**Request for Applications**
**Center for Drug Discovery**

## Title: Collaborative Drug Screening Pilot Program for Human Diseases

**Objectives:** Pediatric Center for Drug Discovery (CDD) encourages basic and clinical researcher faculty to submit applications that aim for chemical library screening and drug discovery using cell culture disease models. CDD will provide **$28,000** to selected applications proposing cellular phenotypic assays that are proper for the medium-throughput screening of chemical libraries provided by CDD. Fluorescence-based cell imaging (i.e. GFP), enzyme-based assays (i.e., luciferase), and cell counts (i.e. live and dead cells) are recommended as phenotypic readouts for the robotized 96-well format instrument available in CDD (BioTek Cytation 3, (http://www.biotek.com/products/imaging/cytation3_cell_imaging_multi_mode_reader.html)). Applicants should demonstrate the reliability, simplicity and reproducibility of the phenotypic readouts as well as disease relevance and significance. The long-term goal of this RFA is to enable the researchers to explore the drug discovery pathways for future translational and clinical applications.

CDD offers extensive collaborative drug screening operations for targeting human diseases that child health researchers are currently investigating. CDD houses the BioTek Cytation 3, a robotized award-winning instrument with capability for high - and medium – throughput drug screening. The capabilities of this instrument include automated imaging (3 color plus bright field for cell counting), fluorescence, absorbance, and luminescence. In addition, CDD maintains several chemical libraries for supporting the pilot awards, including US FDA approved compounds and other biological active chemicals with minimal toxicity (~2,500 compounds). Discussions for further research plans beyond the initial screening will be arranged upon the completion of the screening. While it is preferred that the entire process should be covered by the awarded support, any additional costs beyond the awarded budget will be the responsibility of the individual investigator. It is also possible to propose to use a portion of the awarded budget to cover the screening cost from other Emory screening locations such as Emory Chemical Biology Discovery Center if the awarded investigators plan to use these Emory facilities.

**Selection criteria:** This RFA will support up to **3 applications** that successfully fulfill several key criteria:
**1)** Disease relevance and significance,
**2)** cell culture based phenotypes that can be read by Cytation 3, and
**3)** Feasibility, reproducibility and simplicity of the phenotypic readouts/systems.

**Budget and screening procedures:** Selected applicants will each be awarded up to **$28,000** to be used for conducting a proposed drug screening project with one medium-throughput chemical library (FDA approved drug library, ~2,500 compounds). The compounds will be provided to the laboratories of the awarded investigators, and the laboratories will perform the exposure of the biological screening systems to the compounds and complete the assay. Then, the compound-treated assay systems can be analyzed by the awarded laboratories or delivered to CDD where the investigator's laboratory personnel will analyze the delivered systems with the Cytation 3 instrument (CDD personnel will assist the screening). The CDD personnel will collect the screening results for the awarded investigators.

**Budget items**: Budget up to $28,000 and should include,

1. Salary – For the assay and screening within the investigator's lab plus screening and analysis on the Cytation 3
2. Supplies – Consumables required for the screening process within the investigator's lab
3. Cytation 3 analysis fee ($1,600)
4. Personnel support for library handle and Cytation 3 analysis and data collection assistance ($4,900).

5 sections of the narrative:

1. Specific Aim
2. Background and Significance
3. Screening Phenotypes,
4. Screening and validation Plans
5. Expected outcomes.

*** Please email Dr. Baek Kim (baek.kim@emory.edu) if you have any questions about this RFA.**