



QUEST FOR CURES RESEARCH
PROGRAM
GUIDELINES & INSTRUCTIONS

FOR

NEW
LETTER OF INTENT
&
FULL APPLICATION

February 8, 2013

“QUEST FOR CURES”

The Leukemia & Lymphoma Society (LLS) is proud to announce The Quest For Cures (QFC), a new series of Request for Proposals (RFPs) to identify and develop safer, more effective treatment paradigms for patients with hematological malignancies. LLS has formed a partnership with Celgene, to create the first of such RFPs that will build the foundation of this new LLS initiative. This initiative will identify and fund priority research areas, with support from biotech and pharmaceutical partners in order to address significant unmet medical needs. The near-term goal of this program is to advance the scientific and medical understanding of the various hematological malignancies.

The Leukemia & Lymphoma Society (LLS) is the world's largest voluntary health agency dedicated to blood cancer. The LLS mission: Cure leukemia, lymphoma, Hodgkin's disease and myeloma, and improve the quality of life of patients and their families. LLS funds lifesaving blood cancer research around the world and provides free information and support services to patients and their families.

Celgene is a global biopharmaceutical company committed to improving the lives of patients' worldwide by delivering innovative and life-changing drugs for our patients. With more than 300 clinical trials, Celgene has focused on delivering novel therapies for patients with incurable hematological malignancies, including multiple myeloma, myelodysplastic syndromes, chronic lymphocyte leukemia (CLL), non-Hodgkin's lymphoma (NHL), and myelofibrosis.

Description of The Awards:

The “Quest For CURES” research topics are aimed to gain a better understanding of the underlying causes leading to failure of current treatments and to identify novel therapeutic targets and ultimately new treatments. **LLS and Celgene RFP topics available for funding with this initial RFP are the following:**

- 1. Novel approaches for measuring and monitoring clonal heterogeneity in the clinical setting at both the genomic and epigenetic levels and assessing its contribution to response or resistance to therapy. Proposal topics of interest under this general area include but are not limited to the following:**
 - a. Studies to define the proportions of genetically unique clones that have relevant mutations that can potentially drive resistance, either directly or by contributing to epigenetic plasticity
 - b. Models in which to study the impact of targeting epigenetic modifying enzymes or other molecular targets on the development and evolution of clonal heterogeneity

- 2. New molecular stratification mechanisms to identify key subsets of patients with B cell malignancies; application of these tools should be tractable to prospectively identify patients predicted to have poor outcomes with current standard therapies, aiming to direct these patients to novel therapeutic interventions that specifically address the identified cause(s) of treatment failure. Proposal topics of interest under this general area include but are not limited to the following:**
 - a. Clinically tractable approaches to prospectively identify previously untreated DLBCL patients who are unlikely to achieve complete remission or who will have remission duration of less than a year following R-CHOP therapy. The approach should have potential for substantially greater sensitivity and specificity than the IPI or IHC based cell of origin methods and should additionally point to novel therapeutic targets.

- 3. Enhancing the understanding of the role of the microenvironment in initiation and maintenance of hematologic malignancies with emphasis on the mechanisms by which the elements of the microenvironment contribute to chemoresistance. Proposal topics of interest under this general area include but are not limited to the following:**
 - a. Development of *in vitro*, 3-dimensional co-culture systems using primary and/or immortalized cell lines that recapitulate cell:cell interactions in the lymph node or bone marrow microenvironment. Proposals should describe how the superiority of these systems over currently available models would be demonstrated in terms of predicting sensitivity or resistance of leukemia or lymphoma cells to treatment.
 - b. Novel methods for utilizing clinical specimens to study the contributions of the lymph node and/or bone marrow microenvironments to response or resistance.

This RFP represents a new LLS research grant paradigm; QFC projects should, if successful, have a measurable impact on the diagnosis or treatment of patients with hematologic malignancies over the next 5 to 10 years. Proposals must include specific timelines, milestones and deliverables that researchers believe are achievable with their proposed funding. The range of funding available is from \$200,000 to \$400,000 annually, for research to be completed in a period of 2 years.

Additional funding, for projects that have demonstrated exceptional progress in the initial 2 years may be available; subject to review by its company partners. Additional funding is not guaranteed for any of the projects, but is contingent on the achievement of the project goals. The LLS Research Department staff will work with researchers to monitor progress and provide insight and expertise to each project.

Both Celgene and LLS are committed to supporting early stage, foundational research as well as new therapy development. Researchers and institutions should note that Celgene would consider each project, as a project the company would potentially like to further develop as a potential therapeutic or diagnostic for patients.

Special Considerations for Grantees and Their Institutions:

In addition to LLS's standard terms and conditions for academic grant awards, QFC also includes the following requirements. In partnership with Celgene and their funding, academic institutions and researchers will have to agree to provide Celgene with first rights to negotiate for intellectual property deriving from or reduced to practice during each project. Should Celgene choose to negotiate for rights to IP, Celgene shall have an exclusive period for this negotiation. If an agreement is not reached the Institution and researcher may not enter into an agreement with terms any less favorable than what was last offered by Celgene for a certain period of time. Please inquire with LLS for disclosure of those time periods. Also, if after said period of time, the Institution has not entered into another agreement, Celgene shall have the right to elect to enter into another exclusive dealing period. During the period of the grant and the Periods when Celgene exercises its rights the institution is prevented from disclosing intellectual property rights outside normal activity or enter into negotiations with a third party. These specified periods for negotiation will be spelled out in the contract and available for review during the application process. **Each applicant to the QFC is required to have his or her institution certify agreement with the IP terms and Celgene Rights at the time of application submission.** For questions regarding this policy, please contact Allison Formal VP, Research Business Development at allison.formal@lls.org or at 914-282-2753.

WHO CAN APPLY

General Eligibility Criteria

Citizenship and Degree - Applicants (principal investigator) must hold an M.D., Ph.D., or equivalent degree, and work in domestic or foreign non-profit organizations, such as universities, colleges, hospitals or other academic laboratories. Applications may involve multiple institutions however, the applicant (principal investigator) should have an independent research or academic position and his/her academic institution will be responsible for signing off on all terms of the QFC grant agreement. The applicant need not be a U.S. citizen, and there are no restrictions on applicant age, race, gender or creed. Applications from non-academic facilities and the National Institute of Health are not eligible. An applicant may only submit one application per RFP cycle in the QFC.

LEADERSHIP AND STAFFING - The application will require one principal investigator who is responsible for the preparation and submission of the proposal including budget, the conduct of the research programs and adherence with all stipulations made by LLS in this document, the LLS [Policies & Procedures](#) document, and in the grant contract if funded. Modifications to leadership and staffing are subject to the *Relocation or Transfer* and *Interruption, Abandonment or Leave of Absence* section of LLS's [Policies & Procedures](#) document.

APPLICATION PROCESS AND DEADLINES

The applicant and Sponsoring Institution must register independently with the proposal CENTRAL site in order for applicant to apply (*see Instructions / General / Using proposal CENTRAL*). Timelines and deadlines for the application process are shown below.

LETTERS OF INTENT (LOI) - Each applicant must submit an LOI by June 3, 2013 at 3:00 PM, ET via proposal CENTRAL website. LOIs will include a brief abstract describing the overall proposal, specific aims and projected milestones. LOIs will be reviewed for responsiveness to the RFP topics and approved/rejected by LLS shortly after the time of submission. Once the LOI has been approved, the Full Application will be available to the applicant on proposal CENTRAL for submission by July 15th, 2013.

FULL APPLICATION - Full applications will only be accepted via proposal CENTRAL. The submission deadlines will be strictly enforced. Please note that all times are Eastern Standard Time (EST). If any date falls on a weekend or a U.S. holiday, the deadline becomes the following business day.

There will be two review and funding cycles. The timeline for this initial cycle (Cycle 1) is detailed below. Applicants that do not receive funding during the first review cycle are **ONLY** eligible to re-apply with the same/similar proposal for the second review cycle by invitation. All applicants are welcome to submit entirely new proposals.

Review Cycle 1	
Call for Proposals	February 2013
Letter of Intent Deadline	June 3, 2013, 3:00, PM, ET
Full Application Deadline	July 15, 2013, 3:00, PM ET
Scientific Peer Review Committee	September 2013
Notification of Awards	October 2013
Anticipated Funding Start Date	December 2013

The topics for the second review cycle have not yet been determined. The application process for the second review cycle will begin in the summer 2013. There will be a separate announcement containing the topics and application deadlines for cycle 2.

REVIEW PROCESS OF FULL APPLICATIONS

Full Applications will be reviewed after the July 15th submission deadline (Cycle 1) by a diverse peer review panel. Once ranked, the priority score and funding recommendations from the peer review panel will be presented to the Joint Steering Committee (LLS Research Staff and Celgene Representatives) for final determination of awardees.

Any applicant (PI) selected for funding will be notified within 45 days of the funding decision. **Funding decisions are relayed by email only and are not available by telephone.** All priority scores are confidential and are only available to LLS's Joint Steering Committee, LLS's Mission Oversight Committee, and administrative personnel only. **Written critiques of the application are not formally provided to an applicant.**

REVIEW CRITERIA

An application will be judged on the following criteria:

- The probability of a significant advancement in the scientific and medical understanding of the hematological malignances
- The conceptual basis upon which the proposal rests
- A specific timeline with clearly articulated milestones and deliverables
- The novelty of the concept
- The feasibility of the research strategy
- Thoughtful and clear presentation
- The overall plan for bringing the research findings to clinical application
- Experience, background, and qualifications of investigators
- Adequacy of resources and environment (facilities, patient population, data management, and data analysis)
- Adequacy of provisions for protection of human subjects if applicable

For additional questions regarding LLS grant programs, eligibility and application processes, Please contact Sammy Hattar, Director of Research Administration: Sammy.Hattar@lls.org Or (914) 821-8290.

Table 1: Maximum QFC Award Duration & Value

***Please note: The QFC award amount you are given will reflect the amount you request in the budget section of your application. Any requests to increase funding must be in writing to LLS and are subject to the availability of funds.**

Duration	<u>Maximum Annual Direct Costs</u>	<u>Maximum Annual Indirect Costs</u>	<u>Maximum Total Costs</u>	<u>Maximum 2 Years</u>
2 yrs	\$360,036	\$39,964	\$400,000	\$800,000

INSTRUCTIONS

GENERAL

This section contains instructions for the submission of a LOI to the Quest for Cures Research program. When completing a LOI, please keep the following in mind:

Using proposalCENTRAL

LLS uses [proposalCENTRAL](https://ProposalCENTRAL.altum.com) (<https://ProposalCENTRAL.altum.com>) for electronic submission of LOIs (and Full Applications). LLS will **not accept fax or hard copy submissions**.

Registration

Registration of Applicant (Principal Investigator) and Sponsoring Institution is required in order to submit a LOI.

- Applicant (Principal Director):
It is the responsibility of the Applicant (Principal Investigator) to register with proposalCENTRAL. Once registered, the Applicant (Principal Investigator) should complete the Professional Profile section (*see Professional Profile below*). Applicant (Principal Investigator) can reference tutorials provided on the proposalCENTRAL website such as: “*How to register as a proposalCENTRAL User*”, “*How to create an application using proposalCENTRAL*”.
- Sponsoring Institution:
It is the responsibility of institution officials (i.e. Grants and Contracts Officials) to register the Sponsoring Institution. The information provided by the Sponsoring Institution is important for Applicant (Principal Investigator) eligibility verification and will automatically populate sections of the LOI (and Full Application). Sponsoring Institution officials can reference tutorials provided on the proposalCENTRAL website such as “*How to register your institution with proposalCENTRAL*”.

Professional Profile

It is imperative that the Applicant (Principal Investigator) carefully completes the Professional Profile section, once registered. Much of the information from this Profile will automatically populate sections of the LOI (and Full Application). Please keep the following in mind when completing the Profile:

- The Profile should be created with reference to the institution at which the Applicant (Principal Investigator) will perform the research, regardless of their institutional residence at the date of submission.
- The Applicant (Principal Investigator) must indicate the Sponsoring Institution. If the Applicant’s (Principal Investigator) Sponsoring Institution is not provided in the drop down menu, the Applicant (Principal Investigator) should contact their institute officials (i.e. Grants and Contract Officials) and request institutional registration.

Data Entry

An Applicant (Principal Investigator) is not required to complete the online LOI (or Full Application) in one sitting. The LOI may be accessed and changed multiple times as needed prior to the submission

deadlines. However, **neither the LOI nor Full Application can be changed once the deadline has passed or applications have been finally submitted.** Moreover, some fields may not be modified in the Full Application following submission of the LOI (*see Instructions/Letter of Intent/Changes*).

Assistance with Applications

Each Applicant (Principal Investigator) is strongly encouraged to first read the Guidelines & Instructions as well as the Policies & Procedures document before asking for further assistance:

Contacting proposalCENTRAL

The Applicant (Principal Investigator) should address questions regarding the guidelines, requirements, instructions and assistance to:

*Customer Service
8:30am - 5:00pm Eastern Standard Time
Available Monday through Friday
Telephone (toll-free): (800) 875-2562 x227
or Direct dial: (301) 916-4557 x227
Email: pcsupport@altum.com*

The Applicant (Principal Investigator) should not contact local chapters or any other department within LLS regarding technical assistance with grant applications.

Contacting LLS

All questions concerning eligibility that are not clarified in this document should be addressed to:

*Director of Research Administration
The Leukemia & Lymphoma Society
1311 Mamaroneck Avenue, Suite 310
White Plains, New York 10605
Telephone: (914) 821-8290/ 8301
Fax: (914) 821-3301
Email: researchprograms@lls.org*

The Applicant (Principal Investigator) should not contact the local chapters or any other department within LLS regarding eligibility.

Requirements

The following are some additional requirements that the Applicant (Principal Investigator) needs to consider while completing the LOI (and Full Application).

Relevance

The proposed research should be early stage clinical research in leukemia, lymphoma and myeloma that is intended to develop innovative approaches to treatment, diagnosis, or prevention. Projects currently funded by LLS can be viewed on www.lls.org under the Grants in Force section.

Forms and Format

Templates/forms are provided for the Applicant (Principal Investigator) on the proposalCENTRAL website. Failure to use provided templates/forms may result in the disqualification of the application. All information must be typed in English. Some information will be captured when Applicant (Principal Investigator) populates fields on the proposalCENTRAL website. Other information will also be captured using provided templates/forms. Fields marked with an asterisk are required. All documents must use single-spaced text and one of the following fonts: Arial 11 pt or Times New Roman 12 pt. The Applicant's (Principal Investigator's) name should be typed in the upper right corner of each page. Care should be taken to ensure all documents and fields are accurately completed and use commonly accepted grammar and punctuation. Page limitations must be observed, as described below.

Compliance

The Applicant (Principal Investigator) must carefully follow the [Guidelines & Instructions](#) and [Policies & Procedures](#) or risk the proposal being disqualified.

LETTER OF INTENT (LOI)

The LOI was previously referred to as the Preliminary Application in LLS's research grant program materials. Each Applicant (Principal Investigator) must submit an LOI by **June 3 at 3:00pm EST** via the proposalCENTRAL website, or the following business day if this date falls on a weekend or a U.S. holiday (*see Instructions / General / Using proposalCENTRAL*). All information required of the Applicant (Principal Investigator) for the LOI will be captured electronically on the proposalCENTRAL website. The LOI consists of several sections. The following provides instructions for completing each section. The Applicant (Principal Investigator) should carefully craft the information requested in the LOI as this information is automatically populated into the Full Application and is subject to the Changes clause listed below.

Completing the LOI

Title Page

Provide a concise title for the proposed Project, adhering to the stated character limitation. Once the LOI has been submitted, the Applicant (Principal Investigator) cannot change the title.

A title needs to be entered in order to continue to the next step of the application.

Download Templates & Instructions

This section provides a single location for the Applicant (Principal Investigator) to access and download all forms. The following is a list of the available documents:

Document Name	Document Type	Document Format
Guidelines & Instructions	Instructions	PDF

**no templates are needed at the LOI stage*

Enable Other Users to Access this Proposal

This section is not utilized in determination of the Applicant's (Principal Investigator's) eligibility or in administrative or programmatic review of applications. This screen allows the Applicant (Principal Investigator) to give other users in the Sponsoring Institution, access to the application to assist with completing sections of the LOI.

Applicant (Principal Investigator)

The majority of this section is populated from the Applicant (Principal Investigator) Professional Profile. If there are required fields that do not contain information, the Applicant (Principal Investigator) should click on the Edit Professional Profile button and complete the requested information.

Institution

This section is automatically populated from the Sponsoring Institution's Profile. The Applicant (Principal Investigator) cannot modify Sponsoring Institution Profiles. However, the Applicant (Principal Investigator) should confirm that the appropriate Sponsoring Institution is listed. If a Sponsoring Institution is not listed or listed incorrectly, the Applicant (Principal Investigator) should select the correct Sponsoring Institution from the list provided. If the Applicant's (Principal Investigator's) Sponsoring Institution is not on the provided list, the Applicant (Principal Investigator) should contact the Sponsoring Institution Official (i.e. Grants and Contracts Office) to request registration by the Sponsoring Institution.

Abstract

- General Abstract
In the space provided, the Applicant (Principal Investigator) must clearly state in lay language the proposed research in 1500 characters or less (including spaces). Once the LOI has been submitted the lay abstract may not change.
- Technical Abstract
Briefly describe the proposed research in 1500 characters or less using technical language. Once the LOI has been submitted, the technical abstract may not be changed.

AIMS and Projected Milestones

The investigator should include a list of specific aims for the project and the respective projected milestones for which the success of the project will be evaluated against for the duration of the award. Once the LOI has been submitted projected milestones may be changed for the full application but prior approval from LLS is required.

Validate

It is required that the Applicant (Principal Investigator) validate the LOI. The Validate function is a safety measure for the Applicant (Principal Investigator) to ensure that all required fields of information are completed. If required fields are empty, the system identifies and notifies the Applicant (Principal Investigator) of fields that require information.

Submit

The Applicant (Principal Investigator) can formally submit the LOI using this function. Signatures of the Applicant (Principal Investigator) and Sponsoring Institution are not required for submission of the LOI.

Changes

Information collected in the LOI will automatically populate fields in the Full Application. Once submitted, changes may only be made after receiving prior approval from the Director of Research Administration. The Applicant (Principal Investigator) should email LLS requesting any change and identifying the elements to be changed (at researchprograms@lls.org; see *Instructions / General / Assistance with Applications*). Any changes made without the prior approval of LLS may result in the disqualification of the application.

Submission of the LOI

LLS will not accept fax or hard copies of the LOI. Each Applicant (Principal Investigator) must submit a LOI by **June 3 at 3:00pm EST** via the proposalCENTRAL website or the following business day if this date falls on a weekend or a U.S. holiday. The Applicant (Principal Investigator) will receive an email from proposalCENTRAL stating that the LOI was successfully submitted.

Review of the LOI

LLS will process submitted LOIs. **Do not call or e-mail LLS** to determine whether the LOI has been received or when it will be processed. Once a LOI is submitted, the Applicant (Principal Investigator) will automatically be notified via email and will be given access to the Full Application. Additional notification will be sent via email to Applicant (Principal Investigator) upon LLS approving the LOI.

INSTRUCTIONS

FULL APPLICATION

Applicants (Principal Investigators) must submit a Full Application by **July 15 at 3:00pm EST via the proposalCentral website** or the following business day if this date falls on a weekend or a U.S. holiday. Some sections of the Full Application will be captured electronically on the proposalCentral website from the Applicant's (Principal Investigator's) profile or are captured during the LOI phase. Other vital pieces of information will be captured in documents that must be downloaded, completed and then uploaded by the Applicant (Principal Investigator). The Full Application consists of several sections and the following provides instructions for completing each section. ***The Applicant (Principal Investigator) may not modify any information provided in the submitted LOI as this information is subject to the Changes clause posted in the LOI and may result in disqualification of the application.***

Completing the Full Application

Title Page

- **Title:**
This information was provided during the LOI phase. Do not change this field. This is a required field.
- **Date of Previous Submission:**
Provide the date, if known, in the format of mm/dd/yyyy.

Download Templates & Instructions

This section provides a single location for the Applicant (Principal Investigator) to access and download all necessary templates/forms. The Applicant (Principal Investigator) should download a copy of each document and complete the information in the templates/forms provided. Please reference the *Proposal Attachments* section below for detailed guidance regarding the information to include. The following is a list of the available documents:

Table 4: Templates & Instructions for Full Application

Document Name	Document Type	Document Format
Guidelines & Instructions	Instructions	PDF
Signature Page and Abstracts	Template	Word Document
Project Information with Budget	Template	Word Document
Appendices Table of Contents	Template	Word Document
Terms Acceptance Signature Page	Template	PDF

- The Project Information with Budget Template includes five (5) fields as follows: a) the Project Description b) the Applicant’s (Principal Investigator’s) Biosketch c) Other Research Support, d) the Budget and e) the Budget Justification sections. For additional details on the upload attachments, see the Upload Attachments section.

Enable Other Users to Access this Proposal

This section allows the Applicant (Principal Investigator) to provide other users access to the proposal. Administrative assistants and collaborating institutions would be suitable “users” for accessing sections of the Full Application.

Applicant (Principal Investigator)

The information that the Applicant (Principal Investigator) provided in the Professional Profile will automatically populate this section. No additional information is required. Modification of this information from that provided in the LOI can result in the disqualification of the application.

Institution and Contacts

The first part of this section is automatically populated from the Sponsoring Institution’s Profile. The Applicant (Principal Investigator) cannot modify the Sponsoring Institution’s Profile. The remainder of this section is designed to capture contact information for various individuals that LLS may need to speak to if the Applicant (Principal Investigator) is selected for funding. The Applicant (Principal Investigator) should reference the “Instruction” button on the page for detailed directions. Below is a list of the required contacts. If the Applicant (Principal Investigator) does not know who the appropriate individual is, the Applicant (Principal Investigator) should contact the Sponsoring Institution’s Grants and Contracts officials (or equivalent) for guidance. (Although these officials were filled in at the LOI stage, they do need to be completed at the Full Application step too).

- **Signing Official:**
The Signing Official is the institutional representative responsible for signing and agreeing to the accuracy of the application and the terms of the award, if funded.
- **Fiscal Officer:**

The Fiscal Officer is the institutional representative responsible for the financial administration of externally funded research.

- **Research Administrator:**
The Research Administrator is the institutional representative responsible for the day-to-day administration of externally-funded research.
- **Communications Officer:**
The Communications (or Public Relations) Officer is the institutional representative responsible for communications of newsworthy accomplishments made by investigators at the Sponsoring Institution.

Key Personnel:

The Applicant (Principal Investigator) or staff can add a new contact(s) to the key personnel table at this point. Adding an investigator or researcher here will allow that contact to alter areas in the Full Application if they are permitted in the section labeled Enable Other Users to Access the Proposal.

Abstracts, Keywords, and Descriptors

The Scientific and Lay Abstracts will be populated from the LOI. Do not change these fields as it may result in the disqualification of your application.

- **Research Descriptors**
The descriptors provide information that assists in reviewer assignment and portfolio management.
- **Keywords:**
The Applicant (Principal Investigator) should choose from the following keywords that are most relevant to the proposed research. This information will assist LLS in reviewer assignment. While there is no limit on keyword selection, the Applicant (Principal Investigator) should only choose keywords that are specifically relevant to the application.
- Acetylation, histone deacetylases, histone deacetylase inhibitors
- antibody-based therapeutics, immunotoxins
- AML1, AML1-ETO, incl Runt domain, TEL-AML1
- Antisense oligodeoxynucleotides
- apoptosis, cell survival, incl Bcl-2, XIAP, caspases
- autophagy
- BCR-ABL
- C. elegans worm models
- CBF β
- carcinogenesis, incl. leukemogenesis, lymphomagenesis, oncogenes, tumor suppressors, cancer stem cells
- cell adhesion, motility, migration, cytokinesis, cytoskeleton, scaffold
- cell cycle, incl. cyclins, CDKs, checkpoints
- cell division, mitotic spindle, mitotic checkpoint
- cell growth, proliferation regulation
- cellular aging/senescence
- chemotherapy, incl. drug resistance, drug discovery
- chromosome biology, incl. segregation, centromeres, telomeres, chromosome translocations, karyotypes
- clinical trials
- cytotoxic T lymphocytes (CTLs)

- D. melanogaster fly models
- DNA damage/mutations/repair, incl. genomic stability
- DNA methylation, DNA methyltransferase
- DNA recombination
- DNA replication
- embryology
- embryonic stem cells
- endocytosis, internalization, trafficking, clathrin-coated vesicles, intracellular transport, chaperones
- epigenetics, incl. chromatin, nucleosomes, histone modification, histone deacetylases, DNA methylation
- extracellular matrix incl integrins, cadherins, stromal cell interactions
- familial inheritance
- FLT3
- gamma secretase
- genomics
- Hematopoiesis / Immunology, incl. Ab and TCR Class Switch, B cell, T cell, dendritic cell
- NK cell and myeloid cell biology, differentiation, costimulatory molecules
- High throughput chemical/peptide/antibody screening
- immunotherapy, including adoptive, vaccines
- interleukins
- JAK2, JAK/STAT
- metabolomics, mitochondria, electron transport, glycolysis
- M.musculus models, including transgenics, knockouts, knock-ins
- microenvironment
- microRNAs, siRNA, RNA interference
- minimal residual disease
- MLL
- Myc
- NFkB, IKK
- Notch
- p53
- pediatric cancers
- peptide therapeutics
- pharmacogenomics
- pharmacokinetics, pharmacodynamics
- phosphodiesterases (PDE)
- phosphatases
- proteasome, protein folding, ubiquitin, proteasome inhibitors
- protein modification (not histones), incl. farnesylation
- proteomics
- Ras
- RNA folding
- RNA Polymerase
- S. Cerevisiae, S. Pombe yeast models
- signal transduction, incl. cytokines, growth factors / interleukins, interferons, kinases
- protein phosphorylation, phosphatases, glucocorticoids, ligand/receptor biology, lipid metabolism
- phospholipase, GTPase
- stem cell biology, incl niche, self-renewal

- stem cell transplantation, incl autologous, allogeneic, non-myeloablative, cord blood, bone marrow
- structural biology
- transcription, transcription factor, pocket proteins, mRNA processing, stability
- translation
- transplants, including allogeneic, autologous, bone marrow, cord blood stem cell, and graft-versus-tumor graft-versus-host disease
- virology, incl. viral-assd. cancers
- Wnt
- WT1
- X. Laevis frog models
- Disease Relevance:
The Applicant (Principal Investigator) can identify two (2) diseases that are most relevant to the proposed research. Choosing more than two (2) may result in disqualification of the application. The list of options is provided here in more detail for clarity.
- acute myeloid leukemias
- chronic myeloid leukemias
- other myeloid diseases (including myelodysplastic syndromes, myeloproliferative diseases)
- acute lymphoid leukemias
- chronic lymphocytic leukemias / small lymphocytic lymphomas (excluded from Indolent non-Hodgkin's lymphoma)
- indolent non-Hodgkin's lymphomas (including follicular, lymphoplasmacytoid, marginal zone, MALT, cutaneous T-Cell / mycosis fungoides / Sezary syndrome)
- aggressive non-Hodgkin's lymphomas (including diffuse large cell, diffuse mixed cell, large cell immunoblastic, lymphoblastic, blastic NK, Burkitt's, mantle cell, primary mediastinal B-cell, anaplastic large cell, various T-Cell except cutaneous, true histiocytic, primary effusion, central nervous system, AIDS-related)
- Hodgkin lymphomas (formerly Hodgkin's disease)
- myelomas (including multiple myeloma, plasmacytoma, MGUS and related lymphoid diseases)
- pediatric blood cancers (including leukemias and lymphomas in children and adolescents)
- basic research (including but not limited to fundamental biological processes / molecules broadly involved in cancer formation and/or progression, with relevance to more than one blood cancer)
- Research Area:
The Applicant (Principal Investigator) can identify two (2) areas that are most relevant to the proposed research. Choosing more than two (2) may result in disqualification of the application. The list of options is provided here in more detail for clarity.
- general hematopoiesis / immunology / embryology / cell biology (including but not limited to research focused on DNA / chromosome replication and repair, cell cycle, apoptosis, migration / homing, signal transduction and including model, non-hematopoietic systems for these studies)
- general blood stem cell biology (including plasticity, lineage commitment)
- lymphoid, myeloid cell carcinogenesis (including cancer stem cell biology)
- blood cancer biomarkers (including biomarkers for early detection, diagnosis, prognosis, risk stratification, treatment management)
- blood cancer therapies, excluding stem cell transplantation (including small molecules, DNA/RNA-based, biologics = antibodies / growth factors / cytokines / other proteins / peptides, cell-based and other non-transplant immunotherapies)
- stem cell transplantation (including but not limited to allogeneic, autologous, non-myeloablative), cord blood
- long-term and late effects (including detection / prevention / treatment)

- Steps Toward Improved Outcomes (Development Step):
 The Applicant (Principal Investigator) can identify two (2) most relevant steps towards improving outcomes. Choosing more than two (2) may result in disqualification of the application. The list of options is provided here in more detail for clarity.
 - applied technology development (including assays and animal models)
 - new biomarker / treatment target discovery (including but not limited to diagnosis, prognosis and risk-stratification markers and oncogene, tumor suppressor and immunotherapy targets)
 - pre-clinical biomarker validation (including biomarkers for early detection, diagnosis, prognosis, risk stratification, treatment management)
 - pre-clinical treatment target validation (including chemo-, radio- and immunotherapy targets)
 - pre-clinical treatment validation (including chemo-, radio- and immunotherapy safety and/or activity in animal and other models)
 - pre-clinical treatment development (pharmacokinetics, pharmacodynamics, and/or toxicology in animal and other models)
 - Phase 1 clinical trials (safe / tolerable dose-finding, in humans)
 - Phase 2 clinical trials (preliminary efficacy, in humans)
 - Phase 3 clinical trials (efficacy compared to “standard”, in humans)

Upload Attachments

This section provides the Applicant (Principal Investigator) with a central location in which to upload proposal attachments. Please note that all templates/forms must be converted from Word document format to PDF format, as this is the only format acceptable. Format conversions can be accomplished using PDF generator software. Links to free or very low cost options are available on the proposalCentral website.

This section also provides a secondary location for the Applicant (Principal Investigator) to access and download any templates/forms and instructions. Attachments are classified as optional or required. The Applicant (Principal Investigator) can view three lists while in this section:

- Currently Uploaded Attachments
- Required Attachments
- Templates & Instructions available for downloading

As each document (regardless of optional or required classification) is uploaded, the document will be added to the “Currently Uploaded Attachments” list. As each required document is uploaded, the document will be automatically removed from the “Required Attachments” list. The following is a list of the attachments indicating the attachment type, the classification, and whether a template/form is provided. If a template/form is provided, the Applicant (Principal Investigator) must use this form or risk disqualification. If you have any questions about what is acceptable or unacceptable, contact LLS at researchprograms@lls.org

Table 5: Proposal Attachments for Full Application

Attachment Type	Classification	Template Provided
Appendices Table of Contents	Required	Yes
Project Information with Budget	Required	Yes
Human Subject Statement	Required as needed	No

Laboratory Animal Statement	Required as needed	No
Recombinant DNA	Required as needed	No
Biohazard Statement	Required as needed	No
Clinical Protocol Appendix	Required as needed	No
Signature Page (General)	Required	Yes*
Terms Signature Page (Specific)	Required	Yes

**Can be found immediately following step to “Validate” application.*

The following sections provide guidance to the Applicant (Principal Investigator) for required information in each attachment.

- Appendices Table of Contents

Use this form to identify all appended materials. Please indicate a title for each appendix. A detailed description should not be included. The Applicant’s (Principal Investigator’s) and other key personnel’s publications that are directly relevant to the methods or aims of the research may be included however not to exceed three per investigator. All password protection features must be removed by Applicant (Principal Investigator).

- Project Information with Budget

The Project Information with Budget Template has five (5) sections: a) Project Description b) Biosketch(s) c) Other Research Support d) Budget and e) the Budget Justification.

Each Project description is limited to seven pages and should be presented in the follow sequence: Title and Specific Aims (approximately .25 pages), Scientific and Clinical significance of the work (approx. 1 page), Previous Studies/Preliminary Data (approx. 2 pages), Research Methods (approx. .75 pages), Interaction with other Investigators (approx. 1 page), Resources and Environment (Major lab items or facilities) (approx. 1 page), and References cited (approx. 1 page).

A biographical sketch is required for the Applicant (Principal Investigator). The format is similar to the NIH biosketch and should not exceed two (2) pages as stated at the top of the template/form. Replicate the provided template (for the biosketch) as needed for key personnel on the project. When listing all government and non government support in the Other Research Support for the Applicant (Principal Investigator) and other key personnel, indicate any overlap of aims or research efforts of proposed work. No more than one biosketch per individual should appear in the application.

The Detailed Budget and Budget Justification should provide itemized detail for each major category for the all years of the program. This budget can be summarized in Year One of the budget and extrapolated for the remaining three years. All Totals and Subtotals should be completed on the form.

Permissible and impermissible costs must adhere to the guidelines provided in the Policies and Procedures document. In brief, the limitations are 1) no more than 40% of the direct costs may be used for professional salaries, 2) travel expenses cannot exceed \$1,000 per year, and 3) indirect costs are limited to 11.1% of the total direct costs. For all expense items, a concise justification should be provided. The justifications should focus on the major expenses, such as salary, laboratory, patient care costs, equipment and travel.

- Human Investigation Statement

Projects that involve human materials/subjects must include the Institutional Review Board (IRB) Approval Date and Compliance Number (or certificate of exemption) as well as the effective dates of approval. IRB approval letters should be included in Attachment A. A Project for which IRB approval is pending must include a statement to that effect. An award will not be made without documented IRB approval if it was pending at the time of application submission. It is recommended that the Applicant (Principal Investigator) notify LLS before review (mid May following March submission) regarding updated IRB status if approval was pending at the time of submission.

- **Laboratory Animals Statement**
For Projects that involve laboratory animals, the Institutional Animal Care and Use Committee (IACUC) Approval Date and Animal Welfare Assurance number must be given. IACUC approval letters should be included in Attachment A. An award will not be made without documented IACUC approval if it was pending the time of application submission. It is recommended that the Applicant (Principal Investigator) notify LLS before review (mid May following March submission) regarding IACUC status if approval was pending at the time of submission.
- **Recombinant DNA Statement**
The Applicant (Principal Investigator) must indicate if proposed research involves the use of recombinant DNA. Documentation of Sponsoring Institutional approval must be uploaded with the application.
- **Biohazard Statement**
The Applicant (Principal Investigator) must indicate if proposed research involves the use of biohazards. If the Applicant (Principal Investigator) indicates affirmatively, then an institutional statement of assurances regarding potential biohazards and safeguards must be uploaded as the Biohazard Statement.
- **Clinical Protocol Appendix**
Provide a one page summary and a link to the Cancer.gov website for any clinical protocol essential to the proposed research. Include IRB approval date, IRB compliance number, and effective dates of approval. Projects for which IRB approval is pending must include a statement to that effect. The Applicant (Principal Investigator) should notify LLS of IRB approval prior to the grant review.
- **Signature page**
The PDF version of the signatures needs to be uploaded to the Full Application.

Validate

It is required that the Applicant (Principal Investigator) validate the Full Application. This feature ensures that all required application fields are complete. If required fields are empty, the system identifies and notifies the Applicant (Principal Investigator) of fields that require information.

Signature Page

All applications must be signed by the Applicant (Principal Investigator), the Signing Official, the Research Administrator, and the Fiscal Officer. The signature page is provided as a printable document

and completing this page is the last step before validating and submitting the application. The Applicant (Principal Investigator) should print the Signature Page, and then obtain the required signatures. The Grants and Contracts Office of Sponsoring Institution can help ensure appropriate signatures are obtained. Once all signatures are acquired, the document needs to be scanned, converted to a PDF, and then uploaded (see *Proposal Attachments* section).

Submit

The Applicant (Principal Investigator) must use this function to submit the completed Full Application for consideration.

Changes

Some information collected in the LOI will automatically populate fields in the Full Application. Changes may only be made after receiving prior approval from LLS's Director of Research Administration. Any changes without prior approval may result in disqualification.

Submission of the Full Application

LLS WILL NOT accept fax or hard copies of the Full Application. Submission of a Full Application is due July 15th at 3:00pm EST via the proposalCentral website (<https://proposalCentral.altum.com>). If any date falls on the weekend or a U.S. holiday, the deadline will be the following business day. The Applicant (Principal Investigator) will receive an email from proposalCentral stating that the application was successfully submitted online upon submission.

Review of the Full Application

LLS will review properly submitted applications. Do not call or email LLS to determine whether the application has been received, when it will be reviewed or the result of the review. Results will be emailed to the Applicant (Principal Investigator) and funded grants will be activated on December 1 of the year awarded.