

## Pediatric Centers of Excellence in Nephrology Call for Pilot & Feasibility Proposals in Pediatric Kidney Disease Cycle 3: 2024 Start Date

### Overview

The Pediatric Centers of Excellence in Nephrology (PCENs) at the University of Virginia (UVA), Children's Hospital of Philadelphia (CHOP), and Washington University in St. Louis (WashU) are issuing a joint RFA for Pilot and Feasibility (P&F) projects. The PCEN program is funded by the National Institute of Diabetes and Digestive and Kidney Diseases, and was established to:

1. Attract new scientific expertise to the study of human pediatric renal physiology, kidney development, and pediatric kidney disorders;
2. Encourage multidisciplinary research in these areas; and
3. Develop the pediatric nephrology research community—in part through the P&F Program.

The PCENs are seeking applications for one-year pilot and feasibility research projects. The maximum funding is **\$50,000 in direct costs for one year**, with one optional no-cost extension (NCE).

***Awardees are expected to generate preliminary data to support future research applications.***

Research with science proposed that is not relevant to pediatric kidney disease or health will not be accepted. Utilization of the PCENs' Cores is not required (see descriptions below). Applications may be reassigned among the Centers for best fit. Investigator status, geographical, and scientific diversity may be prioritized in funding considerations.

### Eligibility

Early-stage investigators, new investigators, or established investigators not previously involved in pediatric nephrology research or pursuing a new direction are invited to apply. The P&F program and funds are not intended to support or supplement ongoing research of an established investigator. This program is not intended to provide overlapping, supplemental funding for investigators who have already secured NIH or other funding at the R or equivalent level.

### Key Dates

- **Intent to Apply surveys are due by Friday, June 14, 2024, at 5:00PM ET.**
- Invitations to submit Full Applications will be issued by June 28, 2024, at 5:00PM ET.
- **Full Applications are due by Friday August 23, 2024, at 5:00PM ET.**
- Awards will be announced in late October, 2024.

The funding period will be December 1, 2024, through November 30, 2025.

### How to Apply

In lieu of letters of intent, the Centers require the completion of a REDCap survey (QR code and link on page 2). You will receive a confirmation after the survey has been submitted. All applications should be submitted electronically to the administrative contact at the most applicable Center (listed on page 3) as PDFs. All proposals must receive Institutional Review Board (IRB) or Institutional Animal Care and Use Committee (IACUC) approval (as applicable) before the funding begins.

## Application Guidelines

Applications must be submitted as a single PDF file. Submissions must be in Arial, 11-point font with 0.5-inch margins.

**Intent to Apply Survey:** Please complete the REDCap survey by following the QR code or this [link](#). The information requested is to confirm that applications will be within scope and to aid in Center planning purposes. Requested information includes, but not limited to:



- Name, department, and contact information for the PI
- Center and core utilization
- Working title of the proposed research
- Short description of the proposed research

## **Full Applications (if invited):**

- **Research Proposal** (3 pages): The research proposal must be no longer than 3 single-spaced pages. References do not count towards the page limit. The research proposal should include the following information:
  - Essential background information relative to the project.
  - Specific aims, central hypothesis, rationale, research approach, and implications for potential findings.
  - Provide a brief description of how the project relates to the PCEN Center goals or research. Use of Core services is not required and is not considered in funding decision but if you do plan to use a core describe usage and benefit to the project.
  - Timeline and milestones for completion of the project.
  - The importance of this funding to the feasibility of your research proposal and future research applications. Indicate if any other funds are available to you for the proposed research.
  - *If applicable:* Provide justification for overlap with another project with NIH or other agency funding.
- **Letter of Support:** Required **ONLY** from mentors for clinical or postdoctoral fellows submitting as PIs.
- **NIH Biosketch:** NIH format biosketches must be submitted for the PI and the Co-Is.
- **Budget :** Please provide detailed expenses (detailed below).
- **Budget Justification:** Please provide a short justification for all personnel, supplies, and services for the project.

## **Budget Guidelines**

- Budgets of any size up to \$50,000 may be submitted.
- *The following are not allowable and cannot be requested:*
  - Indirect costs are not allowable.
  - Salary support for faculty is not allowable. However, salary support for staff is allowable.
  - Equipment expenditures are not allowable. Please keep in mind that equipment is defined as any item costing more than \$5,000 with an estimated useful life greater than one year.

- Name, title/role, percent effort, salary, and benefits must be defined for each grant participant.
- Supplies should be detailed by type and number in the budget and the budget justification.
- Service contracts should be detailed in the budget and budget justification.

### Information for Funded Projects

Funded projects will be assigned to one of the 3 PCEN Centers for subsequent administration.

**IRB or IACUC Approval Letter:** Funding will be delayed until these approval documents are received by your assigned PCEN Center. The applicants are encouraged to have a feasible plan to obtain these in a timely manner.

**Progress Reports:** All progress reports will be submitted to your assigned PCEN Center should serve as a summary of progress of the research to date. Each report should be no more than 2 single-spaced pages and list any abstracts/publications and/or additional awards related to this pilot project.

Any publications or presentations that are the direct result of this funding **MUST** include the applicable funding reference text, to be provided to applicants upon award. *You will be prohibited from applying for future pilot funding if you do not reference the funding support on publications and if you do not submit timely progress reports.*

All grantees are expected to present research results at the annual PCEN P50 scientific symposiums.

### Application or Funding Questions

For questions, please contact the administrative lead at the institution to which you are applying:

- **University of Virginia:** Patricio Ray ([PER4DP@uvahealth.org](mailto:PER4DP@uvahealth.org)) or Ariel Gomez ([rg@virginia.edu](mailto:rg@virginia.edu))
- **Children's Hospital of Philadelphia:** Hannah MacLean at CHOP's PCEN email ([CHOPPCEN@chop.edu](mailto:CHOPPCEN@chop.edu))
- **Washington University in St. Louis:** Vikas Dharnidharka ([vikasd@wustl.edu](mailto:vikasd@wustl.edu)) or ([pcen@wustl.edu](mailto:pcen@wustl.edu))

### PCEN Research Mission and Resources

#### University of Virginia

The PCEN at UVA supports one biomedical research core to assist investigators interested in applying transcriptome and epigenome technologies and bioinformatics to pediatric kidney research.

**Single Cell Epigenomics, Transcriptomics, and Bioinformatics Core:** The objective of the core is to provide support and services for transcriptome and epigenome studies, validation, functional/phenotypic analysis, and data analysis with state-of-the-art bioinformatics approaches. The Single Cell Genomics and Epigenomics component of the core provides 1) high quality scRNA-seq, snATAC-seq, ChIP-seq, Cut&Tag and Cut&Run services, 2) validation of genomic data at the RNA and protein levels, and 3) CRISPR services for gene editing (gene knock-out, epigenetic manipulations). The bioinformatics component provides both 1) computational infrastructure and 2) analytical support for large-scale 'omics experiments. The mission of the core is to generate new biological and therapeutic knowledge from the large-scale data generated by PCEN projects.

For more information about UVA's PCEN and Core visit our website:

<https://med.virginia.edu/pcen/overview/research-cores/>

#### Children's Hospital of Philadelphia

CHOP PCEN's mission is to increase efficiency and reduce barriers to collaborative clinical trials by serving as a widely available resource to all clinicians, researchers, and investigators helping children with kidney disease.

**Learning Health System Core:** The LHS Core has partnered with PEDSnet to establish a national interconnected, multi-institutional infrastructure able to reach large numbers of children with kidney disease and to provide the depth of information necessary to comprehensively characterize their clinical course and outcomes and to evaluate therapies.

**Molecular Precision Nephrology Core:** The objective of the MPN Core is to provide a pediatric kidney cell reference atlas and molecular phenotyping services for PCEN investigators and for the pediatric nephrology community. Molecular phenotyping services include single cell multi-omics experiments and data analysis.

Read more about CHOP's PCEN and Cores at our website: <https://www.research.chop.edu/pediatric-center-of-excellence-in-nephrology>

## **Washington University in St. Louis**

General information: The PCEN-WU is interested to understand mouse and human fetal and post-natal kidney development and organization in healthy and disease states at a single cell and spatial resolution. The Center investigators are using and generating multiomic data from mouse and pediatric kidney tissue and modeling kidney development and disease using iPSC lines. The areas supported by the PCEN-WU include kidney development, experiments using iPSCs, pediatric kidney diseases (CAKUT, glomerular diseases, AKI, CKD), tissue engineering, disease modeling, pediatric tissue-based research, single cell and spatial omics to understand kidney biology. More information about the cores and services can be found at [PCEN-WU biological cores](#)[PCEN-WU biological cores](#)

### **Human iPSC Core**

The induced pluripotent stem cells (iPSC) core has set up an infrastructure of inter-institutional regulatory approvals to provide a number of human iPSC cell lines including parent and lineage and cell type specific reporter lines for organoid research. These cell lines are distributed throughout the world for various aspects of kidney development, disease modelling and tissue engineering. More information and procedure to request these cell lines can be found [here](#). Look through our available cell lines: [Browse Reporter Lines](#) | [Browse Parental Lines](#)

### **Single Cell & Spatial Biology Core**

The PCEN-WU investigators have breadth of expertise in the field of single cell and spatial biology ranging from tissue acquisition, processing, data generation and omic analysis. They have generated a wealth of multiomics data from human kidneys. The services here will provide resources to accelerate pediatric kidney disease research using spatial transcriptomics and include consultation for experimental design, service to use 10X Xenium or CosMX SMI platform and focused support for queries related to cell type and spatial expression of genes in the human kidney. This service will be operational in September 2024.

**Pediatric Kidney Tissue.** Pediatric kidney tissue will be preserved in different media for broad application in single cell omics technologies. Planned preservations include FFPE blocks, Fresh frozen OCT-embedded blocks, flash frozen tissue, cryoprotected fixed frozen OCT-embedded tissue blocks and parent and reporter human iPSC lines. The source of pediatric deceased donor kidney tissue is from a network of organ procurement centers coordinated by Gloria Pryhuber, MD at University of Rochester Medical Center and nephrectomy and biopsy cases at Washington University coordinated by Sanjay Jain, MD, PhD. As the repository is being built, we anticipate pediatric kidney tissue to be available upon request in 2025 Spring.

Read more about PCEN-WU and Cores at our website: <https://sites.wustl.edu/pcen/services/>