Avery Translational Research Career Development Program Award for Children’s National Faculty

Information and Instructions for 2016-2017 Application

The goal of this document is to provide the information you need to successfully complete your application for the Avery Translational Research Career Development Program Award (letter of intent and full research proposal).

TABLE OF CONTENTS

I. Introduction ...........................................................................................................................................2
II. Important Dates....................................................................................................................................2
III. Eligibility Criteria.................................................................................................................................2
IV. General Instructions ..........................................................................................................................3
V. Review Criteria....................................................................................................................................3
VI. Letters of Intent (Phase I)....................................................................................................................4
VII. Full Proposal (Phase II)......................................................................................................................5
VIII. Progress Reporting and Evaluation................................................................................................10
IX. CTSI-CN Resources............................................................................................................................10
X. Usefull Links.........................................................................................................................................11
XI. Contacts..............................................................................................................................................12
I. Introduction

Integral to Children’s Research Institute’s (CRI) mission is the training and support of junior faculty to conduct clinical and translational research (CTR). The Clinical and Translational Science Award (CTSA) KL2 award represents one such program for MDs and for PhDs who have completed their postdoctoral PhD training. This Avery Translational Research Career Development Award, previously called the Avery Scholar Award, will support MD or PhD junior faculty members whose research focus has direct importance to the improvement of childhood disease.

This award will recruit junior faculty members who have demonstrated the aptitude and commitment to undertake translational research. It is expected that the awardee will:

- **Devote 75% of his/her full-time professional effort to the program** for the training and research activities. This is based on the entire amount of time worked in a typical week. The remaining 25% effort can be divided among other research, clinical, administrative, and teaching responsibilities that are consistent with the proposed goals of the center/division and ideally are linked to the research program. Sources of support for the 75% effort include up to $75,000 per year towards salary. The division/department or CRI center of the awardee must cover the difference, if any, between the available $75,000 and 75% of the awardee salary. An additional $25,000 per year will be provided for related educational and research expenses.

- **Obtain additional research training** through participation in coursework, workshops, and/or individualized programs of study. This requirement can, for example, be met by enrolling in the Clinical and Translational Science Institute at Children’s National (CTSI-CN) Master’s degree or Graduate Certificate in Clinical and Translational Research or other relevant course work in Systems Biology, Bioinformatics, or Engineering.

- **Engage in research** relevant to programmatic interests that advance the division/CRI center. The awardee must select a lead mentor who will have the overall responsibility for helping the awardee develop an independent research career. The lead mentor will provide guidance to assure that the awardee’s projects are moving satisfactorily on the path to publications, presentations, and grant applications. The lead mentor will also ensure that 75% of the awardee’s effort is protected from other duties. A co-mentor or mentors should constitute a mentorship team with even the mentor having the background required to assure multi-disciplinary input to the awardee. The mentors must have a demonstrated record of accomplishment of successfully developing the career of junior colleagues. At least one of the members of the mentorship team should have current peer reviewed funding to support the proposed research for the duration of the awardee’s funding.

II. Important Dates

- **RFA Release Date:** February 18, 2016
- **Deadline for Letters of Intent:** April 15, 2016 by 5:00 pm
- **Deadline for Invited Full Proposals:** June 3, 2016 by 5:00 pm
- **Funding Decision Announcement:** June 2016
- **Award Date:** July 1, 2016

III. Eligibility Criteria

Candidates for the award must:
Possess a doctoral degree (MD, PhD, PharmD, DMD, DDS, OD, DNS/PhD in nursing, etc.) and be a junior faculty (Assistant Professor, Instructor), either currently appointed or newly recruited (within the past 5 years), preferably on tenure track

Commit 75% of professional effort to the program

Commit to a career in research with past evidence of significant productivity and promise.

Commit to research training through, for example, the Master's degree or Graduate Certificate in Clinical and Translational Research or similar training, which will advance the skills of the awardee.

Individuals from underrepresented minority groups, women, and candidates with disabilities are encouraged to apply.

IV. General Instructions

A two-page Letter of Intent (LOI) in advance of the submission of invited full proposals is required. After initial review of the submitted LOI by CTSI-CN Study Section members and appropriate additional reviewers, only invited investigators will be asked to submit full proposals.

LOI and Full Proposal applications for the 2016-2017 Translational Research Career Development Program Award must be submitted as a single .pdf document.

The format requirements for all submitted documents are as follows:

- **Font:** Arial, 11 pt.
- **Margins:** 0.5 inch for top and bottom, and right and left
- **Single spaced**

Please adhere to the page limitations specified below. **Appendices are not allowed.**

V. Review Criteria

- **Overview of Review Process:** The review of applications is performed in 3 phases: (1) LOI, (2) Scientific Review, and (3) Administrative Review. During the first phase, the 2-page LOIs will be scored and ranked, and the top applicants will be invited to submit formal 10-page (maximum) applications. The number of applicants invited to apply will vary, judged by number and merit of applications received. No critiques will be provided to applicants during the LOI stage. During the second phase, the 10-page (maximum) applications will be reviewed by 2-3 scientific reviewers, who will score the applications following K12 program guidelines. During the final phase, applicant scores will be tabulated and ranked, and the top applicants will be interviewed by program leaders. Following interviews, program leaders will meet to discuss and determine awardees. Critiques from the second phase of the review will be provided to the applicants after awards are announced.

- **Letter of Intent:** The LOI consists of the application face page plus 1 page outlining the applicant's career development and research objectives. No supplemental material will be accepted for the LOI. All LOI applications must be submitted as a single .pdf document to Amanda Kasper. The LOI must be received by April 15, 2016. LOIs received after the deadline will be considered unresponsive and will not be reviewed.

Scientific Review will be consistent with NIH review system as follows:
• Candidate
• Career Development Plan/Career Goals & Objectives
• Research Plan
• Mentor, Co-Mentor(s), Consultant(s), Collaborator(s)
• Department/Division Chief’s Commitment to the Candidate

Additional Review Criteria include the following:
• Protection of Human Subjects from Research Risk (if applicable)
• Care and Use of Vertebrate Animals in Research (if applicable)
• Biohazards (if applicable)

Additional Review Considerations include the following:
• CTR representing the continuum from infancy to childhood
• Pediatric Health relevance, defined as either the investigation of a child health condition or the adult expression of childhood circumstances/risk

The reviewers will use the NIH 9-point rating system for the impact priority score of 1 (exceptional) to 9 (poor).

1. Assigned reviewers will provide ratings for each review criteria described above using the 9-point scale.
   • 1 to 3 = high impact
   • 4 to 6 = moderate impact
   • 7 to 9 = low impact

2. An overall score will be assigned to each application in the range of 1-9.

Individual reviewer scores will be averaged and the result multiplied by 10 to determine the final impact score (range of 10-90).

VI. Letters of Intent (Phase I)

LOI are due by COB April 15, 2016 (5:00 pm EST). If you meet all eligibility criteria listed above, the LOI should be submitted as a single .pdf document and should include the following:

1. Letter of Intent: All eligible applicants are encouraged to submit a maximum two-page document that should include the following elements:
   • Title
   • Brief Background
   • Hypothesis and Specific Aims
   • Experimental Approach
   • Future Directions (description of how successful completion of the project will result in a proposal for extramural funding)
   • References (not included in two-page limit)

2. Cover Page: On a single additional page, applicants should provide information regarding the Primary Mentor/Principal Investigator’s position and rank, home unit (e.g., Children’s National CRI Center for Genetic Medicine Research), and contact information (email address, office telephone, physical address). Each of the mentors should provide his or her signature (e-signature will suffice), acknowledging agreement to submit the proposal and mentor the scholar.
3. **Budget and Budget Justification:** Using [PHS 398 Form Page 4 (Rev. 06/09)](https://example.com), complete the budget template with accompanying budget justification.

4. **NIH Biosketch:** [NIH biosketches](https://example.com) of all PIs/mentors should be provided. If available, biosketches of any key personnel such as postdoctoral fellows to be supported by the proposed budget should be included as well.

5. **Submission:** Please submit your entire LOI application as a single .pdf document to [Amanda Kasper](mailto:amanda.kasper@example.com).

6. **Review Process:** At least two members of the CTSI-CN Study Section with relevant content expertise will assess the scientific merit of all letters of intent. Each will receive an overall impact score reflecting the merit using the [NIH scoring system](https://example.com).

7. **Post-Review Feedback:** LOI review will be given to all applicants. If further consultation is needed, applicants are encouraged to seek support from the [Grants Enhancement Program](https://example.com).

**Up to 10 applicants** submitting the top scoring LOIs will be invited to submit full proposals.

### VII. Full Proposal (Phase II)

The application requires many of the same elements as the [NIH K12](https://example.com) Award and includes the following required elements:

<table>
<thead>
<tr>
<th>Required Elements</th>
<th>Instruction/Format</th>
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| **Candidate Statement**<br>(2 pages) | **Candidate's Background:**<br>
- Describe the candidate's commitment to an academic career. Include a description of all of the candidate's professional responsibilities in the grantee institution and elsewhere and show their relation to the proposed activities on the career award.<br>- Present evidence of the candidate's ability to interact and collaborate with other scientists.<br>- Describe prior training and how it relates to the objectives and long-term career plans of the candidate.<br>- Describe the candidate's research efforts to this point in his/her research career, including any publications, prior research interests, and experience.<br>- Provide evidence of the candidate's potential to develop into an independent investigator.<br>- Include a statement that the candidate will commit at least 9 person-months (75% of full-time professional effort) to the program and related career development activities. The mentor or department chair must agree and provide a statement in the application documenting that this percent of the candidate's time will be protected.<br><br>**Career Goals and Objectives:**<br>- Describe a systematic plan: that (1) shows a logical progression from prior research and training experiences to the training and research experiences that will occur during the career award period and then to independent investigator status; (2) that justifies the need for further career development to become an independent investigator; and (3) utilizes the relevant research and educational resources of the institution.<br><br>**Career Development/Training Activities:** |
The candidate and the mentor are jointly responsible for the preparation of the career development plan. A timeline is often helpful. The sponsor/mentor may form an advisory committee to assist with the development of the program of study or to monitor the candidate's progress through the career development program.

The didactic (if any) and the research aspects of the plan must be designed to develop the necessary knowledge and research skills in scientific areas relevant to the candidate’s career goals. The candidate must demonstrate they have received training or will participate in courses such as: data management, epidemiology, study design (including statistics), hypothesis development, drug development, etc., as well as the legal and ethical issues associated with research on human subjects.

Describe the professional responsibilities/activities including other research projects) beyond the minimum required 75% effort commitment to the award. Explain how these responsibilities/activities will help ensure career progression to achieve independence as an investigator conducting patient-oriented research.

Training in the Responsible Conduct of Research:

- Applications must include a plan to obtain instruction in the responsible conduct of research.
- This section should document prior instruction in responsible conduct of research during the applicant’s current career stage (including the date of last occurrence) and propose plans to receive instruction in responsible conduct of research.
- The plan may include career stage-appropriate, individualized instruction or independent awardee activities that will enhance the applicant's understanding of ethical issues related to their specific research activities and the societal impact of that research.
- The role of the sponsor/mentor in responsible conduct of research instruction must be described.
- See NOT-OD-10-019 for further information on the Requirement for Instruction in the Responsible Conduct of Research.

The Lead Mentor and Co-Mentor(s) statement should include all of the following:

1. The plan for the candidate's training and research career development. This description must include not only research, but also other developmental activities, such as seminars, scientific meetings, training in the responsible conduct of research, and presentations. It should discuss expectations for publications over the entire period of the proposed project and define what aspects of the proposed research project the candidate will be allowed to take with him/her to start their own research program.
2. The source of anticipated support for the candidate's research project for each year of the award period.
3. The nature and extent of supervision and mentoring of the candidate, and commitment to the candidate's development that will occur during the award period.
4. The candidate's anticipated teaching load for the period of the award (number and types of courses or seminars), clinical responsibilities, committee and administrative assignments, and the portion of time available for research.
5. A plan for transitioning the candidate from the mentored stage of his/her career to the independent investigator stage by the end of the
| **Division Chief/CRI Director Statement (1 page)** | **Instruction for the Division Chief/CRI Director:** Please indicate the resources that you will provide to support the candidate’s research. Be specific as to amount of space, number and kind of staff, clinical and lab resources, and dollars you will make available to the awardee. (This has an important impact on our funding decision). |
| **Two (2) Letters of Reference** | These letters should come from other individuals who can comment on the applicant’s qualifications for future career as an independent clinical and translational research scientist. These individuals can be previous mentor or advisor. Please have these individuals send their letter directly to Amanda Kasper by 5:00 pm COB June 3, 2016 |
| **Project Summary/Abstract (no longer than 30 lines)** | The Project Summary must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained description of the project and should contain a statement of objectives and methods to be employed. It should be informative to other persons working in the same or related fields and insofar as possible understandable to a scientifically or technically literate lay reader. This Summary must not include any proprietary/confidential information. The Project Summary is meant to serve as a succinct and accurate description of the proposed work when separated from the application. State the application’s broad, long-term objectives and specific aims, making reference to the health relatedness of the project. Describe concisely the research design and methods for achieving the stated goals. This section should be informative to other persons working in the same or related fields and insofar as possible understandable to a scientifically or technically literate reader. Avoid describing past accomplishments and the use of the first person. Finally, please make every effort to be succinct. This section must be no longer than 30 lines of text, and follow the required font and margin specifications. |
| **Biographical Sketches (maximum 4 pages per biographical sketch)** | Provide a biographical sketch for the candidate, Mentor, co-Mentor(s), and any other senior/key personnel, as applicable. Recommended information includes: Education and Training, Research and Professional Experience, Collaborators and Affiliations (for conflicts of interest), Publications and Synergistic Activities. See Notice (NOT-OD-15-032) for further details on the new format. |
| **Specific Aims (1 page)** | State precisely the goals of the proposed research and summarize the expected outcome(s) including the impact that the results of the proposed research will exert on the research field(s) involved. List succinctly the specific objectives of the research proposed, e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop new technology. |
| **Research Strategy (6 pages)** | Organize the Research Strategy in the specified order and using the instructions provided below. Start each section with the appropriate section heading – Significance, Innovation, Approach. Cite published experimental details in the Research Strategy section and provide the full reference in the Bibliography and References Cited section. (a) Significance  ▪ Explain the importance of the problem or critical barrier to
progress in the field that the proposed project addresses.
- Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields.
- Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved.

(b) Innovation
- Explain how the application challenges current research or clinical practice paradigms.
- Describe any novel theoretical concepts, approaches or methodologies, instrumentation or interventions to be developed or used, and any advantage over existing methodologies, instrumentation, or interventions.

(c) Approach
- Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Unless addressed separately in Item 21 (Resource Sharing Plan), include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate.
- Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the aims.
- If the project is in the early stages of development, describe any strategy to establish feasibility, and address the management of any high-risk aspects of the proposed work.
- Point out any procedures, situations, or materials that may be hazardous to personnel and precautions to be exercised.

If an applicant has multiple Specific Aims, then the applicant may address Significance, Innovation, and Approach for each Specific Aim individually, or may address Significance, Innovation, and Approach for all of the Specific Aims collectively.

| Bibliography and References Cited (no specific page limitation applies)* | Provide a bibliography of any references cited in the Project Narrative. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. Include only bibliographic citations. Applicants should be especially careful to follow awardee practices in providing citations for source materials relied upon when preparing any section of the application. |
| Protection of Human Subjects (no specific page limitation applies, but please be succinct)* | This section is required for applicants whose project involves human subjects. Do not use the protection of human subjects section to circumvent the page limits of the Research Strategy. |
| Vertebrate Animals (no specific page limitation applies, but please be succinct)* | This section is required for applicants whose project involves vertebrate animals. If so, you must address the following five key points. In addition, when research involving vertebrate animals will take place at collaborating site(s) or other performance site(s), provide this information before discussing the five points. Although no specific page limitation applies to this section of the application, be succinct.  
1. Provide a detailed description of the proposed use of the animals in the work outlined in the Research Strategy section. Identify the species, strains, ages, sex, and numbers of animals to be used in the proposed work.  
2. Justify the use of animals, the choice of species, and the numbers to
be used. If animals are in short supply, costly, or to be used in large numbers, provide an additional rationale for their selection and numbers.

3. Provide information on the veterinary care of the animals involved.
4. Describe the procedures for ensuring that discomfort, distress, pain, and injury will be limited to that which is unavoidable in the conduct of scientifically sound research. Describe the use of analgesic, anesthetic, and tranquilizing drugs and/or comfortable restraining devices, where appropriate, to minimize discomfort, distress, pain, and injury.
5. Describe any method of euthanasia to be used and the reasons for its selection. State whether this method is consistent with the recommendations of the American Veterinary Medical Association (AVMA) Guidelines on Euthanasia. If not, include a scientific justification for not following the recommendations.

If the involvement of animals is indefinite, provide an explanation and indicate when it is anticipated that animals will be used. If an award is made, prior to the involvement of animals the grantee must submit to the NIH awarding office detailed information as required in points 1-5 above and verification of IACUC approval. If the grantee does not have an Animal Welfare Assurance then an appropriate Assurance will be required (see Part III Section 2.2 Vertebrate Animals for more information).

**Do not use the vertebrate animal section to circumvent the page limits of the research strategy.**

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**Select Agent Research (no specific page limitation applies, but please be succinct)**

This section is required for applicants whose project involves select agents.

Select Agents are hazardous biological agents and toxins that have been identified by DHHS or USDA as having the potential to pose a severe threat to public health and safety, to animal and plant health, or to animal and plant products. CDC maintains a [list of these agents](https://www.cdc.gov/biosafety/resources/biosafetylevels/).

If any of the activities proposed in your application involve the use of Select Agents at any time during the proposed project period, either at the applicant organization or at any other performance site, address the following three points for each site at which Select Agent research will take place. Although no specific page limitation applies to this section, be succinct.

1. Identify the Select Agent(s) to be used in the proposed research.
2. Provide the registration status of all entities* where Select Agent(s) will be used.
   a. If the performance site(s) is a foreign institution, provide the name(s) of the country or countries where Select Agent research will be performed.
   
   *An “entity” is defined in 42 CFR 73.1 as “any government agency (Federal, State, or local), academic institution, corporation, company, partnership, society, association, firm, sole proprietorship, or other legal entity.”*
3. Provide a description of all facilities where the Select Agent(s) will be used.
   a. Describe the procedures that will be used to monitor possession, use, and transfer of the Select Agent(s).
   b. Describe plans for appropriate biosafety, biocontainment, and security of the Select Agent(s).
   c. Describe the biocontainment resources available at all performance sites.
Within the guidelines of this RFA, provide a budget for the Initial Budget Period using PHS 398 format (Form Page 4).

**Budget Guidelines:**

The Award provides up to 3 years (3rd year contingent on the progress report and demonstrable success) of funding in the amount of 75%, up to $75K salary plus fringe benefits and $25K for research related expenses. Allowable expenses include:

- Tuition and fees related to career support
- Research related expenses including supplies, small equipment and technical support
- Travel to one research meeting or travel for specific technical training
- Statistical services/computing, salaries for mentors, secretarial or administrative staff are not permitted.

*not included in overall page limit*

Submit your application as a single.pdf document that includes all items, including letters of support, listed in this section electronically to Amanda Kasper by COB 5:00 pm on June 3, 2016.

VIII. Progress Reporting and Evaluation

Awardees and their mentors will meet on a regular basis, agree on productivity goals, discuss the Awardee's progress, and document these at least quarterly using an Individual Academic Career Development Plan or equivalent. This will be a proactive process designed to identify and overcome any barriers to success, facilitate access to resources, and promote accelerated career development through networking. Awardees will also present their work in progress within CRI at regular center and national meetings and participate in CRI and related Special Interest Group (SIG), and a combined annual retreat for K awardees. In addition, awardees will be asked to provide advice and feedback regarding the success of this program and methods for improving it. Documentation from both awardees and their mentors must be submitted biannually. A successful NIH or similar submission is expected as part of this award.

Awardees must request renewal of this award at the end of the first and second year of funding. Continuation of support for 2 years with the option of a 3rd year of funding, will be contingent on meeting the programmatic, professional, and productivity expectations identified above and funding opportunities available.

IX. CTSI-CN Resources

The CTSI-CN fosters broad collaborative investigation that accelerates discovery and drives dialogue across the bench, bedside, and community continuum. Investigators are encouraged to consult with CTSI-CN resources to further develop their proposals.

- **Biomedical Informatics (BI):** The BI vision is to ensure successful implementation of a "researcher-focused" collaborative and knowledge-sharing informatics infrastructure that provides support to maximize the effectiveness of CTR. Resources include infrastructure for research informatics support; strategies for research database design; data management (REDCap, OpenClinica); access to high performance computing; and bioinformatics support. Requests for BI consultation should be made to Hiroki Morizono, PhD.
Clinical Studies Resource (CSR)/Clinical Research Center (CRC): The CSR/CRC is a service node for CTR at Children's National. The CSR/CRC offers support in the following areas: Clinical Research Nursing Support at the CSR/CRC and in-hospital Services – drug infusions, PK testing, Metabolic Testing, Physical Exams, Vitals, Blood Collection, Sample Processing and Shipping, Medication Administration, and Comprehensive Muscle Testing; Laboratory Support – sample Processing, Storage and Shipment, and DNA/RNA Extraction Services; Study Coordination and Regulatory Submissions Support – study coordination, pre-award and post-award support; Research Pharmacy – drug administration and drug infusion support in coordination with Investigational Drug Services; Cardiovascular Testing – ECG, Telemetry, Ambulatory BP, and Pulse oxymetry; and Exercise physiology/Metabolic – Bioelectrical impedance, BodPod, Exhaled nitric oxide analyzer, Metabolic cart, Resting metabolic rate equipment, Treadmill equipment, Strength testing equipment for large muscle groups, and Calorimetry equipment. To request support from the CSR/CRC, please complete your request through the SPARC Request portal. SPARC is web-based Research Management System portal where researchers and their study teams submit requests for CTSI-CN services and resources.

Design, Epidemiology, and Biostatistics (DEB): DEB’s mission is to provide clinical and translational investigators with study design support from the epidemiological and statistical perspectives as well as statistical analysis planning and conduct, interpretation of results, and dissemination for translational research studies that fall within the research spectrum. DEB resources include biostatistical analysis and epidemiological support; training in study design and development, database development, and data management; and REDCap support. Please visit the DEB Component webpage for information about how to request support from the DEB Component.

Grants Enhancement Program: The purpose of this program is to improve grant applications submitted by Children's National faculty and investigators in order to maximize the probability of funding. Further information about the Grants Enhancement Program can be found on the CTSI-CN website.

Innovative Strategies and Services (ISS): The ISS Component enables CTR by providing consultancy, support, education, and advocacy for issues related to product development and innovation. Additionally, the ISS offers state of the art genomics/proteomics services and specialized resources to clinical and translational researchers. Requests for imaging consultation should be made to Kevin Cleary, PhD. Requests for genomics/proteomics consultation should be made to Susan Knoblach, PhD.

Research Ethics/Regulatory Knowledge and Support (RE/RKS): The RE/RKS Component facilitates the conduct of CTR from the regulatory perspective, improving compliance and efficiency. RE/RKS provides regulatory support spanning the regulatory process involved in the pre-study stage, active-study stage, and post-study stage. The RE/RKS team has extensive regulatory experience, including FDA submissions, preparation of IRB applications, maintenance of approvals, adverse event reporting, protocol amendments and required annual renewals. Resources include sponsor and FDA required regulatory submissions; preparation of IRB applications, using the IRBear system; Participant Advocacy program; consultation on GCP guidelines; and Human Subject Protection training. Requests for RE/RKS consultation should be made to Jan Martinez BA, CIM, CIP.

X. Useful Links
• Children’s National Institutional Review Board Electronic Application Review (IRBear) system
• Clinical and Translational Science Institute at Children’s National (CTSI-CN)
• CTSI-CN Membership
• Grants Enhancement Program
• NIH Biosketch Template
• NIH policy, concurrent support from Mentored Career Development (K) Award and a Research Grant
• NIH Scoring System and Procedure
• PHS 398 Form Page 4 (Budget Template)

XI. Contacts

Mendel Tuchman, MD, Chief Research Officer, Scientific Director, Children’s Research Institute, Professor of Pediatrics, Biochemistry, Molecular Biology & Integrative System Biology, Director, Biochemical Genetics and Metabolism

Mark Batshaw, MD, Chief Academic Officer, Professor, and Chair Department of Pediatrics, Associate Dean for Academic Affairs

Lisa Guay-Woodford, MD, Director, CTSI-CN

Naomi Luban, MD, Director, Research Education, Training, and Career Development, CTSI-CN

Robert McCarter, ScD, Design, Epidemiology, and Biostatistics, CTSI-CN

Amanda Kasper, MPH, Director of Operations, CTSI-CN