UTHealth Houston

Cizik Nursing Research Institute

Bring the scientific question. We'll help build the path.

CNRI Smart Apartment research services for UTHealth Houston investigators

Consultation required to determine project fit and feasibility

You do not need to arrive with a technical architecture

Start with the clinical or scientific decision you need to make.

CNRI can help translate that question into a feasible home-context protocol, technology plan, data strategy, staffing model, and set of research products.

01 Clarify the question and intended use

02 Scope technology, data, and operations

03 Return evidence you can use and explain

A home-like setting reveals what controlled tests can miss

CONTROLLED TEST

Does it work?

A hallway or bench test can establish basic function under a narrow set of conditions.

SMART APARTMENT

What happens in context?

Realistic activities add interruption, mobility, medication routines, meal preparation, sleep, caregiving, and other conditions that shape performance and health.

Synchronized sensor, video, device, physiological, wearable, and participant-reported data can connect the outcome to the context in which it occurred.

Seven questions turn the space into a research service

01 **Usability Testbed**

Can people use it?

02 **Validation Sandbox**

Does it measure correctly?

03 **Digital Phenotyping Lab**

What can the data tell us about the person?

04 **Adaptive Intervention Testbed**

Can the system respond intelligently?

05 **Early Detection Testbed**

Can it identify risk before conventional assessment does?

06 **Digital Biomarker Package**

Can raw signals become a valid measure?

07 **AI in the Home Testbed**

Can AI assist safely and usefully at home?

Configure the platform around the protocol

01

Home environment

Instrumented kitchen, bedroom, bathroom, and living areas for realistic tasks and participant visits.

02

Sensing & devices

Environmental, movement, appliance, physiological, wearable, bed, video, voice, health, and investigator-supplied technologies as feasible.

03

Data & compute

Synchronized capture, annotation and de-identification options, edge inference, multi-GPU compute, and secure storage.

04

Interdisciplinary team

Clinical and nursing science, informatics, data science, AI/ML, NLP, software, integration, biostatistics, IT, research, and administration.

Emerging technologies and new configurations are considered during project scoping.

Select the level of support your study actually needs

Engagement can range from a focused consultation to a more complete study, data, and reporting partnership.



1	2	3	4	5
Consult & scope	**Design & prepare**	**Enable the study**	**Conduct & manage**	**Analyze & report**
Question, fit, feasibility, technical and data plan	Protocol, IRB, capture plan, grant and budget support	Configuration, integration, data systems, launch	Participants, staff, visits, operations, coordination	Data, analysis, reports, figures, grant or paper language

Participant-facing staff, recruitment support, technology, protocol development, analysis, and reporting can be added when feasible and scoped.

One project can return multiple forms of evidence

DATA OPTIONS

Raw

Source-aligned files with scoped documentation

Organized

Structured datasets, dictionaries, synchronization, and quality controls

Processed

Features, scores, summaries, and analyses as scoped

DECISION-READY PRODUCTS

Technical evidence	Technology Readiness Reports, validation memos, performance tables, error taxonomies
Human evidence	Usability findings, qualitative debriefs, burden and workflow insights
Measurement evidence	Digital Biomarker Reports, feature dictionaries, score specifications, validation roadmaps
Scholarly products	Analyses, figures, methods and results language for grants or manuscripts

Define the handoff before the study begins

01

You bring

Scientific question
Intended use or decision
Population and activities
Known technology
Project stage and deadlines
Funding context

02

CNRI provides

Fit and feasibility review
Protocol and IRB support
Technology and data plan
Configurable environment
Staffing and study operations
Analysis and reporting

03

You receive

Defined scope and responsibilities
Raw, organized, or processed data
Qualitative and quantitative findings
Technical or biomarker reports
Figures and documentation
Grant or manuscript language

Consultation turns an idea into a scoped path forward

The first inquiry is intentionally short. Detailed technical and operational scoping happens with the right CNRI contributors at the table.



1	2	3	4	5
Submit inquiry	**CNRI triage**	**Consultation**	**Feasibility & scope**	**Prepare & launch**
Question, stage, activities, timing	Right expertise assembled	Decision, intended use, needs	Technology, data, staff, governance, budget	Approvals, configuration, schedule

No feasibility, start date, pricing, or technology availability is promised before scoping.

Plan the full service into the study—and into the grant

UTHealth pilot & pre-award

Activities may be subsidized by CNRI following consultation and approval. Contact CNRI early enough to shape feasibility, methods, data capture, staffing, products, and budget language.

Grant-funded studies

Budget CNRI services at cost, including the technical, data, participant-facing, research, study-operational, and administrative effort required outside the visible apartment visit.

Consult before the protocol and budget are fixed.

External TMC and industry projects require separate administrative, IP, and contracting review and are scoped at cost with additional administrative effort.

CNRI SMART APARTMENT

WHAT QUESTION COULD YOU ANSWER IF THE RESEARCH SETTING BEHAVED MORE LIKE HOME?

Bring the question, project stage, intended population or activity, known technology, desired outputs, and any grant deadline.

Request a consultation: https://redcap.link/smartaptconsult

Consultation is required to determine scientific fit, technical feasibility, data requirements, staffing, timeline, governance, and budget.