



Leroy Matthews Physician-Scientist Award

POLICIES AND GUIDELINES

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Application Deadline: February 15, 2019

I. ABOUT THE CYSTIC FIBROSIS FOUNDATION

The mission of the Cystic Fibrosis Foundation (CFF) is to cure cystic fibrosis (CF) and to provide all people with the disease the opportunity to lead full, productive lives by funding research and drug development, promoting individualized treatment, and ensuring access to high-quality, specialized treatment.

To achieve this mission, various types of awards are offered to support meritorious research in CF.

II. LEROY MATTHEWS PHYSICIAN-SCIENTIST AWARD OVERVIEW

The Leroy Matthews Physician-Scientist Award was established by CFF to honor and in memory of Dr. LeRoy Matthews' dedication and commitment to CF research and care. The award encourages outstanding newly trained pediatricians and internists to enhance clinical proficiency in CF-related sub specialties and to develop the necessary research capabilities to become independent biomedical investigators.

The award provides individuals who are either enrolled in or are about to enroll in sub specialty training with the opportunity to undertake up to six (6) years of support for their clinical training, research training, and the initiation of their research career. It is anticipated that the award will provide the opportunity for clinicians to obtain sub specialty training, to develop into independent investigators, and to initiate a research program.

The institutional environment must be one which stimulates and increases interaction between basic scientists and clinical investigators, and which indicates a strong commitment to CF research and care. Thus, applications from domestic medical schools made on behalf of candidates will be accepted if the institution meets the following criteria:

- Have a strong, established CF-related research and clinical training program
- Have an adequate number of high-trained faculty in clinical and basic science related to CF
- Show a commitment and capability to provide guidance to clinically-trained individuals in the development of independent careers as CF researchers and clinicians

General Guidelines and Eligibility:

- Candidates must be U.S. citizens or U.S. permanent residents (must have obtained permanent residency prior to the time of application).
- Candidates for this award can be identified as early as their third year of residency training or at any time during their sub specialty training (Phases I and II). Individuals must possess an M.D., D.O., or equivalent. Those applicants that also have a Ph.D. are encouraged to apply.
- Candidates should demonstrate competence in clinical activities and should show outstanding research potential. Candidates must provide evidence of serious intent for an academic research career (basic or clinical) related to CF. Please note that the review process for this award is quite competitive and highly selective.
- Candidates must be nominated by an institution on the basis of qualifications, interests, accomplishments, motivation, and potential for a research career related to CF. **Evidence of the commitment of the institution to the candidate's research and development must be provided.**
- Each candidate must identify a primary Mentor who is recognized as a physician-scientist with experience in training independent investigators, and who will provide guidance for the awardee's clinical and research development. The primary Mentor must be committed to continue this

involvement through the individual's total period of training (Phases I and II) under the award. The Mentor may form an advisory committee, similar to a graduate student training committee, to develop a Phase I and II program for the candidate that should include course work, seminars, initial research experience, and other educational experience necessary for intensive research in Phase II. **The award does not provide financial support to the Mentor(s).**

- All funds must be used on behalf of the original candidate. Individuals entering Phase III are encouraged to apply for additional research support from CFF or other funding agencies.
- The level of effort requested for Phases I and II is commensurate with acquiring board eligibility in the sub specialty and developing proficient skills in CF-related research. Phase III requires that a minimum of 75% effort be devoted to the research and research training program. The balance of effort can be devoted to other clinical and teaching pursuits only if they are consonant with the program goals.

Awardees are required to inform CFF annually for a period of five years subsequent to completion of the award about academic status, publications, and research grants or contracts received. In addition, all awardees and institutions must comply with CFF award policies.

Phases - the program and individual award application is designed in three phases, as follows:

- **Phase I: Clinical sub specialty training experience:** The first phase of the program will consist of clinical training in a sub specialty related to CF.
- **Phase II: Research training to occur during sub specialty training:** The second phase will provide the individual with the opportunity to develop skills in either basic or clinical research. Only a general research plan for Phase II is required at the time of submission if the applicant is applying during the Phase I portion of the award.
- **Phase III: Independent Research Investigation (first independent application):** The third phase is intended to provide funds for up to two years (2) for the support of independent research investigations of the recipient. This support will take place at the institution where the first academic position is obtained and need not occur at the institution where Phases I and II took place. **At least 75% of the candidate's time must be devoted to CF-related research during this phase.** The outline for this work can be submitted for consideration by CFF near the end of Phases I and II, and at the time of the first academic appointment. In addition to the scientific merit of the proposal, CFF will assess the institution's commitment to assuring the research career development of the recipient in his/her first academic appointment.

Phases I and II can be combined, but the combination of the two cannot exceed a period of four (4) years. At the end of this period, the person should be considered board eligible for the sub specialty for which he/she is training.

Individuals may enter the program at any time during the Phase I or Phase II training. However, for those individuals entering during later parts of Phases I and II, the duration of the award will be adjusted accordingly.

The award will not be made for Phase III independently. Other programs of CFF are available for this support. These include Research Grants, Clinical Research Awards, Pilots and Feasibility Awards, and Harry Shwachman CF Clinical Investigator Awards.

The candidate’s progress and career goals will be subject to a periodic evaluation by CFF. The evaluation will occur midway through Phases I and II. Awardees and their Mentors will be required to submit a special, detailed progress report midway through Phases I and II, and prior to the initiation of Phase III. The award of Phase III will be subject to an additional review by CFF, with the scientific merit of the proposed research project evaluated, as well as the institutional commitment to the career development of the candidate.

It is desirable for individuals to complete all three phases without interruption. It may be permissible, however, to interrupt the award and delay the start of Phase III in order to engage in further clinical or research training. In the event such a contingency arises, the awardee and the mentor must justify the interruption to CFF to assure that funds will be available to resume the award so that the candidate may complete the program.

Funding levels:

Funding levels are based on the phase and year when the award is made and are as follows:

Phase I & II: Sub specialty training (Fellow)	Stipend (salary + fringe)	Research*	Total
Fellowship Year 1	\$60,000	\$10,000	\$70,000
Fellowship Year 2	\$65,000	\$10,000	\$75,000
Fellowship Year 3	\$80,000	\$20,000	\$100,000
Fellowship Year 4	\$80,000	\$20,000	\$100,000

**Research support may include funds for technical costs, i.e. supplies, minor equipment, candidate travel to a national scientific meeting.*

The maximum level of support available under this program during Phase II is \$100,000 per year.

Phase III: Independent research (Faculty) @ 75% research effort	Compensation (salary + fringe)	Research*	Total
Year 5	\$100,000	\$30,000	\$130,000
Year 6	\$100,000	\$30,000	\$130,000

**Research support may include funds for technical costs, i.e. supplies, minor equipment, candidate travel to a national scientific meeting.*

The maximum level of support available under this program during Phase III is \$130,000 per year.

Note: *Salaries should be in compliance with institutional guidelines and can be supplemented by the Awardee Institution.*

III. GOALS OF RESEARCH CURRENTLY OF INTEREST TO CFF

Proposed research must be relevant to the CFF’s mission and to the health and well-being of CF patients. Applicants are encouraged, but not required, to address an emerging area of potential interest stated below. All applications are reviewed and scored not only on scientific merit but also on relevance to the CFF’s mission.

Research topics of high priority to the CF Foundation:

- Direct and indirect influences of CFTR modulation on the airway milieu, including resident pathogens, inflammation, mucin structure (tethered and secreted), airway surface liquid (ASL), and mucociliary clearance
- Understanding defects associated with CFTR mutations other than F508del (especially nonsense and other mutations not currently treated by CFTR modulators) and approaches for restoring CFTR function
- Biological mechanisms involved in lung allograft dysfunction/rejection and transplant immunology
- Improving the detection and treatment of CF infections, especially from difficult to treat microorganisms (i.e. NTM, MRSA, Aspergillus)
- Approaches to understand and treat extra-pulmonary manifestations of CF including (but not limited to):
 - CF related GI issues and the impact of nutritional deficiencies
 - Effects of endocrine system dysfunction in CF, including Cystic Fibrosis Related Diabetes (CFRD)
 - Mental health

Funding priority will be placed on those projects that will lead to a better understanding of disease mechanisms, pathophysiology, and prevention, and treatment strategies.

IV. REVIEW AND AWARD

CFF's Physician Training Programs (PTP) Committee will evaluate all applications. The PTP Committee recommendations are reviewed by the Board of Trustees. Funding of awards is based on the priority score awarded each application and the recommendations of the PTP. Relevance of the proposed study to issues in CF is also considered in determining awards. All research awards are subject to observance of the regulations and policies of CFF related to that category of research support and are contingent upon the availability of CFF funds.

In addition to scientific merit and relevance to the CFF mission, applications will be evaluated in the following areas:

Candidate	Mentor(s)	Environment	Training and Research Development Plan
<ul style="list-style-type: none"> • Commitment to, or intent to pursue, a research career related to CF • Potential to develop an independent research career related to CF • Research accomplishments 	<ul style="list-style-type: none"> • Established expertise in CF-related research or related research areas of high priority to CFF • Commitment of the Mentor for the duration of the candidate's development and research plan • Track record of the Mentor in training individuals for biomedical research 	<ul style="list-style-type: none"> • Quality (breadth and depth) of faculty in basic and/or clinical sciences related to CF at applicant institution • Quality of institution's CF research and training programs • Demonstrated interaction between basic and clinical investigators • Institution's commitment and ability to provide opportunities and facilities necessary for research career development related to CF 	<ul style="list-style-type: none"> • Feasibility and impact of the proposed plan • Didactic course work required by the candidate (if indicated) • Scientific and technical merit of the proposed research • Ability of the proposed plan to develop research skill of the candidate needed for independence • Relationship to candidate's career development

CFF may withdraw applications receiving low scores, and/or those deemed nonresponsive to the program announcement before the review meeting. In these cases, CFF will notify applicants if their application has been withdrawn without discussion. Applications that have not been discussed in two review meetings will not be accepted for further consideration by CFF. Applicants must address reviewer critiques in order to resubmit their applications during future application cycles.

Chief causes for assigning low priority scores to applications during review include the following:

- Insufficient information or documentation
- Inadequate statement of hypothesis, experimental design or methods
- Failure of the applicant to demonstrate awareness of and plans for coping with key problems and pitfalls associated with the proposed research
- Insufficient or improper controls, if applicable.
- Failure of the applicant to describe potential relevance of the proposed study to issues in CF

- Failure of the applicant to document the necessary skills or training to accomplish the goals of the proposal
- Failure of the applicant to meet all criteria described in the policy statement for a given award
- Failure of the applicant to describe career goals as they may be related to a long-term commitment to CF research

V. SUBMISSION INFORMATION & GENERAL TIMELINE

Application Deadline: Friday, February 15, 2019 at 5:00 PM (ET)

Submit online through proposalCENTRAL: <https://proposalcentral.altum.com/>
(Refer to Section VI of these guidelines for specific submission instructions)

An application will be considered incomplete if it fails to comply with the instructions, or if the submitted material is insufficient to permit adequate review. CFF reviews applications electronically, and only documents submitted online at proposalCENTRAL will be reviewed. Late applications will not be accepted, and the deadline will not be waived.

General Timeline:

Application Deadline _____	February 15, 2019
Review by Physician Training Program Committee _____	April 2019
Notification to Applicants _____	Late-May 2019
Earliest Start Date for Awarded Projects _____	July 1, 2019

VI. FULL APPLICATION GUIDELINES

Applications must be submitted online at proposalCENTRAL: <https://proposalcentral.altum.com/>

Documents should be typed using:

- Font: Times New Roman 12 or Arial 11
- Margins: No less than a half inch on each side

Note: *When all the documents have been uploaded to proposalCENTRAL, the system will compile them into a single PDF file in the correct sequence.*

Log-in at proposalCENTRAL: <https://proposalcentral.altum.com/>. If you have registered and cannot remember your password, click on the “**Forgot Your Username/Password?**” link below the “**Application Login**” fields. **Note:** Use the Customer Service link on the top right of each screen as needed.

Award opportunities, including this, are listed on the opening screen, but you must be logged in first to see them.

Select the gray tab labeled “**Grant Opportunities**” found in the upper right-hand side of the page. Click on the light blue “**Filter by Grant Maker**” button to the left and scroll down to locate **Cystic Fibrosis Foundation** in the list.

Locate the listing for the **“LeRoy Matthews Physician-Scientist Award”** program. Click on the **“Apply Now”** button in the column on the far right to open the application form.

Applicants may stop at any point but must click the **“Save”** button before exiting in order to save their work. When logging in to continue, click on the blue tab, **“Proposals”**, and then the **“Edit”** button.

The following sections are listed in the gray navigation box to the left of the application screen. Click on each section and follow the directions.

- 1. Title Page:** Enter the title of your project, select the Phase and Year when the applicant will be entering the program, and indicate whether this is a resubmission of an application that was previously reviewed (include date of previous submission in the corresponding field).
- 2. Download Templates & Instructions:** Download the available templates applicable to the project, fill them out and upload them when completed in Section #10. Templates available include: Applicant Instructions for Letters of Reference (for reference purposes only), Biographical Sketches for Key Personnel, Mentor’s Results of Past and Current CFF/CFFT Support, Applicant’s Results of Past and Current CFF/CFFT Support, Other Support, Facilities Available, Budget Detail, Budget Justification, Critique Response (if resubmission), Research Plan, Data Safety Monitoring Plan, Previous and Future Training Plan, CF-Related Activities of the Mentor and the Applicant Institution, Names and Addresses of References, and Appendices.
- 3. Enable Other User to Access this Proposal:** Complete this section online if you wish to designate access to another individual, such as an assistant who has registered on proposalCENTRAL. Enter the email address of the individual and in the **“Permissions”** column, use the pulldown menu to select the type of access you wish to give. Click on **“Accept Changes”**.
- 4. Applicant/PI:** If a profile was completed upon registration, the fields in this section will already be populated with the information entered in your Professional Profile. If you need to make any changes, click the **“Edit Professional Profile”** button and follow the instructions. If a profile was not completed, enter the required information and click **“Save”**.
- 5. Institution & Contacts:** If a profile was completed upon registration, the Principal Investigator’s (PI) institution will be preloaded as Lead Institution. If a profile was not completed, enter the required information and click **“Save”**. Be sure to use the full legal name of the institution.
- 6. Letters of Support/Reference:** Letters of Support and Reference are weighted heavily in the review. At least six (6) Letters of Support/Reference are required as follows:
 - **The Mentor(s) for this award** – A Letter of Support from the current Mentor(s) should clearly identify the merits of the applicant and must include a description of CF-specific and other training the applicant will receive while working under the Mentor’s direction (i.e. seminars, new techniques, professional development, etc.).
 - **The CF Center Director(s)** (at least one) at the applicant (or nearby) institution (if s/he is not the mentor).
 - **The Chair of the applicant’s Department at the applicant institution** – The letter should clearly describe the institution's commitment to the professional growth of the applicant.

Note: *If a letter from any one referee listed above fulfills two of the required roles, additional letters from references who can speak to the applicant's scientific and clinical abilities, interests, and potential to become an independent investigator must be provided to meet the minimum requirement of six (6) letters.*

- **Additional referees** – at least three (3) other individuals familiar with the candidate's scientific interest and abilities, especially with respect to CF-related research and care, including previous preceptors and mentors. The letters of recommendation should attest to the candidate's academic qualifications, motivation, research potential, and commitment to CF-related research and care.

Enter the email addresses of the individuals who will be asked to submit Letters of Support/Reference for the applicant. Automated emails (with instructions) will be sent to each Referee through the proposalCENTRAL website. **The letters must be uploaded by the referees prior to submitting the application, at least one (1) week prior to the application deadline**, so make sure to start the process early. Additionally, applicants must complete the "Names and Addresses of References" template and upload it in Section #10.

Note: *Detailed Instructions on how to invite referees to submit the Letters of Support/Reference are also available in a downloadable document found in Section #2. Letters uploaded to proposalCENTRAL should not be password protected or otherwise encrypted. Such encryption will cause errors in assembling a single-print PDF of the application. The applicant should inform the individuals writing letters to not include password protection on their documents.*

- 7. Abstracts/Relevance/Keywords:** In the space provided online for abstracts, provide a statement of no more than 250 words (up to 2,000 characters max, including spaces) explaining the subject of the research proposal and its relationship to CF. Two different abstracts are required as follows:
- **Lay Abstract:** This statement will be used to inform the non-scientific departments of CFF and the general public of the nature of this work. **Applicants should not include any confidential or proprietary information, including intellectual property, in the lay abstract.**
 - **Scientific Abstract:** This statement will be used to inform the scientific community.
 - **Summary of Relevance to CFF mission:** Provide a statement of no more than 250 words (up to 2,000 characters max, including spaces) summarizing the relevance of the proposed research to the health and well-being of CF patients, for a scientific audience who may or may not have a background in the subspecialty of the proposed research. All applications are reviewed and scored not only on scientific merit but also on relevance to CFF's mission:

The mission of the Cystic Fibrosis Foundation is to cure cystic fibrosis and to provide all people with the disease the opportunity to lead full, productive lives by funding research and drug development, promoting individualized treatment, and ensuring access to high-quality, specialized care.

- **Keywords:** From the lists of options provided in this section, select all applicable research type, research topics, and keywords for the proposed project. A minimum of one (1) option must be selected per category. Click each keyword you want to select, then the arrow tab, until you have all applicable keywords selected on the list to the right.

8. Budget Summary: Fill in the start and end date and applicable amounts for each year of support requested for Phase I and/or Phase II by completing the online fields (Period 1, 2, 3, 4). The total budget requested per year cannot exceed the funding levels in the table found in Section II of these guidelines.

Note: The Budget Detail and Budget Justification templates downloaded in Section #2 must also be completed for each year of support requested for Phases I and/or II and uploaded in Section #10. The amounts included in this uploaded Budget Detail must match the amounts entered in this Budget Summary online. These templates are not required for Phase III until that portion of the award is activated.

9. Organization Assurances: Select the type of assurances that are applicable to the project and provide all required information (i.e. IRB, IACUC, and/or IBC/rDNA approval letter and status at the time of submitting the application). Refer to Section O. ORGANIZATION ASSURANCES & CERTIFICATIONS in these guidelines for details.

10. Research Plan & Supporting Documents: In this section, upload the completed templates downloaded in Section #2 above in PDF format. Fill out the fields describing the attachment, select the attachment type from the pulldown menu, choose the file to be uploaded, and click the **“Upload Attachment”** button to upload the file. Do this for each attachment.

Below are instructions specific to each template as well as additional information regarding other application components.

A. Biographical Sketches for Key Personnel (template available for download)

Complete and upload an NIH Biographical Sketch for all key project personnel, beginning with the Applicant/Principal Investigator (fellow) and the Mentor(s). (CFF defines “key project personnel” as any individual with an advanced degree that will play an instrumental role in the accomplishment of the research project.) Do not exceed five (5) pages per person.

B. Medical School Transcripts (upload as PDF document)

The applicant must supply (upload) a copy of his/her medical school transcripts.

C. Mentor’s Results of Past and Current CFF/CFFT SUPPORT (template available for download)

Mentor(s) are requested to identify the results of past and current CFF/CFFT support (e.g., subsequent funding from other sources, journal articles, and invited presentations) and the CFF/CFFT grant/award from which they resulted for the past three to five years. Please note that the following information must be included with each research project identified:

- CFF/CFFT Account #
- Principal Investigator (PI)
- CFF/CFFT Project Title
- Applicant’s Title on Project

- Project Start/End Dates
- Total CFF/CFPT Award Amount
- Results of Support

D. Applicant’s Results of Past and Current CFF/CFPT Support (template available for download)

Applicants are also requested to identify the results of past and current CFF/CFPT support in the same manner indicated for the Mentor(s) above.

E. Other Support (template available for download)

Complete and upload an “Other Support” form for all key project personnel, beginning with the Applicant/Principal Investigator (fellow) and the Mentor(s). There is no page limitation.

F. Facilities Available (template available for download)

Describe the facilities and equipment available at the applicant’s institution that will be used for this project, such as laboratory, clinical, animal, computer, office, etc. Provide any additional information about the environment, including any support services available that will be utilized. Describe their pertinent capabilities, proximity and anticipated extent of use. If facilities or equipment at a consultant’s or collaborative site will be used, they should be identified and clearly described. There is no page limit. Use continuation pages, if necessary.

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G. Budget Detail and Budget Justification (separate templates available for download)

Fill out the Budget Detail and Budget Justification templates for all years of support requested for Phase I and/or II. In the space provided on the templates, indicate the year as well as start and end dates for each proposed budget period. (Be sure the amounts entered in the Budget Detail(s) match the amounts entered in the online budget summary in Section #8).

- **Budget Detail – Direct Costs Only**

Personnel - List the names and positions of all professional and non-professional personnel involved in the project, whether or not salaries are requested. Indicate the percent effort on the project for professional personnel. Personnel costs (salary and benefits) may only be requested for the applicant through this program during Phases I and II. For each individual, list dollar amounts separately for institutional base salary and fringe benefits. In accordance with National Institutes of Health (NIH) policy, salary requests may not use an institutional base salary in excess of the current federal salary cap of US\$189,600. Fringe benefits may be requested if they are treated consistently by the applicant institution as a direct cost to all funding agencies and foundations. Stipend levels should not exceed levels indicated below.

Phases I & II: Sub specialty training (Fellow)	Stipend (salary + fringe)
Fellowship Year 1	\$60,000
Fellowship Year 2	\$65,000
Fellowship Year 3	\$80,000
Fellowship Year 4	\$80,000

Supplies - Itemize supplies e.g. glassware, chemicals, animals, in separate categories and give the estimated cost of each category. If animals are involved, state the number, unit purchase cost, and unit care cost.

Travel - Describe the purpose of any travel. Please note: expenses for travel outside the North American continent, including travel to Hawaii, Puerto Rico, and other U.S. territories are not allowable expenses without prior written consent from the CFF Grants & Contracts Office. Travel expenses may not exceed US\$1,250 per person per year. Registration fees associated with conferences should be listed under “Other Expenses.”

Other Expenses - Itemize other expenses by major categories, such as duplication costs, publication costs, minor equipment items under \$5,000, conference registration fees, etc.

***Note:** The maximum level of support that can be requested each year of the award is provided in the Funding Levels table in Section II. AWARD OVERVIEW.*

- **Budget Detail – Indirect Costs**

Indirect costs are not allowable for LeRoy Matthews Physician-Scientist Awards.

- **Budget Justification – Phase I and/or II Only**

Describe costs listed in the Budget Detail. Use major categories, such as Personnel, Supplies, etc. Justify all items.

H. Critique Response (template available for download, if applicable)

If the application is a resubmission, please provide a point-by-point response to the prior reviews. There is no page limit to your responses, but please be concise and succinct.

I. Research Plan (template available for download)

- Key figures and legends must be included in the Research Plan and should be of sufficient quality and size to be evaluated by the reviewer. If uploaded as Appendices, they will NOT be reviewed.
- At the top of each page, type the PI’s name. Each page must be sequentially numbered at the bottom.
- *Page limit:* Ten (10) single-sided pages, not including the Literature Cited. Applications exceeding this page limit will not be reviewed. A template is available for download on proposalCENTRAL. Include sufficient information to permit effective review without reference to previous applications. Information should be presented in a clear and concise manner, while being specific and informative.
- If the application is a resubmission of an earlier one, revisions should be clearly indicated by a change in font, bolded or underlined. CFF will not review resubmissions that have not been revised.

***Note:** If applicants plan to conduct clinical research during their fellowship training, special attention should be given to Section ‘d’ of the Research Plan (Experimental Design and Methods for Clinical Research only) and, for studies that place human subjects at more than minimal risk, to the completion of the Data Safety Monitoring Plan (DSMP).*

- a. **Hypothesis and Specific Aims:** State concisely and realistically the intent of the proposed research and the hypothesis to be tested. The specific aims should be relevant to the mission of the Cystic Fibrosis Foundation. Do not exceed one page.
- b. **Background and Significance:** Briefly describe the background. Critically evaluate existing knowledge and specifically identify the gaps that the project is intended to fill. Concisely state the importance and rationale of this research by relating the specific aims to longer-term objectives. This section should also show the potential importance of the proposed work to CF, in particular in those areas listed as areas of special interest to CFF. In addition, describe the relationship of the proposed work to your long-term career goals. Preference will be given to applicants who express an interest in a long-term career in CF-related research.
- c. **Preliminary Results:** If applicable, provide a detailed discussion of any preliminary results.

d. **Experimental Design and Methods:**

For applicants proposing to carry out Basic Research through this support mechanism

Provide a detailed discussion of the experimental design and methods to be used to accomplish the specific aims. Describe the protocols, including methods for new techniques, and explain potential advantages over existing methodologies. Discuss the data expected to be obtained and the means by which data will be analyzed and interpreted. If human subjects are involved, provide details of the methods for patient selection. Discuss potential difficulties and/or limitations of the proposed procedures and alternative approaches to achieve aims. Point out any procedures, situations or materials that may be hazardous to personnel or patients and the precautions to be exercised.

For applicants proposing to carry out Clinical Research through this support mechanism:

Provide a detailed discussion of the experimental design and procedures to be used to accomplish specific aims. Please discuss: study hypothesis; primary and secondary outcome measures; study sample-inclusion and exclusion criteria; sample size estimates*; subject enrollment including age range; puberty status; gender distribution; randomization scheme if applicable; description of experimental procedures and schedule including a study time-line; drugs and dosage; measures of compliance; follow-up schedule including a study time-line for full project up to three years; efficacy and safety evaluation, data monitoring and quality control; and a description of your proposed data analysis and statistical procedures for your hypothesis testing. Although no page limit is specified for this section, make every attempt to be concise and succinct.

***For sample size estimates**, please provide all estimates of means, standard deviations, rates or proportions used to calculate each of your sample size or power estimates. Please include in the statistical section whether you will use a one or two-tailed test, the

power selected for such a test (if making a sample size calculation), and the reference for your sample size or power calculation. In instances of pilot studies where some of these parameters are unknown, we will accept your best estimates of the unknown parameters if preliminary data are not available, and if your calculation is a preliminary estimate before formal sample size can be calculated for a larger study. Please identify if you are making estimates from data or from personal estimates. This section must document access to adequate numbers of subjects.

Discuss the potential difficulties and limitations of the proposed procedures and alternative strategies for achieving the aims. If the Mentor(s) is not a CF Center Director or Co-Director, a letter of support from the Center Director is required.

- e. Literature Cited:** References should be numbered in the sequence that they appear in the text and listed at the end of the Research Plan. Each citation, must include the names of authors, the name of the journal or book, volume number, page number and year of publication (titles are optional).

J. Data Safety Monitoring Plan (template available for download)

***For clinical research projects only**

In compliance with Federal regulations, all applicants must submit a general description of the Data Safety Monitoring Plan (DSMP) for any proposed study that places human subjects at more than minimal risk. A DSMP helps to ensure subject safety, as well the validity and integrity of the data. Furthermore, a DSMP allows for the monitoring of study data to assess whether or not an early termination is necessary for safety or efficacy reasons.

The extent of monitoring required for a study is dependent on the level of risk involved for the subjects, as well as the size and complexity of the study. Large, multi-center CFFT-funded interventional clinical trials must utilize the CFFT Data Safety and Monitoring Board (DSMB). In addition, CFFT may require that investigators utilize the CFFT DSMB for any other interventional CF clinical trial that meets one or more of the following criteria:

- Multi-center;
- Randomized;
- Conducted in an emergency setting;
- Use high-risk interventions, such as gene therapy or gene transfer; or
- Include particularly vulnerable study populations, such as pediatric patients.

Note: *On the available template, please check whether a DSMP is required and upload the template regardless of the response.*

Address the following areas in the DSMP:

Assessment of Risk – Describe the level of risk the proposed research presents to subject participants and provide a detailed justification for the level of risk. Discuss who will monitor the study.

Level of Risk

- Minimal Risk

- Study poses no more risk than expected in daily life (blood draw, physical exam, etc.)
- Observational studies
- Survey or questionnaire studies
- Low Risk
 - Post-marketing study Phase IV drug or device, as defined by FDA
- Moderate Risk
 - Substantial risk (>5%) of a Serious Adverse Event (SAE) originating from the underlying condition of the enrolled subject
 - Phase I or II study with available safety data in humans
- High Risk
 - Involves an intervention or invasive procedure with substantial risk
 - Involves the use of a new chemical or drug for which there is little or no toxicology data in humans
 - A gene therapy study or research involving recombinant DNA molecules (gene transfer)
 - Involves vulnerable populations (pediatric, pregnant, etc.)

Anticipated Adverse Events and Grading Scale – Describe anticipated adverse events (AEs), including expected frequency and the grading scale to be used. Discuss plans for addressing AEs

Reporting of AEs – Detail the plan for reporting AEs, including who shall be notified in the event an AE should occur.

Safety Monitoring Plan – Describe all tests, evaluations, and exclusion criteria that will be implemented to ensure and monitor the safety of human subjects. Discuss plans for stopping the study if necessary.

Safety Reviews – Describe the process for monitoring and reviewing subject safety data, including the frequency of such reviews. Include details as to who will perform the monitoring and plans for reporting. If utilizing the CFFT DSMB, provide the frequency of meetings, the reporting requirements, including AEs, and the procedure for interim reporting as necessary. If this information is not available at the time of submission of the application, note that CFFT will not release awarded payments until it is provided.

Registrations for Investigator-Initiated Clinical Trials:

- [Clinicaltrials.gov \(United States\)](https://clinicaltrials.gov): Applicants are required to register all non-exempt human subject studies in the ClinicalTrials.gov database to ensure information is freely available on CFFT-funded trials within the community. The registration should be no later than twenty-one (21) days after the first subject is enrolled. CFFT requires copies of documentation confirming this registration, when applicable.

K. Previous and Future Training Plan (template available for download)

The applicant, in conjunction with the Mentor(s), should provide a brief summary of the applicant’s previous research and/or clinical fellowship training, including the reasons for entering the fields related to CF research and care. In addition, the applicant and Mentor(s) should develop a training plan that outlines skills and techniques that will be learned during this

fellowship period as well as CF-specific training that will be available to the applicant, including participation in supplemental course work and special seminars should be included. Further, this section should clearly indicate plans for introducing the applicant to research study planning and design, statistical methods, data management, etc. This plan should address the applicant's long-term career goals and include training and professional development activities that will facilitate the applicant's transition to the next phase of their career. Do not exceed five (5) pages.

L. CF-Related Activities of the Mentor and the Applicant Institution (template available for download)

Describe fully the CF related clinical and research activities of the applicant institution. The Mentor and the applicant institution should also include a list of their previous trainees (past 10 years) and the current affiliations of these trainees.

M. Names and Addresses of References (template available for download)

List the names, titles, and contact information of the individuals who have been asked to submit Letters of Support/Reference on the applicant's behalf via Section #6 in proposalCENTRAL. A PDF copy of the completed form should be uploaded.

N. Verification of Applicant Institution's Tax Status (upload as PDF documents)

CFF's Grants & Contracts Office must have a copy of the applicant institution's current W-9 and 501(c)3 letter, or other documentation verifying its Federal tax status, on file. CFF's Grants & Contracts Office will not issue Award Letters to Awardees if these documents are not received and on file.

- Applicants from for-profit organizations must submit a copy of the applicant institution's W-9 and IRS Form 147C, or other documentation verifying the organization's Federal tax status. Awards are not issued prior to having these documents on file with the CFF Grants & Contracts Office.

O. Organization Assurances & Certifications (if applicable and available, upload as PDF documents under Appendices)

CFF requires, as applicable, that all U.S.-based awardees obtain Institutional Review Board (IRB) approvals for human subject research, Institutional Animal Care and Use Committee (IACUC) approval for animal research, and Institutional Biosafety Committee (IBC) approval for recombinant DNA research (see additional information regarding these approvals below). Copies of these approvals, if available at the time the application is submitted, must be uploaded with the application as appendices. CFF will not release payments to awardee institutions until these documents are received and on file with the CFF Grants and Contracts Office.

Awardees based outside of the U.S. must comply with the applicable equivalent regulations in their respective countries and provide copies of approvals as soon as they are available. CFF will not release payments until these documents are received and on file with the CFF Grants and Contracts Office.

Research Involving Human Subjects: CFF policy pertaining to the protection of individuals as research subjects requires that for each proposal awarded, the awardee institution certify in writing that an Institutional Review Board (IRB) has reviewed and approved the procedures for the use of human subjects, or human organs, tissues and body fluids, in the proposed research, in accordance with the Department of Health and Human Services policies found at <https://www.hhs.gov/ohrp/regulations-and-policy/index.html>. In the event the IRB has determined a study is exempt, documentation demonstrating the exempt status must also be submitted to the CFF Grants and Contracts Office.

Research Involving Recombinant or Synthetic Nucleic Acid Molecules: All research involving recombinant or synthetic nucleic acid and human gene transfer studies supported by CFF must meet the requirements contained in the document *NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules (updated April 2016)*. This publication and announcements of modifications and changes to the *NIH Guidelines* are available from the Office of Science and Policy, National Institutes of Health, 6705 Rockledge Drive, Ste 750, MSC 7985, Bethesda, MD, 20892-7985 or online at <http://osp.od.nih.gov/office-biotechnology-activities/biosafety/nih-guidelines>.

Research Involving Animals: Applications submitted to CFF involving the use of animals must meet the guidelines of the National Institutes of Health found at <https://grants.nih.gov/grants/olaw/olaw.htm>, which require that all proposed studies be reviewed and approved by an Institutional Animal Care and Use Committee (IACUC). In addition, CFF awardee institutions and laboratories must be accredited by the American Association for Accreditation of Laboratory Animal Care (AAALAC) and/or have other verifiable assurances that the institution and laboratory meet appropriate standards.

P. Appendices (template available for download, upload as PDF documents, if applicable)


Appendices are restricted to the following two (2) categories:

- Certification of organization assurances (i.e. IRB, IACUC and IBC approvals), if applicable.
- Up to three (3) reprints of the applicant's work relating to the general area of research in the award proposal may be uploaded in PDF format.

11. PI Data Sheet: Fill in the required fields, save and exit.

12. Print Face Pages: Follow the prompts on the screen to generate and print a face page. The Face Page will be populated automatically with data entered in the online application (applicant's name, institution, title of application, etc.). The Face Page must be signed by the Principal Investigator and Authorized Institutional Official and uploaded in Section #10. Co-Principal Investigators, if any, are not required to sign the Face Page. **CFF will not submit applications for committee review if it does not have the Face Page on file signed by the Principal Investigator and Authorized Institutional Official.**

13. Validate: Upon completing the application, click on the **"Validate"** button on the main screen. Attend to any omissions/errors as prompted onscreen, and then click **"Validate"** again.

14. Submit: Click on the gray button with blue lettering.  CFF will not receive your application unless the “**Submit**” button is clicked.

Confirmation: Applicants will receive an e-mail confirmation from proposalCENTRAL (not from CFF) that the Application was successfully submitted. This e-mail will be your only acknowledgement. If you do not receive this confirmation, please contact proposalCENTRAL immediately to ensure that your submission was submitted and processed.

For technical support with the online application:

proposalCENTRAL at pcsupport@altum.com or
800-875-2562 on weekdays, 8:00 a.m. to 5:00 p.m. (Eastern)

For program/content information:

CFF Grants & Contracts at grants@cff.org or 301-841-2614

VII. ELECTRONIC APPLICATION CHECKLIST

Application Deadline: Friday, February 15, 2019 at 5:00 PM (ET)

Applications must be submitted at proposalCENTRAL: <https://proposalcentral.altum.com/>

Phases I/II

Face Page which includes:

- Signatures
 - Principal Investigator (Co-PI's are not required to sign)
 - Authorized Institutional Official
- Applicant/PI information (online)
- Complete Institution and PI Contact Information, including correct mailing address (online)
- Organization Assurances (check those that apply online/complete the required information)
 - Human Subjects Certification
 - Recombinant DNA/Biosafety Information
 - Research Involving Animals Information

Research Plan, Supporting Documents and Appendices:

- Abstracts ~ Summary of Relevance ~ Keywords - (complete online)
- Biographical Sketches for Key Personnel - (upload)
- Medical School Transcripts (upload)
- Mentor's Results of Past and Current CFF/CFRT Support - (upload)
- Applicant's Results of Past and Current CFF/CFRT Support - (upload)
- Other Support (NIH Format) - (upload)
- Facilities Available - (upload)
- Budget Detail for each year - (upload)
- Budget Justification for each year - (upload)
- Critique Response - (upload, if applicable)
- Research Plan - (upload)
 - Hypothesis and Specific Aims
 - Background and Significance
 - Preliminary Results
 - Experimental Design and Methods
 - Literature Cited (not included in Research Plan page limitation)
- Data Safety Monitoring Plan (**for clinical research projects only** – upload)
- Previous and Future Training Plan (upload)
- CF-Related Activities of the Mentor and the Applicant Institution (upload)
- Names and Addresses of References (upload)
- Verification of Applicant Institution's Tax Status - (upload)
 - W-9
 - 501(c)3, IRS Form 147C or equivalent tax status letter
- Appendices (upload, if applicable)
 - Certification of organization assurances (i.e. IRB, IACUC and IBC approvals), if applicable
 - Up to three (3) reprints of the applicant's work relating to the general area of research in the proposal