel:** Provide names, citizenships, and contact information for all personnel who will participate in experiments at BNL (use additional sheets if necessary).

| Role | Name | Citizenship | Address | Telephone | Email |
|---|---|---|---|---|---|
| PI | Pat O'Neill | US | NASA JSC, Houston, Tx 77058 | 281-483-5050 | patrick.m.oneill@nasa.gov |
| Spokesperson | Brandon Reddell | US | NASA JSC, Houston, Tx 77058 | 281-483-5050 | brandon.d.reddell@nasa.gov |
| Coworker | Chuck Bailey | US | NASA JSC, Houston Tx 77058 | 281-244-5093 | charles.r.bailey@nasa.gov |
| Coworker | Kyson Nguywen | US | NASA JSC, Houston Tx 77058 | 281-244-1271 | kyson.v.nguyen@nasa.gov |
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**9. Required Approvals**

**A. Research Involving Animal Subjects:**

Will you use animal subjects in your experiments? ☒ No ☐ Yes Species:

No. of subjects for each run:

Home Institution IACUC approval status:
If approved, provide IACUC protocol no. and approval date; if not approved, provide IACUC protocol submission date.

☐ Not Approved Submission Date:

☐ Approved Protocol No. Approval Date:

BNL IACUC approval status:
If approved, provide IACUC protocol no. and approval date; if not approved, provide IACUC protocol submission date.

☐ Not Approved Submission Date:

☐ Approved Protocol No. Approval Date:

**B. Research Involving Cells or Tissues (human or animal-derived):**

Will you use cells or tissues in your experiments? ☒ No ☐ Yes

Cell line/strain or Tissue ID:

Do you have current mycoplasma-free certification from a certified testing laboratory? ☐ No ☐ Yes
Email Ms. Paula Bennett at bennett@bnl.gov at least one (1) month prior to your experiment.

**Does use of these cells/tissues require IRB approval (note: commercially-available cells/tissues are exempt)?** ☐ **No** ☐ **Yes**
If you marked **Yes**, complete the following items below:

Home Institution IRB Approval Status:
If approved, provide IRB Protocol no. and approval date; if not approved, provide IRB protocol submission date.

☐ Not Approved Submission Date:

☐ Approved Protocol No. Approval Date:

BNL IRB Approval Status:
If approved, provide IRB Protocol no. and approval date; if not approved, provide IRB protocol submission date.

☐ Not Approved Submission Date:

☐ Approved Protocol No. Approval Date:

**C. Research Involving Recombinant DNA:**

Will you use recombinant DNA in your experiments? ☒ No ☐ Yes

Type of recombinant DNA:

BNL Recombinant DNA Advisory Committee Status:
If approved, provide RAC Protocol no. and approval date; if not approved, provide RAC protocol submission date.

☐ Not Approved Submission Date:

☐ Approved Protocol No. Approval Date:

**D. Research Involving Hazardous or Radioactive Materials or Procedures:**
List all biohazards, chemical hazards (explosive, flammable, toxic, corrosive), and radioactive materials and procedures for using these materials in your experiments (radioactive materials do not include irradiated/activated beam line materials).

N/A

**10. Transportation of Experimental Items/Samples Away from BNL**

Will you take experimental items/samples away from BNL? ☐ No ☒ Yes
*All radioactive/hazardous material shipments must be arranged through the BNL Hazardous Materials Transportation Group, contact Mr. Bob Colichio (colichio@bnl.gov) for further information.*

**A. Identify/describe radioactive items/samples:**

If test articles become activated during the test and we cannot ship them back home immediately, we would like to have BNL close the boxes and ship them for us.

**B. Identify/describe hazardous items/samples:**

None

**C. Identify/describe biological items/samples and shipment method:**
Include any special handling requirements for TSA/Customs inspections (light sensitive, do not X-ray, etc.).

N/A

How will biological samples be transported away from BNL? ☐ Personal/Ground ☐ Personal/Air ☐ Contract Carrier

**11. Research Description:**

Provide the information requested below as a separate Word document or PDF and attach to this form. ANSWER ALL QEUESTIONS.

**A. Experimental Proposal:** Provide sufficient detail to justify your beam time request. Proposal is limited to three (3) pages maximum and must include the following information (if you submit your grant progress report for section 11.A.4, the three page proposal limit applies to the remaining sections):

1. Title of proposal (identify proposal as new, renewal, or replacement)
2. Project summary/overview
3. Background and significance
4. Progress report (for renewal proposals, you may submit your most recent funding agency grant progress report; for new proposals, include any supporting preliminary results). This report should include progress accomplished in prior runs, problems encountered and lessons learned, any deferrals, and responses to previous SACRR proposal review items.
5. List of three (3) publications (to assist the SACRR in its evaluation of previous work/experience and project feasibility).
6. Description of PI and team's previous accelerator experience (1 paragraph maximum).

**B. Beam Time Request:** Provide sufficient detail to justify the amount of beam time you are requesting. SACRR must be convinced that previously awarded beam time was efficiently and judiciously used, and that you will require the full amount of time for your current request. You must also justify the requested ion species. For this section, you must include:

1. Detailed experimental plan for all experiments to be conducted
2. Beam time calculations (see Att. 6 Beam Time Calculation Table. Sequential beam requests cannot be completed on this beam time calculation table; please submit separate calculation table, see Notes section of Att. 6 for details). Include the total time requested for all ions and energies in Beam Time Request Summary (located on page 1).
3. Other information that may be helpful in justifying your beam time request to SACRR (optional).