CYSTIC FIBROSIS FOUNDATION

For application technical support, please contact MCarlino@cff.org

Program Name: 2024 Gastrointestinal Manifestations of CF Program (Basic Science Projects)

Brief Program Overview/Description: The intent of this request for applications (RFA) is to solicit and fund projects that will improve our understanding of the biological basis for the development and progression of gastrointestinal (GI) manifestations in CF as well as to identify potential novel therapeutic strategies to manage and treat them. GI projects, including those that may not be directly relevant to the priority areas listed in this RFA, may also be submitted through the postdoctoral fellowship award, basic science research grant, pilot and feasibility award, clinical research award, and clinical pilot and feasibility award mechanisms during normal semi-annual submission cycles. Through this special topic RFA, we intend to support 8-10 grants per funding cycle to expand our breadth and depth of research in this area.

Funding Amount: Funding of up to **$150,000** per year, plus an additional twelve percent (12%) of indirect costs may be requested. Awards may be approved for up to a three (3) year project period.

Eligibility:

- United States residents and applicants from outside the United States are welcome to apply.
- Applicants must be independent investigators (an individual who is out of fellowship training and whose institution allows them to submit applications for research funding as a Principle Investigator).
  - Candidates who are clinical fellows should apply to the CFF Clinical Fellowship program for the appropriate year.
  - Candidates who are postdoctoral fellows should apply to the CFF Postdoctoral Research Fellowship program.
- Additional eligibility requirements can be found in Section IV below.
  - Applicants from for-profit organizations should speak to the Program Officer about eligibility before applying through this mechanism.

Key Dates:

Published	September 6, 2024
Full Application Deadline	December 5, 2024*
Committee Review Date	March 2025
Notification to Applicants	April 2025
Earliest Project Start Date	May 1, 2025

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*We strongly encourage all applicants pre-register their profile, institution, contacts, and Title of their application at least two weeks prior to the application deadline. This will help to ensure the CFF Grants & Contracts Management and Administration (GCMA) Office is able to assist all applicant with any potential system-related queries prior to the Application Deadline.

I. About the Cystic Fibrosis Foundation

The mission of the Cystic Fibrosis Foundation is to cure cystic fibrosis and to provide all people with CF the opportunity to lead long, fulfilling lives by funding research and drug development, partnering with the CF community, and advancing high-quality, specialized care.

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

CF Foundation Resources

The Cystic Fibrosis Foundation supports the development of a number of helpful tools and resources to assist the research community in accelerating the progress toward new scientific knowledge of and new therapies for cystic fibrosis. For more information on Tools and Resources for the CFF research community, please visit: https://www.cff.org/for-researchers

CFF Biorepository

Cystic fibrosis biological samples are available to qualified researchers to help develop promising new studies that will support CF research and aid in drug development and drug discovery. Biorepository samples come in many different forms: blood, urine, stool, tissue, and other material. These samples are stored under appropriate conditions that ensure they are preserved for future analysis.

Since 2006, the Cystic Fibrosis Foundation has collected and stored samples from a variety of clinical trials. The CF Foundation has developed a database that combines information from these samples with data from CF clinical trials and the CF Foundation Patient Registry to create a unique and specific sample profile. To request clinical samples to use in the proposed study, download and complete the template from https://www.cff.org/researchers/cf-foundation-biorepository.

If available at the time of application, applicants should upload the confirmation letter provided by the CFF Clinical Research Program Manager to the application. If projects require samples from the CFF Biorepository, funding may be contingent upon approval and availability to access clinical specimens, therefore a letter will need to be provided before the award will be issued.

II. Program and Award Overview

Cystic fibrosis (CF) results from inadequate functional cystic fibrosis transmembrane conductance regulator (CFTR) protein, which may affect both bicarbonate and chloride transport in many different organ systems. Although most commonly described as a lung disease, nearly all people with CF experience at least one GI, pancreatic or hepatic complaint during their lifetime. Studies have shown that the recognition and management of extrapulmonary complications is important for maintaining health in CF, including but not limited to improving growth, nutrition and pulmonary function, but also has significant impacts on quality of life.

The landscape of CF has changed significantly over the last decade with the introduction of CFTR modulating drugs that target the basic CFTR defect for nearly 90% of people in the US living with CF. While modulators have significantly improved health outcomes for many people with CF, we are also now starting to realize the changing course of the disease and some of the complications that persist with treatment as well as new aspects of the disease that people are experiencing for the first time.

Some of the major GI complications/manifestations experienced by people with CF include:

- Distal intestinal obstruction syndrome (DIOS)
- GI motility issues/disorders
- Gastroesophageal reflux disease (GERD)

- Exocrine Pancreatic insufficiency (EPI)
- Pancreatitis
- Hepatobiliary disease
- GI malignancies

GI manifestations can be complex with some originating as the direct result of the malfunction or deficiency of the CFTR protein while others may be the result of downstream effects of the disease or its treatment. To better understand the biological underpinnings of many of these manifestations, we are soliciting applications for basic science research projects on the topic. Some of the areas of greatest interest include:

- Impacts of CFTR function on
    - Fluid characteristics (e.g., viscosity, ionic concentrations, volume, pH) and flow dynamics in CF-relevant gastrointestinal organs
    - Mucus abnormalities, especially in the GI tract
    - Development of GI cancers
- GI inflammation
- Impact of intestinal bacterial overgrowth (SIBO)/gut microbiome on GI complications and nutrition*
- Pancreas/intestine interactions
- Gut/liver axis
- Changes in cellular biology that occur with CFTR dysfunction including:
    - Expression and/or functional impacts on tissue/cell homeostasis and repair
    - Cell fate determinations/signaling
- Genes and pathways contributing to pathophysiology/pathogenesis including:
    - Genetic modifiers and tissues of expression
    - Potential to impact genetic modifier targets
    - Genetic modifiers of GI cancer risk
- CFTR-modulator reversible and non-reversible disease components:
    - Knowledge and gaps regarding CFTR modulator impact on GI, pancreatic, and hepatobiliary disease across the lifespan
    - Impact of early modulator use on restoration of organ level function
    - Relative CFTR modulation across CFTR-expressing tissues that may contribute to the development of GI manifestations
- Elucidating pathophysiology and/or development of therapy directed at correcting nutritional deficiencies

The Foundation may also consider proposals to develop and validate tools or reagents that could be used to facilitate research into GI, pancreatic, and hepatic complications. Examples may include:

- Development of tissue specific cell models that could be shared with other investigators
- Development of validation of CFTR antibodies in immunofluorescence detection in native tissues.

Note: While the focus of research projects should be on CF relevant biology, proposals may also include research into the overlap or commonalities with other diseases. We welcome proposals from individuals with experience in CF, but are particularly interested in applications from individuals with expertise in other areas or techniques that can be applied to the above areas of interest.

*Projects proposing high throughput sequencing or 'omics methodologies to characterize the microbial community will only be considered if they also include detailed plans for use of the data or confirmatory studies to begin to understand mechanisms underlying GI symptoms or nutritional deficiencies and complications in people with CF.

Grant applications submitted through this RFA must focus on basic science research projects. Proposals that include methodologies requiring human subjects or sampling of materials from human subjects will be considered under this mechanism only if the sampling method constitutes minimal patient risk (e.g., venipuncture, nasal brushings) and the sample will be utilized in basic or laboratory research. Projects using previously obtained human samples or samples collected as part of routine clinical care may be allowed; however, this should be specified clearly in the application. All other projects involving human subjects, including interventional studies, will not be reviewed nor funded through this award mechanism and applicants should instead submit their proposals under the Clinical Research Award or Clinical Pilot and Feasibility Award mechanisms. Please refer to the Policies and Guidelines of each of these programs on the CFF website (www.cff.org).

III. Funding Amounts

- Funding of up to $150,000 per year, plus an additional twelve percent (12%) indirect costs may be requested.
- Awards may be approved for up to a three (3) year period. Funding for Years 2 and 3 are contingent upon submission and approval of renewal progress reports and the availability of funds.

IV. Eligibility

- U.S. residents and applicants from outside the U.S. are welcome to apply.
- International applicants and institutions are required to submit additional information in accordance with USA Patriot Act and the U.S. Department of Treasury Anti-Terrorist Financing Guidelines (see section VI.10.L below).
- Applicants from for-profit organizations should contact the Program Officer before starting an application to better understand eligiinlity criteria. Applications from for-profit organizations will not be considered for review unless approval has been given in advance of submission.
- Applicants must be independent investigators.
    - Candidates who are clinical fellows should apply to the CFF Clinical Fellowship program for the appropriate year.
    - Candidates who are postdoctoral fellows should apply to the CFF Postdoctoral Research Fellowship program.

V. Mentorship Requirements

Not applicable to this RFA

VI. Goals of Research Currently of Interest to CFF/Priority Areas

Refer to the Program and Award Overview in Section II

VII. Review and Award

All submissions will be evaluated by a CFF ad-hoc review committee. Funding of awards is based on the priority score awarded to each application and the recommendations of the review committee. Funding decisions are based on the relevance of the proposed study to the goals of the Foundation, alignment with the focus of the RFA, and enhancing the existing CFF project portfolio. All awards are subject to compliance with applicable regulations and CFF policies and are contingent upon the availability of CFF funds.

Full application submissions will be evaluated per the following criteria:

- Scientific Merit
- Relevance to CFF Mission

All applications will be reviewed and scored by a CFF ad-hoc review committee. 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.

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

- Project does not address a topic relevant to the RFA
- 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
- 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 of the criteria described in the policy statement for a given award

VIII. Submission Information

Applications deadline: Thursday, December 5, 2024, by 5:00 PM (Eastern)

Submit online through http://awards.cff.org
(Refer to Section X 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 http://awards.cff.org will be reviewed.

2024 General Timeline:

Application Deadline	December 5, 2024*
Review	March 2025
Notification to Applicants	April 2025
Earliest Start Date for Awarded Projects	May 1, 2025

*We strongly encourage all applicants pre-register their profile, institution, contacts, and title of their application at least two weeks prior to the application deadline. This will help to ensure the CFF Grants & Contracts Management and Administration (GCMA) Office is able to assist all applicant with any potential system-related queries prior to the Application Deadline.

IX. Letter of Intent Guidelines

Not applicable to this RFA

X. Full Application Guidelines

Applications must be submitted online at https://awards.cff.org

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 awards.cff.org, the system will compile them into a single PDF file. You may preview this file by selecting "Application Full Print", as well as exporting the compiled PDF file.*

To login, please visit: http://awards.cff.org

For all first-time applicants in the new Grants Management System, we ask that you pre-register to create a username and password for "http://awards.cff.org" and complete a profile prior to submitting an application. ***Please note:*** Applicants should register their profile using the "Domestic Institution" or "International Institution" options to ensure that your profile aligns properly with the institution where the project will be conducted. We also request that as you begin your application, you enter the title of your project, if available. If you are registered and cannot remember your password, click on the **"Forgot Password?"** link below the **"Login"** fields.

Once logged in, the award opportunities, including this Request for Applications (RFA), will be listed in the **Funding Opportunities** tab on the opening screen.

Locate the listing for the "**2024 Gastrointestinal Manifestations of CF Program (Basic Science Projects)**" program. Click on the "Apply" 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 at the bottom of each page *before exiting* in order to save their progress. When you wish to return to your draft application, please do not go through the "Funding Opportunities" tab. Instead, go to the "**My Applications**" tab in the right corner of the main page. When you are in the "**My Applications**" tab you will be able to find all your draft applications by clicking on the "Draft Applications" module.

The following sections are displayed as tabs across the application screen. Click on each section and follow the directions. Click "**Save**" as you complete each section.

GENERAL

Enter the title of your project, enter the project start and end dates, select the number of periods being requested, and complete any additional questions. Also, please complete the organizational assurances indications (i.e., IRB, IACUC, and/or IBC/rDNA approval letter and status at the time of submitting the application) in this section.

***Please ensure that you review and comply with the below Organizational Assurances and Certifications as cited at the end of this section.**

CONTACT PROFILE

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, you may update your profile in this section. Once updated you must "**Save and Validate**" prior to returning to continue your submission.

INSTITUTION

If a profile was completed upon registration, the applicant's/principal investigator's institution will be preloaded as the Lead Institution. Domestic applicants must verify their institution by entering the Employer Identification Number (EIN) or Tax Identification Number (TIN) to search the system for the correct institution. **Please be sure to use the dash formatting when entering your EIN/TIN (XX-XXXXXXX).** If the EIN/TIN is not located, you may add the legal institution. Please also confirm if the project site is the same as the legal institution.

Verification of Applicant Institution's Tax Status (upload as PDF documents):
The CFF GCMA 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 and 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 documentation verifying the organization's Federal tax status. Awards are not issued prior to having these documents on file with the CFF GCMA Office.
- Non-U.S. applicants must provide a copy of the W-8BEN-E form (required). In addition, a tax equivalency letter should be uploaded, if available. If a tax equivalency letter is not available, applicants must upload a letter stating this documentation is not available.

International Applicants (if applicable):
Applicants whose institution is not a United States based-entity are required to provide additional information and complete a CFF International Institution Form. The completion of this form also includes submission of additional documentation.

CONTACTS

Please note: The INSTITUTION tab must be completed prior to adding internal contacts to ensure that the contacts are properly associated with the applicant institution.
Complete the required contact fields by searching by name for existing contacts at your institution for each role. If the desired institutional contact is not available in the system, you may select "**Add Internal Contact**" to create a basic contact profile in order to add the individual to your application.

Additional contacts not associated with the applicant institution may also be added. These contacts are considered additional contributors involved in the proposed research plan. These may include consultants, collaborators, or subcontractors. In order to add contacts external to the applicant institution, please select the appropriate "Add Subcontractors" or "Add Consultants/Collaborators" button(s) and add the contacts in the table, then click "Save".

REFERENCES (if applicable)

This section will appear if you have selected "**Yes**" for the question on the **GENERAL** tab "**Are you a junior investigator?**"

Letters of Reference for Junior Investigators*: CFF defines "junior investigator" as any individual who has not received a CFF Research Grant or NIH equivalent (e.g., R01, R21, R23) as a Principal Investigator AND is within their first five (5) years of their first academic appointment at the level of Assistant Professor or equivalent. Applicant is NOT considered a junior investigator if they meet one or more of the below criteria:

- More than five years after their first academic appointment at the level of Assistant Professor (or equivalent)
- Has received a CFF/CFFT Research Grant or NIH equivalent (e.g., RO1, R21, R23)
- Has been promoted to Associate Professor or higher

Letters of Reference for junior investigators must be submitted by the following individuals:

- **The Chair of the Applicant's Department at the Applicant Institution** – The letter of reference from the Department Chair should indicate the release of sufficient space and facilities for the work described, as well as guarantee the time commitment of the investigator to the project. If the applicant is currently a fellow, the letter of reference should include confirmation of the pending faculty-level appointment.
- **At least two (2) other individuals** familiar with the applicant's scientific interests and abilities.

Letters of Reference must be submitted prior to submission of the application. To invite Referees, go to the "**REFERENCES**" tab of the online application, then select the blue button to open a pop-up window in order to add the referees in the table. You must click "Invite" in order to trigger the e-mail to the referee. The referee(s) will be sent an e-mail asking them to Accept or Decline the invitation to submit a letter of reference and will be provided instructions to submit the letter. **The applicant will be alerted if a referee Declines the invitation; please make sure to check this tab regularly to see the status of the references.** The applicant should inform Referees to submit the letters at least one (1) week prior to the application deadline. This helps to ensure that the letters have been uploaded before the application is submitted. Once the application has been submitted, no documents can be added.

Letters uploaded to http://awards.cff.org 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.

***Investigators who have received a prior CFF/CFFT Research Grant, Pilot and Feasibility Award or NIH equivalent, are not required to submit Letters of Reference; however, if they are new to CF research, Letters of Support and/or Collaboration should be provided as uploads in the FULL APPLICATION UPLOADS tab.**

ABSTRACTS/RELEVANCE

In the space provided online for abstracts, provide a statement of no more than 2,000 characters (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**: 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 CF the opportunity to lead long, fulfilling lives by funding research and drug development, partnering with the CF community, and advancing high-quality, specialized care.

  Provide a statement of no more than 3,000 characters (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.

BUDGET

Select the "**Edit Budget**" button under Application Budget, to enter and begin completion of the application's budget detail for each year of funding being requested. Research Grants funded through this RFA are for a maximum of three (3) years. The total budget request cannot exceed $150,000 per year plus an additional twelve (12%) of indirect costs.

Salaries & Benefits - List the names, positions, and percent effort of all professional and non-professional personnel involved in the project, whether or not salaries are requested. For each individual, be sure to complete all fields on the Budget Detail in full on the template provided. 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 **$221,900.** Fringe benefits may be requested if they are treated consistently by the applicant institution as a direct cost to all funding agencies and foundations.

Consultant Costs - Give the name and institutional affiliation of any consultant who has agreed to serve in this capacity, including statisticians and physicians in connection with the project if they are not listed under personnel. In the budget justification, briefly describe services to be performed, the number of days, rate of compensation, per diem and any other associated costs. Qualifying consultants are individuals that are generally not employed at the applicant institution and/or are consulting independently to the project.

Travel - Describe the purpose of travel being requested. Please note: For North American applicants, 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 approval from the CFF GCMA Office. **Travel expenses may not exceed $1,500 per person per year**. Registration fees associated with conferences are in addition to this allowance should be listed under "Other Expenses". Applicants are encouraged to attend the North American CF Conference each year to present their work.

Consumable 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.

Major Equipment - List all items of equipment greater than **$5,000** requested and the cost of each item. If funds are requested to purchase equipment that is equivalent to items listed under "Facilities Available", justify the duplication. Justify any item of equipment for which the need may not be obvious.

Other Expenses - Itemize other expenses by major categories, such as duplication costs, publication costs, minor equipment (under $5,000), computer charges, conference registration fees, etc. Tuition costs may be requested for personnel supported through this study but may not exceed **$10,000** per person per year.

Subcontractors Summary
If applicable, detailed budgets and budget justifications for each subcontract, including indirects, must be provided for each year of support. Subcontractors are added in the prior section entitled **CONTACTS**. The lead/prime applicant (PI) and/or Grants Officer can initiate/complete the subcontract budget. After adding Subcontractor(s), in order to access the subcontract budget activity, please select the "**BUDGET**" tab of the application and click the "Open" button next to each listed subcontractor. After completing the subcontract budget activity, please select "**Pending PI Acceptance**", as well as "**Submit**" to ensure the subcontractor budget is included as part of the main application budget.

For applications that include a subcontract with a third party, the applicant may request indirect costs on the first $25,000 of each subcontract per project period. Negotiations of subcontracts are between the applicant institution and the subcontractor.

Budget Detail – Indirect Costs
Indirect costs of up to twelve percent (12%) may be requested from CFF. Indirect costs may be requested for all expenses except for the following:

- Major equipment (items over $5,000 in value)
- Computer software
- Software licenses
- Tuition

FULL APPLICATION UPLOADS

Download the available templates applicable to the project, upload the completed templates to the corresponding attachment types within this section. Templates available for download include:

- Budget Justification
- Research Plan
- Biographical Sketches for Key Personnel
- Other Support
- Facilities Available
- Results of Past and Current CFF/CFFT Support
- International Institution Form (if applicable)

BUDGET JUSTIFICATION

Describe costs listed in the Budget Detail. Use major categories, such as Salaries & Benefits, Consultant Costs, Major Equipment, etc. Justify all items and make sure amounts and figures listed in the narrative are consistent with those listed in the Budget Detail. ***Budget Justification upload(s) should be provided individually for each year of funding support being requested. These can be uploaded as a single PDF or separate PDF uploads for each year.***

RESEARCH PLAN

Page limit: **Twelve (12)** single-sided pages, not including the Literature Cited. Applications exceeding this page limit will not be reviewed. Type the PI's name in the space available in the header of the document. The template available will track page numbers at the bottom.

- Include sufficient information to permit effective review. Information should be presented in a clear and concise manner, while being specific and informative.
- 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.

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 focus of the RFA and mission of the Cystic Fibrosis Foundation. Do not exceed one page.

b. Background and Science: 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 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. For investigators who are new to CF, preliminary data from other fields may be accepted as long as it is clear how this data may be used to support the proposed project.

d. Experimental Design and Methods: 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. Discuss potential pitfalls 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.

Applications that include methodologies requiring sampling of materials from human subjects will only be considered under this mechanism if the sampling method constitutes minimum patient risk (e.g., venipuncture, nasal cell brushing) and patient samples and/or data are anonymous. Describe

the level of risk to patients and measures taken to assure patient anonymity to the PI and other professional personnel, unless the PI or other professional personnel are care providers. If clinical samples are included in the research plan, provide details of the methods for patient selection. Note: Interventional studies involving human subjects cannot be supported through this program and should instead apply as a Clinical Research Award or Clinical Pilot and Feasibility Award.

e. Consultant Arrangements: If the proposed project includes consultant arrangements and/or collaboration with other individuals outside the applicant's group, describe the working relationships and support this description by letter(s) of intent signed by collaborating individual(s). If clinical material required by this award is to be furnished by other individuals, include a statement from these individuals agreeing to their participation and precautions taken to ensure anonymity of patients.

f. 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 all authors, title, the name of the journal or book, volume number, page number and year of publication (titles are optional).

BIOGRAPHICAL SKETCH(ES) OF KEY PERSONNEL

Complete and upload an NIH Biographical Sketch for all key project personnel, beginning with the Applicant/Principal Investigator. International applicants can upload a biosketch that is equivalent in content to the NIH template provided. (CFF defines "key 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.

OTHER SUPPORT

Complete and upload the Other Support form for all key project personnel, beginning with the Applicant/Principal Investigator. There is no page limitation. Information on other support assists CFF in the identification and resolution of potential sources of overlap. Scientific and budgetary overlap should be minimized. Commitment of an individual's effort greater than 100 percent, is not permitted.

FACILITIES AVAILABLE

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.

RESULTS OF PAST AND CURRENT CFF/CFFT SUPPORT

The Principal Investigator (PI) and any Co-Principal Investigator(s), if applicable, 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 award from which they resulted for the past five (5) years. Please note that the following information must be included with each research project identified:

- CFF/CFFT Award #
- Principal Investigator (PI)
- CFF/CFFT Project Title
- Applicant's Title on Project
- Project Start/End Dates
- Total CFF/CFFT Award Amount
- Results of Support

LETTER(S) OF SUPPORT (FOR INVESTIGATORS NEW TO CF RESEARCH, IF APPLICABLE)

Note: Letters of Support are not required for experienced CF investigators, e.g., recipients of past CFF/CFFT funding, investigators with recent publications in the field.

Investigators new to CF research are strongly encouraged to consult or collaborate with an established CF investigator/clinician either at their own institution or another. An investigator is considered new to CF if they have not previously (1) published in CF or (2) received extramural funding for a CF-focused research project. A letter of support from the collaborator/consultant should be included with the application, explicitly describing how the proposed work is relevant to CF and how the collaborator/consultant will assist the investigator (such as providing scientific expertise or CF-relevant samples and reagents).

INTERNATIONAL INSTITUTION FORM (IF APPLICABLE)

Applicants whose institution is not a United States based-entity must complete the CFF International Institution Form. The completion of this form also includes submission of the following documentation:

- Institution's mission statement
- If the Institution is a nonprofit organization, provide government-issued documentation of the Institution's nonprofit status, if available, as well as governing documents (such as a Charter, Statute, or By-Laws) detailing the funding and expenditures related to activities outlined in the Mission Statement of the Institution compared to activities outside of the mission of the Institution
- If the Institution is a for-profit organization, provide a complete list of key employees, members of the governing board, and/or other senior management as well as any governing documents (such as an Articles of Association or Organization) detailing the funding and expenditures of the Institution
- A complete and accurate Form W-8 signed by the institutional official within the last three years. While CFF issues grant funding to 501(c)(3) and nonprofit institutions, CFF also issues contract award funding to other kinds of institutions.
- A description of external sources of support, including the names of individuals and organizations providing the Institution with major donations, official awards, private endowments, and/or commercial activities
- Standard Operating Procedure(s) or relevant policy to ensure that all awarded funds, including but not limited to CFF funds, are used in compliance with all applicable U.S. anti-terrorist financing, privacy and asset control statutes, regulations and executive orders, resulting in the Institution neither distributing awarded funds to terrorists nor supporting their networks , organizations, or activities (*If your institution does not have a relevant policy, please provide a statement signed by an institutional official indicating that all award funds, including but not limited to CFF funds, will be used in compliance with applicable U.S. anti-terrorist financing, privacy and asset control statutes, regulations and executive orders, resulting in funds never being used to support terrorist networks, organizations and/or activities. In the alternative, if the institution does not have this policy, CFF can provide an Anti-Terrorism Certification Form to be signed by the institutional official).*

Applicants who have provided these documents within the past one (1) year is not required to resubmit them. However, if any of the above documents have been updated since they were previously submitted, please upload any updated documents. The CF Foundation GCMA Office will contact applicants if documents are outdated or missing.

*Applicants must provide English translations for all non-English documents, including material provided in support of the Research Plan.

APPENDICES (IF APPLICABLE)

Appendices are restricted to the following three (3) 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 proposal may be uploaded in PDF format.
- Signed Letters of Support and/or Collaboration: A Letter of Collaboration from Co-PIs, if any, should be uploaded and included in the application.
- CFF Biorepository Clinical Specimen Confirmation Letter (if applicable)

***Organization Assurances & Certifications**
CFF requires, as applicable, that all U.S.-based awardees obtain Institutional Review Board (IRB) approvals for human subject research, Institutional Biosafety Committee (IBC) approval for recombinant or synthetic nucleic acid research, and Institutional Animal Care and Use Committee (IACUC) approval for animal 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 GCMA 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 GCMA 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 GCMA 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 2019*). 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 https://osp.od.nih.gov/wp-content/uploads/NIH_Guidelines.pdf.

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.

Validation and Submission

Prior to selecting "**Sign & Submit to AIO**", please complete a thorough review of the entire application. The "**Sign & Submit to AIO**" button will trigger validation on all required fields and identify any upload errors or incomplete fields. Upon selecting Sign & Submit to AIO, the ability to edit the application will be locked pending review and approval by your AIO.

After selecting "**Sign & Submit to AIO"**, the applicant will receive an email asking them to sign the application FacePage electronically using Adobe Sign. Once signed by the PI, the FacePage will then be routed to the AIO contact that is listed on the application for review and signature.

To ensure the application is fully signed and submitted ahead of the Application Deadline for this program, please be sure to complete the application, and begin the Sign & Submit to AIO process in advance of the 5:00 PM EST deadline. The status of your application will display "Submitted" once fully signed, to indicate that your application has been received by CFF.

XI. Resources and Other Information

- CFF Funding Opportunities Newsletter Signup
- CFF Academic Funding Opportunities
- Grants Management System – How to User Guides

XII. Contact Information

For technical support:
Primary CFF GCMA Office contact Mike Carlino at mcarlino@cff.org or 301-841-2671

For scientific and programmatic questions:
Katherine Tuggle, Ph.D. at ktuggle@cff.org