



**ORPHAN DISEASE CENTER  
BLOOM SYNDROME ASSOCIATION  
2024 GRANT PROGRAM**

The 2<sup>nd</sup> Bloom Syndrome Grant Program will provide one and two-year grants to support research related to Bloom Syndrome. Up to \$500,000 may be awarded across all funded grants.

## **Background**

Bloom syndrome (BSyn) is an ultra-rare multi system disorder that substantially increases the risk of developing cancer at an early age. While only about ~300 cases have been reported to date, BSyn is part of a group of rare DNA damage response and repair disorders. The gene BLM, located at 15q26.1, encodes for the BLM protein, a RecQ DNA Helicase family protein. A recurrent mutation known as BLMash, which is common among Ashkenazi Jews, is responsible for approximately 30% of BSyn cases, while the remaining 70% of cases are caused by multiple other mutations with full or partial loss of function and a range of resulting phenotypes.

BLM pathogenic variants that cause Bloom syndrome result in DNA repair defects which in turn result in chromosome breakages and rearrangements. The abnormal DNA repair is responsible for the increased risk for cancer. Greater knowledge of its mechanisms will be not only beneficial for patients with Bloom syndrome but may also translate into clinical innovations for cancer therapy in general.

We are seeking grant applications to increase the rate of discovery of the mechanisms of BSyn and, importantly, lead to treatments and/or cures for BSyn. While the RFA is intentionally broad in scope, priority will be given to grants that cover the following areas:

- 1) **Improve knowledge of Bloom syndrome tumor biology**, including, but not limited to tumor models, tumor sequencing to determine a tumor signature for BSyn, molecular surveillance for tumors, as well as a centralized registry of validated tissue (coordination of sampling, storing and distribution of samples). **One 2-year grant for up to \$150,000 (total cost).**
- 2) **Literature review, critical assessment & study proposal**, regarding:
  - i. The impact of sunlight and radiation in BSyn.
  - ii. Safety & efficacy of cancer treatments in BSyn including modalities, regimes and dosages.
  - iii. Utility of existing data sets as a natural history study and/or control arm for future clinical trials.
  - iv. Gene therapy for BSyn.
  - v. Why and how BSyn can be a model for cancer development in general.

These projects will involve a critical review of currently available information and outline proposed studies that could be performed to better understand the topic(s) in question. **Up to four one-year grants for up to \$50,000 each (total cost).**

- 3) **Global cancer surveillance & novel cancer research in Bloom Syndrome**, including, but not limited to, establishment of BSyn tumor organoids, collection and analyses of patient-derived blood samples, microbiome studies, and hematopoietic stem cell health and dysfunction studies. **One 2-year grant for up to \$150,000 (total cost).**

## Eligibility

**Non-profits.** All individuals holding a faculty-level appointment at an academic institution or a senior position at a non-profit institution or foundation are eligible to respond to this RFA.

**Commercial entities.** We will consider applications from commercial entities if a principal investigator of appropriate experience is identified.

Intellectual property created as a result of this funding will be assigned to the home institution of the inventors who presumably would be employees of the company. We expect that grants provided to commercial entities be matched dollar for dollar. Note that the budget should cover the entire scope of work and should include the Bloom Syndrome Association award and the company's match. We will need assurance in the grant contract that the company will diligently develop the project.

## Letter of Interest Instructions

All applicants must first submit a Letter of Interest (LOI) to be reviewed for consideration of a full application submission. Please visit our website to submit your LOI, which can also be found [here](#).

Format for the 1-page LOI:

- Project Title
- PI and Co-PIs, and associated institutions or organizations
- Overall goal of the project
- Why application is responsive to the RFA: please note that the applicant will not be invited to submit a full application if relevance to the RFA is not clearly described in the LOI
- Brief background
- Specific Aims provided as a brief list
- Specify the area to be studied, a high-level project timeline and amount to be requested
- Requested resources should be in terms of up to 2 years of funding and total award amount – up to \$50,000 or \$150,000 (including direct and indirect costs). It is strongly preferred that applicant institutions waive indirect costs allowing the total amount to go towards research, but indirect costs up to a maximum of 10% could be accepted in exceptional cases.

**LOI Due Date:** LOI document is to be uploaded no later than 5pm (ET) on **Friday, September 27, 2024**, via ONLINE FORM.

Applicants will be notified via email with a decision regarding their LOI, which, if successful, will invite the applicant to submit a full application.

**Full Application Instructions and Review Procedure**  
**NOTE: Full Application is by Invitation only after review of LOI**

Full Proposal Due Date: **Friday, November 15, 2024**, no later than 5pm (ET). Full application documents are to be uploaded on our [WEBSITE](#)

**FORMAT for documents:**

*Font and Page Margins:* Use Arial typeface, a black font color, and a font size of 11 points. A symbol font may be used to insert Greek letters or special characters. Use 0.5-inch margins (top, bottom, left, and right) for all pages, including continuation pages. Print must be clear and legible; all text should be single-spaced.

*Header:* There should be a header at the top right on all pages of the PDF indicating the full name of the PI (e.g., **PI: Smith, John D.**).

For your convenience, a continuation page template is included at the end of the application document.

*File names:* ALL files to be uploaded should start with the LAST NAME of the PI followed by the brief name of the document. Examples: SMITH CV, SMITH Cover Page, SMITH Budget. **If files are not labeled properly, you will be asked to resubmit the PDFs before your application can be considered.**

**CONTENT to be uploaded:**

**Cover Page/Checklist/Institutional Signature Page [PDF].** An application template will be provided.

**Biosketch/CV, with key personnel supporting the project (5 pages max). [PDF]**

The PI must include accurate and complete information regarding all other sources of grant support (current and pending), including title, abstract, annual and total amount of grant, inclusive funding period, and percent effort. PI should add a section listing key personnel working on the project.

**Detailed Budget and Justification. [combined into one PDF]**

Complete Excel budget sheet (to be provided). Describe justifications in a Word document including all subcontracts to co-investigators.

Proposed funding period: February 1, 2025 – January 31, 2026 or 2027

Awarded amounts will not exceed Award Total

### Allowable direct costs

- Salary for PI
- Salary/stipend and related benefits for graduate student/postdoctoral fellow/technical support
- Travel (up to \$1500)
- Laboratory supplies and other research expenses

### Unallowable costs

- Consultant costs
- Tuition
- Professional membership dues
- Equipment >\$5,000
- General office supplies, institutional administrative charges (e.g., telephone, other electronic communication, IT network, etc.)
- Pre-award charges
- Any other expenses not directly related to the project

### **Research Plan** (5 pages max) and **Bibliography** (1 page max) **[combined into one PDF]**

Include the following sections: Specific Aims, Background and Significance, Preliminary Studies/Data, Research Design and Methods. Research plan should address the following questions: 1) Do you require access to reagents, animal models, patient blood samples, IRB/ethical board approvals, and/or equipment necessary to complete work? If so, please describe your plan to gain access within the time-frame of this grant period. 2) Have you identified qualified personnel to complete this project within the grant period? If not, please provide your plan to do so. Text citations should use a numbered format. Include all author names in the reference list.

### **Appendix [combined into one PDF]**

Limited to 5 pages of supplemental information pertaining to proposal or preliminary data only; a maximum of 3 relevant reprints are also acceptable. Include IRB and/or IACUC approval letters if relevant.

### **Project Disclosures and No Cost Extensions (NCE):**

- NCEs will be granted at the discretion of the Bloom Syndrome Association.
- Awardees will be limited to 1 NCE request for their award.
- Maximum NCE time awarded will be 6 months.
- NCEs will be granted after a formal request prior to the NCE deadline with adequate justification.
- If granted an NCE, you are still required to submit an interim scientific report 6 months into the duration of the original award period, regardless of your new project end date.

☐ In your letter of interest, you will be required to certify that you have identified qualified personnel to complete this project within the grant period **PRIOR** to the start date of the award. If you have not, you will be required to provide your plan to engage said personnel. Only under extenuating circumstances will personnel issues be considered for NCE requests.

☐ In your letter of interest, you will also be required to state whether or not you require access to reagents, cell lines, animal models, IRB/ethical board approvals, and/or equipment necessary to complete your work. If so, you will be required to describe your plan to gain access within the time-frame of this grant period.

**Fund Disbursement:**

Funds will be issued through a cost reimbursement mechanism executed by the Bloom Syndrome Association. Details of invoicing schedules and reporting requirements will be made available upon award. For additional information, please contact Deborah Requesens at [dregues@upenn.edu](mailto:dregues@upenn.edu).