Date: October 1, 2015

To: Northwestern University Department Chairs, Center and Institute Directors and Faculty

From: H. William Schnaper, MD, Professor and Vice Chair, Department of Pediatrics, Irene Heinz Given and John Laporte Given Professor of Pediatric Research and Director NUCATS Institute TL1 Program  
William Miller, PhD, Professor, Chemical and Biological Engineering, McCormick School of Engineering and co-Director, NUCATS Institute TL1 Program  
Michael F. Fleming, MD, MPH, Director, NUCATS Institute Center for Education and Career Development and co-Director, NUCATS Institute TL1 Program  
Donald M. Lloyd-Jones, MD ScM FACC FAHA, Senior Associate Dean for Clinical & Translational Research, Director, Northwestern University Clinical & Translational Sciences (NUCATS) Institute

Re: Request for applications for NUCATS Institute Multidisciplinary Training Program in Child and Adolescent Health postdoctoral fellowship research training program (TL1)

The Northwestern University Clinical and Translational Sciences Institute (NUCATS) is pleased to announce a call for applications for the Multidisciplinary Training Program in Child and Adolescent Health (TL1). The goal of this program is to train clinician scientists and engineers to conduct translational science that will improve the care of children and adolescents. This is a new program recently funded as part of the NUCATS Institute Clinical and Translational Science Award (CTSA). The CTSA award is supported by the National Center for Advancing Translational Sciences at the National Institutes of Health.

Funding for TL1 trainees selected during this award cycle is anticipated to begin on or around March 1, 2016.

OVERVIEW:
The overall goal of the TL1 is to address the US workforce need for well-trained clinician scientists and engineers by attracting talented trainees, equipping them with the tools to succeed and retaining their commitment to be independent investigators. The TL1 aims to train postdoctoral fellows in a creative and multidisciplinary environment that produces investigators equipped to apply translational scientific approaches to problems in child and adolescent health. The TL1 is a dynamic program that promotes interactions among both mentors and trainees from multiple disciplines in order to encourage creative thinking and novel approaches to child-health translational science.

In order to accomplish this objective the TL1 program offers access to extensive research training resources including: mentor matching, seminar series on the Foundational Elements of Pediatric Translational Research, monthly sessions focused on Collaborative Approaches in Child and Adolescent (C&A) Health, team science training, catalyzing new teams and ideas, mentor development workshops, community mentors, research and methods mentors and support, grant
writers groups, experiential learning opportunities and more. The TL1 program endeavors to catalyze creative, multidisciplinary partnerships between pediatrics, engineering and data science to improve child and adolescent health.

The TL1 program accepts applications from two types of trainees wishing to receive additional training and mentorship in clinical and translational science. Applications will be accepted from:

1. Clinical postdoctoral fellows pursuing training in child and adolescent health who desire to complement their clinical insight with research skills learned from mentors with diverse scientific backgrounds.

2. Graduating PhDs and PhD postdoctoral fellows from engineering and basic scientific disciplines – including areas such as bioengineering, synthetic biology, systems biology, informatics, population science, materials science, operations research, imaging, signal processing and analysis, gaming theory, robotics, machine learning, health services research, and communication disorders – who desire to apply their discipline to a project in child and adolescent health.

The award is open to individuals with doctoral-level degrees, including but not limited to: PhD, MD, DO, DC, DDS, DVM, OD, DPM, ScD, EngD, DrPH, DNSc, ND (Doctor of Naturopathy), PharmD, DSW, PsyD, or equivalent doctoral degree from an accredited domestic or foreign institution. Trainees for the TL1 program are accepted from a wide array of specialties, departments and schools and partner institutions across NU. For the purposes of this proposal, Engineering is broadly designed and includes, but is not limited to, such fields as Data Science, Biomedical Engineering, Industrial (process) Engineering, Computer Science, Materials, Simulation, Prosthetics and Device development. Individuals from underrepresented racial and ethnic groups as well as individuals with disabilities are always encouraged to apply.

The TL1 program provides support for up to two years and applications should be submitted that cover a training period of two years. The two-year training must include both mentored research and plans for other research training activities in child and adolescent health (see below). Individuals who are funded by this mechanism will receive assistance in applying for other fellowship awards or independent grants during the period of this award.

Postdoctoral fellows in the TL1 program will participate in an integrated didactic and mentored research program overseen by the TL1 Executive Leadership Committee (ELC). The ELC has been constituted to include members from diverse backgrounds to insure that all areas represented by NUCATS have input into the decisions of the TL1 program, including the selection of trainees, catalyzing innovative partnerships for the trainees, development and monitoring of trainee individual development plans (IDPs), and the identification of novel opportunities and approaches to research training in child and adolescent health. The ELC includes several experienced investigators and mentors as well as young investigators and developing mentors. The ELC is chaired by the TL1 Program Director, Dr. William Schnaper.

The purpose of this communication is to invite TL1 trainee nominations from graduating PhDs and postdoctoral fellows at or applying to Northwestern University. The trainee nomination committee requests interested potential trainees provide a letter of intent by November 1, 2015 in order to be considered during this round of proposals. Final, full applications are due December 1, 2015. Tentatively funding is planned to begin on or around March 1, 2016.

ELIGIBILITY and EXCLUSIONS:
The eligibility and exclusion criteria are summarized below, but are similar for those listed for the Ruth L. Kirschstein National Research Service Award (NRSA) Institutional
Research Training Grant (Parent T32). Information can be found at:

Northwestern University and the TL1 program are committed to identifying and implementing ways to
create and support a diverse and inclusive campus community. As the TL1 strives for diversity of
scientific discipline, we also strive for a community of fellows and mentors from different backgrounds
and perspectives to engage in a mutual exchange of ideas and experiences. Those belonging to
groups that have been traditionally underrepresented in research education and training (e.g., certain
racial and ethnic minorities and individuals with disabilities) are strongly encouraged to apply to this
program.

- Clinical postdoctoral fellows pursuing training in child and adolescent health who desire to
  complement their clinical insight with research skills learned from mentors with diverse
  scientific backgrounds.
- PhD postdoctoral fellows from engineering and basic, scientific disciplines including areas
  such as bioengineering, informatics, population science, health services research, materials
  science, operations research, imaging, signal processing and analysis, gaming theory, and
  communication disorders who desire to apply their discipline to a project in child and
  adolescent health.
- Postdoctoral trainees must have received, as of the beginning date of the NRSA appointment,
  a Ph.D., M.D., D.D.S., or comparable doctoral degree from an accredited domestic or foreign
  institution. Eligible doctoral degrees include, but are not limited to, the following: D.M.D.,
  Naturopathy), D.S.W., Psy.D, as well as a doctoral degree in nursing research or practice.
- The individual to be trained must be a citizen or a noncitizen national of the United States or
  have been lawfully admitted for permanent residence at the time of appointment. Additional
details on citizenship, training period, and aggregate duration of support are available in the
NIH Grants Policy Statement.
- Postdoctoral trainees supported by NRSA awards incur a service payback obligation for the
  first 12 months of postdoctoral support. The second year of NRSA postdoctoral support will
  serve to pay back the service obligation. See NIH Grants Policy Statement.
- All trainees are required to pursue their research training full time, normally defined as 40
  hours per week, or as specified by the sponsoring institution in accordance with its own
  policies.
- Appointments are normally made in 12-month increments, and no trainee may be appointed
  for less than 9 months during the initial period of appointment, except with prior approval of the
  NIH awarding unit, or when trainees are appointed to approved, short-term training positions.
- No individual trainee may receive more than 5 years of aggregate NRSA support at the
  predoctoral level or 3 years of support at the postdoctoral level, including any combination of
  support from institutional training and individual fellowship awards. Any exception to the
  maximum period of support requires a waiver from the NIH awarding office based on a review
  of the written justification from the individual trainee, and endorsed by the Program Director
  and the sponsoring grantee institution. Trainees seeking additional support are strongly
  advised to consult with the NIH awarding office.
- Candidates must have mentors with sufficient independent research support or institutional
  commitment to cover the costs of the proposed research project in excess of the allowable
costs of the TL1. The use of mentoring teams including co-mentors to achieve the goals of the
program is strongly encouraged.

PROVISIONS OF THE AWARD:
The award provides a number of tangible resources to support the research training in child and
adolescent health for postdoctoral fellows committed to a career in clinical and translational science.
Some of these provisions include:
• **Appointment period:** Two years (tentative start date on or before 3/1/16).
• **Travel expenses:** Up to $1500 for travel to present at national conferences and symposia
• **Tuition:** Funds are available for trainees to take courses in the Master of Science in Clinical Investigation (MSCI) program or other associated Feinberg School of Medicine graduate programs. Trainees will be encouraged, as part of the individual development plan (IDP) process and in consultation with their mentoring teams, to participate in courses to supplement their current knowledge and expertise.
• **Research Analysis and design Methods Program (RAMP) Mentor Support:** RAMP mentors are assigned to each TL1 trainee to provide individualized, hands-on and educational mentorship throughout the two year award in the areas of biostatistics, epidemiology, bioinformatics, qualitative research methods and health services research.
• **Mentor Matching:** During the application review process for the TL1, the ELC will note specific areas of importance to the candidates and areas that may require additional support from the program including RAMP methods mentors, community mentors and secondary mentors that might uniquely support the career development goals of the trainee. Because this training grant mechanism seeks to encourage the application of engineering solutions to problems in Child and Adolescent Health, expert input from both fields would be ideal in project development and execution. Applicants who would like additional ideas on catalyzing collaboration with a mentor in another area of research are invited to reach out to the TL1 Director during the application process to discuss potential options.
• **Team Science Training:** The TL1 will provide Team Science training and support once teams have been catalyzed to support the new research teams. This workshop will be based on a pilot training intervention in team science currently under development by Dr. Bonnie Spring at NU and six other CTSAs. It will focus on face-to-face simulated exercises to assist trainees and their teams in analyzing the effects of collaboration on overall outcomes, and to provide practical action planning for teams to help them implement best practices in collaboration as they move forward with their projects.
• **Foundational Elements of Pediatric Translational Research:** TL1 trainees will be required to participate in monthly seminar series directed by Dr. Fleming that will cover of the core competencies in pediatric translational research including study design in the pediatric environment, biomedical informatics for pediatric studies, responsible conduct of research for vulnerable populations, translational research teamwork, data-driven discovery in child and adolescent health, unique research methodology, application of complex systems concepts in child and adolescent health, team science and community stakeholder engagement in the pediatric setting. It will provide important foundational knowledge for TL1 trainees to begin to conduct translational research in the pediatric setting or to apply their current research portfolio to child and adolescent health.
• **Collaborative Approaches in Child and Adolescent Health Seminar Series:** This monthly seminar series, led by Dr. Schnaper, is designed to provide trainees with an opportunity to engage in peer mentoring, networking and discussion of contemporary topics in pediatric translational research. The goal is to maximize cross-disciplinary exposure while highlighting common principles of career development.
• **Experiential Learning Opportunities:** Trainees will have access to opportunities to enrich their experience or enhance their understanding of core health issues by linking them with clinicians (for PhDs) or other labs (for clinicians); or by meetings with health experts or representatives of biomedical industry.
• **Community Mentors:** TL1 trainees will have access to community mentors to support trainees in appreciating the potential impact of their research and who have a vested interest
in improving the health and well-being of Chicagoland communities and in training future translational science investigators. Community mentors might support the trainee’s research in a particular population, additional resources for the trainee, dissemination of research findings and other related work in the community. In addition, in 2015, Lurie Children’s will implement the KIDS program in cooperation with the Illinois Chapter of the American Academy of Pediatrics (AAP) in 2015. This program is an advisory group of children, adolescents and families focused on understanding, communicating, and improving health, medicine, research and innovation for children. TL1 Trainees may work with the KIDS program, creating an environment that embeds stakeholder engagement in the research training environment. As an example, a workshop will involve children and families discussing how best to approach them to elicit their participation in research.

The DEPARTMENT also agrees to the following:

- Career Development Meetings: The Department agrees to free the funded scholar for twice-monthly research training meetings (see above) while on the TL1 award.
- Responsible Conduct of Research Training: The Department commits to participation in the Taking Responsibility for the Responsible Conduct of Research course in cases where the RCR requirement has not already been met.
- F32 Submission: It is expected that the trainee will have made significant progress towards the submission of an F32 award by the end of the first year of funding.

INSTRUCTIONS FOR PROPOSAL: This proposal will use the NITRO Competitions system for applications and review. Proposal development instructions (and required forms) can be found at: http://www.nucats.northwestern.edu/funding/career-development-awards/tl1/tl1-proposal-development-instructions.

November 1, 2015 – Letter of Intent Due

- Letter of intent to apply due from the potential scholars. Letters of intent should be sent to nucats-ed@northwestern.edu. This letter should include:
  - Project Title
  - Name of Institution
  - Department
  - Chair Name
  - Primary Mentor Name
  - Co-Mentor Name (from a different discipline or department)
  - 30 line project abstract
- Please note this letter is REQUIRED in order to assemble the appropriate review committee.

December 1, 2015 – Full Applications Due

Description of Items to be Submitted:

- First Page of PHS 398
- Proposal (limit 3 pages)
  - Candidate's Background (limit 1 page)
  - Career Goals and Objectives (limit 1 page)
  - Research Project (limit 1 page)
- NIH Biosketches
  - Trainee, primary mentor and co-mentor.
  - Must include eRA Commons Username for each.


Classroom support for the new NIH biosketch from the Galter Library is available here: [http://galter.northwestern.edu/course_info/204](http://galter.northwestern.edu/course_info/204)

- **Letters of Support**
  - Required Letters: Department Chair, Primary Mentor, Co-Mentor (from a different discipline or department)
  - Additional letters as appropriate from Co-Mentors or Consultants
  - Trainees are expected to work as part of multidisciplinary teams and support from a secondary mentor (from a different discipline or department) is required. Applicants who would like additional ideas on catalyzing collaboration with a mentor in another area of research are invited to reach out to Dr. Schnaper or Dr. Miller during the application process to discuss potential options.
  - Letters should document the role of the primary and co-mentor in the career development of the trainee and how the work proposed fits into the overall program funded by the mentor.

- **Candidate Curriculum Vitae**
- **TL1 Applicant Data Form**
  - Download: [TL1 Applicant Data Form](#)

**How to Submit Proposal:**
- Materials for submission should be uploaded into the NITRO Competitions located at: [https://accounts.nubic.northwestern.edu/people/sign_in](https://accounts.nubic.northwestern.edu/people/sign_in)
- Instructions for how to navigate the NITRO Competitions system and complete upload can be found at: [http://nucats.northwestern.edu/funding/nitro-competitions-user-guide-applicants](http://nucats.northwestern.edu/funding/nitro-competitions-user-guide-applicants)
- Technical support for submissions in NITRO Competitions can be reached at: competitions@northwestern.edu
- Upload should be in 2 sections:
  1. **Application Document (.pdf file) including:**
     a. First Page of PHS 398
     b. Proposal (limit 3 pages)
        - Candidate’s Background (limit 1 page)
        - Career Goals and Objectives (limit 1 page)
        - Research Project (limit 1 page)
     c. Biosketches for Scholar and Primary Mentor
        1. Must include eRA Commons Username for each.
        4. Classroom support for the new NIH biosketch from the Galter Library is available here: [http://galter.northwestern.edu/course_info/204](http://galter.northwestern.edu/course_info/204)
     d. Letters of Support
        1. Department Chair (required)
        2. Primary Mentor
        3. Co-Mentor (from a different discipline or department) (required)
        4. Additional Co-Mentors and Consultants (optional)
e. Curriculum Vitae

2. Applicant Data Form (.pdf file) including:
   a. Download TL1 Applicant Data Form

SELECTION CRITERIA:
Optimal proposals will seek to find engineering (as broadly defined) solutions to problems in pediatric health. The following criteria will be employed to evaluate the submitted proposals. Please take this into account in preparing the proposal.

NIH scoring criteria will be used to evaluate proposals. Each of the following areas will be evaluated using a nine-point score:
- Overall Impact
- Candidate
- Career Goals & Objectives
- Research Proposal
- Mentor(s), Consultant(s), Collaborator(s)
- Environment and Institutional Commitment to the Candidate
- Impact on Child and Adolescent Health

PRESENTATIONS FOR TL1 FINALISTS:
Finalists identified by the Review Panel will participate in a final presentation and interview with the TL1 selection committee. The mentors of the finalists will also be required to attend this meeting. Finalists selected will give a 15 minute presentation with questions and answers on their research, career development goals and objectives and interest in applying their work to child and adolescent health.

Time Line of Events:
Call for Applications               October 1, 2015
Letter of Intent Due from Potential Trainee   November 1, 2015
Full Application Due      December 1, 2015
Review Panel Convenes     January 15, 2016*
Presentations for TL1 Finalists    February 1, 2016*
Initial Notification of Decisions                                   February 15, 2016*
Awards Begin                                                                   March 1, 2016*

*Dates subject to change based on the availability of all participants to attend on or around a particular date.

The evaluations of each proposal will be returned to the applicant with the intent that the feedback will be helpful to those who are funded and will assist those who are not funded to submit competitive F32 awards.

We look forward to your responsiveness to this solicitation.
Support for Candidates:

Technical questions about NITRO Competitions can be directed to: competitions@northwestern.edu.

Process related questions can be directed to Sharence Adams at 312-503-2813 or nucats-ed@northwestern.edu.

Questions related to potential candidate eligibility or qualification can be directed to Bill Schnaper at schnaper@northwestern.edu.