

User Proposal and Request for Beam Time

for the NASA Space Radiation Laboratory (NSRL)

or Tandem Van de Graaff Radiobiology Laboratory

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| Proposal No.: | |  | | | | | | | |
| Date: | |  | | | | | | | |
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| 1. Proposal Type: | |  | Animals |  | Cells/Tissues(Human/Animal) |  | Physics |  | Other |
|  |  |  |  |  |  |  |  |  |  |
| Regular Proposals: | |  | New proposal | | | | | | |
|  | Replacement proposal | | | Replaces proposal: | | |  |
|  | Renewal proposal | | | | | | |
|  | Request for deferral | | | | | | |
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| “Piggyback” Proposals (limited to one run only): | |  | New proposal | | | | | | |
|  | Replacement proposal | | | Replaces proposal: | | |  |
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| 2. Title of Experiment: | |  | | | | | | | |
| Funding source: | |  | | | | | | | |
| Grant title and number: | |  | | | | | | | |
| Grant start and end dates  Dates must cover runs being requested: | | Start: | |  | | End: | |  | |
|  | | | | | | | | | |
| 3. Principal Investigator: | |  | | | | | | | |
| Department: | |  | | | | | | | |
| Institution: | |  | | | | | | | |
| Mailing address: | |  | | | | | | | |
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| Telephone: | |  | | | Fax: | |  | | |
| Email: | |  | | | | | | | |
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| 4. BNL Account No.: | |  | | | | | (See guidelines, page 3) | | |
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| 5. Beam Time Request Summary | | | | | | | | | |
| Requested facility and run: | |  | | | | | | | |
| Requested ions/energies and times: | |  | | | | | | | |
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| **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: | | |  | | | | Date: |  | |
| *Please sign and submit this front page (hard copy) to Ms. Leah Selva, NSRL Administrator, Brookhaven National Laboratory, 50 Bell Avenue, Biology Dept., Bldg. 463, Upton, NY 11973-5000. In addition, please submit the entire completed application electronically to* [*nsrladmin@bnl.gov*](mailto:nsrladmin@bnl.gov)*.* | | | | | | | | | |

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| 7. Detailed Beam Time Request: Please see Att. 6, NSRL and Tandem Beam Information. | | | | | | | | | | |
| A. Beam time request (per campaign): | | | | | | | | | | |
| Year: |  |  | Campaign: | |  | Spring |  | Summer |  | Fall |
|  | | | | | | | | | | |
| Ion Species | Energy (MeV/amu) | Beam Time Requested1 (h) | Dose Rates Requested2 (cGy/min)  MIN MAX | | Doses Requested  (cGy or Gy) | | Beam Diameter Requested3 | | Beam Uniformity Required (+/– %) | |
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| Year: |  |  | Campaign: | |  | Spring |  | Summer |  | Fall |
|  | | | | | | | | | | |
| Ion Species | Energy (MeV/amu) | Beam Time Requested1 (h) | Dose Rates Requested2 (cGy/min)  MIN MAX | | Doses Requested  (cGy or Gy) | | Beam Diameter Requested3 | | Beam Uniformity Required (+/– %) | |
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| Year: |  |  | Campaign: | |  | Spring |  | Summer |  | Fall |
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| Ion Species | Energy (MeV/amu) | Beam Time Requested1 (h) | Dose Rates Requested2 (cGy/min)  MIN MAX | | Doses Requested  (cGy or Gy) | | Beam Diameter Requested3 | | Beam Uniformity Required (+/– %) | |
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| *Notes:*   1. *Enter totals for each ion/energy from the Beam Time Request Calculation Table (see Section 12).* 2. *Enter “N/A” if this is not an applicable requirement (i.e., any available dose rate can be used), otherwise enter a range of dose rates required for the experiment.* 3. *NSRL standard beam diameters are 20 cm x 20 cm (400 cm2) or 60 cm x 60 cm (3600 cm2), otherwise enter the desired beam diameter for the experiment. Please note that use of the 60 cm x 60 cm beam diameter or non-standard beam diameters requires an additional 2 hours for setup/dosimetry. Current Tandem beam diameter is 1.05 cm (0.87 cm2).* | | | | | | | | | | |
| B. List equipment and materials to be provided by the beamline (items furnished by BNL): | | | | | | | | | | |
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| C. List equipment and materials to be provided by the user group (items you will bring to BNL): | | | | | | | | | | |
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| D. Indicate requirements for any special equipment or additional BNL facilities: | | | | | | | | | | |
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| 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 |  |  |  | | | |  | |  | |
| Spokesperson |  |  |  | | | |  | |  | |
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| 9. Required Approvals | | | | | | | | | | |
| A. Research involving Animal Subjects | | | | | | | | | | |
| Will you use Animal Subjects in your experiments? | | | | |  | Yes |  | No |  | |
| Species: | |  | | | | | | | | |
| No. of Subjects for each run: | |  | | |  | | | | | |
| Home Institution IACUC Approval Status: | | | | |  | Approved |  | Not Approved | | |
| If approved, provide IACUC protocol no. and approval date; if not approved, provide IACUC protocol submission date: | | | | |  | | | | | |
| BNL IACUC Approval Status: | | | | |  | Approved |  | Not Approved | | |
| If approved, provide IACUC protocol no. and approval date; if not approved, provide IACUC protocol submission date: | | | | |  | | | | | |
|  | | | | | | | | | | |
| B. Research involving Cells or Tissues (Human or Animal-Derived) | | | | | | | | | | |
| Will you use Cell Cultures or Tissues in your experiments? | | | | |  | Yes |  | No |  | |
| Cell line/strain or Tissue ID: | |  | | | | | | | | |
| Do you have current mycoplasma-free certification from a certified testing laboratory? Email mycoplasma certificate to Ms. Paula Bennett at [bennett@bnl.gov](mailto:bennett@bnl.gov) at least one (1) month prior to your experiment. | | | | |  | Yes |  | No |  | |
| Does use of these cells/tissues require IRB approval?  (note commercially-available cells/tissues are exempt)  If you marked Yes, complete the following items below: | | | | |  | Yes |  | No |  | |
| Home Institution IRB Approval Status: | | | | |  | Approved |  | Not Approved | | |
| If approved, provide IRB protocol no. and approval date;  if not approved, provide IRB protocol submission date: | | | | |  | | | | | |
| BNL IRB Approval Status: | | | | |  | Approved |  | Not Approved | | |
| If approved, provide IRB protocol no. and approval date  if not approved, provide IRB protocol submission date: | | | | |  | | | | | |
|  | | | | | | | | | | |
| C. Research involving Recombinant DNA | | | | | | | | | | |
| Will you use recombinant DNA in your experiments? | | | | |  | Yes |  | No |  | |
| Type of recombinant DNA: | |  | | | | | | | | |
| BNL Recombinant DNA Advisory Committee Status: | | | | |  | Approved |  | Not Approved | | |
| If approved, provide RAC protocol no. and approval date;  if not approved, provide RAC protocol submission date: | | | | |  | | | | | |
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| 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). | | | | | | | | | | |
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| 10. Transportation of Experimental Items/Samples Away from BNL | | | | | | | | | | |
| Will you take experimental items/samples away from BNL? | | | | |  | Yes |  | No |  | |
| *All radioactive/hazardous material shipments must be arranged through the BNL Hazardous Materials Transportation Group, contact Mr. Bob Colichio (*[*colichio@bnl.gov*](mailto:colichio@bnl.gov)*) for further information.* | | | | | | | | | | |
| A. Identify/describe radioactive items/samples: | | | | | | | | | | |
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| B. Identify/describe hazardous items/samples: | | | | | | | | | | |
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| 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.). | | | | | | | | | | |
|  | | | | | | | | | | |
| 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 QUESTIONS. | | | | | | | | | | |
| 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 Section 12 for an example beam time calculation table). Include the total time requested for all ions and energies in Section 5, Beam Time Request Summary (located on page 1; times in Sections 5 and 12 must agree.). 3. Other information that may be helpful in justifying your beam time request to SACRR (optional) | | | | | | | | | | |
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| 12. Example Beam Time Request Calculation Table: The following table can be used to calculate the total beam time request. Note the following items related to calculating the total beam time request:   1. Allow 30 min for experimental setup and beam tuning/dosimetry. 2. Allow 3 min for target room (cave) access per sample change. 3. Standard NSRL dose rates range from 0.1–1.0 Gy/min. Consult the NSRL physicists if dose-rates outside this range are desired. Report doses in either Gy or cGy, dose rates in Gy/min or cGy/min. 4. Calculations must account for the dose, dose rate, the total number of samples to be irradiated, and the additional times noted above. (Incomplete/inaccurate beam time calculations may require re-submission of your beam time proposal in the following review period if SACRR reviewers can not properly account for your total requested time.) 5. Include the total time requested for all ions and energies in Section 5, Beam Time Request Summary (located on page 1; times in Sections 5 and 12 must agree.). | | | | | | | | | | |

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| Item | Dose (cGy) | Dose Rate (cGy/min) | Irradiation Time (min) | Target Room Access (min) | Access + Irradiation Time (min) | No. of irradiations | Total time (min) |
| Setup/  Dosimetry | *You must include 30 min for setup and dosimetry for each ion species*  *(energy changes for the same ion are included in the 30 minute allotment).* | | | | | | 30 for Fe-56  30 for O-16 |
| 600 MeV/n Fe-56 | 10  20  50  100 | 20 | 0.5  1  2.5  5 | 3  3  3  3 | 3.5  4  5.5  8 | 4  4  4  2 | 14  16  22  16 |
| 600 MeV/n O-16 | 20  40  80  120 | 40 | 0.5  1  2  3 | 3  3  3  3 | 3.5  4  5  6 | 2  3  3  2 | 7  12  15  12 |
| Ion/Energy Choice C |  |  |  |  |  |  |  |
| … |  |  |  |  |  |  |  |
| TOTAL | | | | | | | 174 min |