



Clinical & Translational Science Center Core Laboratory – Translate Your Research From Bench To Bedside



Clinical and Translational Science Center (CTSC) of Weill Cornell Medicine

The mission of the Clinical and Translational Science Center (CTSC) is to provide an environment that allows optimal use of our considerable multi-institutional assets and the diversity of our patient population to move translational research seamlessly from bench to bedside and to the community. The CTSC acts as a conduit through which essential resources, technological tools and education programs for all partners can be efficiently shared and managed. The CTSC is funded through the NIH Clinical and Translational Science Awards (CTSAs), a national consortium that is transforming how clinical and translational research is conducted. The CTSC partners include:

- Weill Cornell Medicine
- Weill Cornell Graduate School of Medical Sciences
- New York-Presbyterian Hospital
- Cornell University, Ithaca
- Cornell University Cooperative Extension, New York City
- Memorial Sloan-Kettering Cancer Center
- Hospital for Special Surgery
- Hunter College of the City University of New York
- Hunter School of Nursing
- Hunter School of Public Health
- Hunter Center for Translational and Basic Research (CTBR)
- Animal Medical Center and Cornell College of Veterinary Medicine

Contact Information:
Web: <http://weill.cornell.edu/ctsc/>
Tel: 212-746-4745

CTSC Core Laboratory

The CTSC Core Laboratory, operated and funded through the CTSC, offers a rich array of laboratory-related resources to facilitate the translation of research from bench to bedside. The **General Core** develops and carries out research-related sample processing and analyses to investigators from any of the CTSC partner institutions. Current and prospective clinical and translational investigators are encouraged to inquire about any assay or analytical technique that may prove useful in their research. The experienced staff of the Core Lab can work with investigators to prepare and test new assays for use. A QuickPlex SQ120 and a Si2400 multiplex analyzer support rapid measurement of a variety of analytes using extremely small sample volumes. The **Molecular Core** offers an array of research-related regular and contemporary molecular and genetic analyses. The **3-D Core** provides 3-D design software, consultation, and printing service to all investigators.

The CTSC general core laboratory is licensed by the New York State Department of Health and it is CLIA certified.

Contact Information:
Web: http://weill.cornell.edu/ctsc/services_and_resources/core_laboratory_services.html

Core Lab Director: Dr. Yuan-Shan Zhu
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Tel: 212-746-8348

Coordinator: Ms. Andrika Morant
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Tel: 212-746-8910

CTSC Core Laboratory Information Management System (CLIMS)

The CLIMS, a web-based system developed by our CTSC, enables:

- **Investigators** to submit sample assay requests, track sample status, view and download assay results
- **Laboratory staff** to handle sample processing and storage, select samples for assays, import or enter assay results, and monitor sample status
- **Administrators** to manage lab activity, track core lab usage, and generate lab reports

Web at:
<https://ctscweb7.ctsc.med.cornell.edu/CLIMS/MainMenu.cfm?CFID=30232&CFTOKEN=56517077>

User-Run Services:
➢ **SECTOR Imager 2400** for multiplex assays
➢ **ChemiDoc MP system** for imaging
➢ **3D software** for 3D design

Reservation calendar at:
<https://cfapp2.ctsc.med.cornell.edu/ReservationCalendar/login.cfm>

General Core

Services Offered:

- **Sample processing, storage and shipment:** Samples processed in the core lab included but not limited to blood, urine, saliva, stool, cerebrospinal fluid, tissues and cells.
- **Bulk immunodiagnostic and chemical assays:** Over 130 different testing are offered.
- **Various assays for cell biology** including cell count & viability, cell proliferation, cell apoptosis, cell cycle, DNA damage, autophagy, etc.
- **Multiplex assays:** Up to 10 biomarkers are assayed in a single well of 96-well plate with small amount of specimen.
- **Letter of Support for Grant Application:** Strengthen your application with CTSC resource support.



Instrumentation

- MSD Si2400 & QuickPlex SQ120
- VICTOR3 Multi-Label Reader
- COBRA Auto-Gamma Radiation Counter
- Chronolog700 4-Clot Detection System
- Start® 4 semi-automated hemostasis analyzer
- DCA2000+ Plasma HbA1c and urinary albumin/creatinine Analyzer
- CholesTech LDX Lipid profile + Glucose Analyzer
- Eppendorf Master Thermal Cyclers
- Fluorescent Microscope
- Multiple -20 and -80 Freezers, and centrifuges
- Muse Cell Analyzer



Contact Information:
Web: http://weill.cornell.edu/ctsc/services_and_resources/general_core_laboratory.html

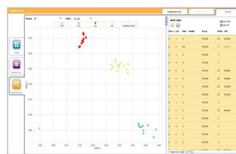
Coordinator: Ms. Andrika Morant
Email: anm2134@med.cornell.edu
Tel: 212-746-8910

Molecular Core

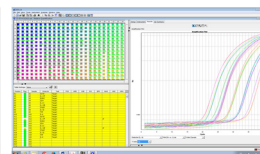
Services Offered:

Investigators are provided with or trained in the following services for CTSC approved protocols:

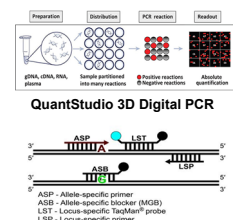
- **DNA, RNA and protein extraction**
- **Genotyping**
- **Oligonucleotide synthesis**
- **DNA sequencing**
- **Quantitative PCR**
- **RT-PCR**
- **Digital PCR**
- **castPCR**
- **Gene expression profiling**
- **Next-generation sequencing (NGS)**
- **Western blot analysis**



SNP genotyping (Illumina Eco Real-Time PCR System)

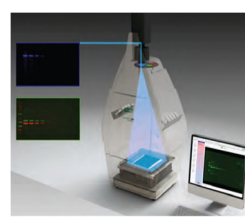


Relative Quantification



QuantStudio 3D Digital PCR

Competitive Allele-Specific TaqMan PCR (castPCR)



ChemiDoc MP Imaging System

Contact Information:
Web: http://weill.cornell.edu/ctsc/services_and_resources/molecular_core.html

Specialist: Dr. Guoan He
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3-D Core

Objective:

To provide translational researchers with 3D printing technology in order to rapidly develop novel biomedical products with application to improving human health.

Examples of proposal topics include:

Biomedical devices
Prototype development
Medical diagnostic tools

Veterinary medical technologies that have ultimate applicability to human health

Anatomical models and surgical visualization aids



Stratasys uPrint
Material: ABSplus in ivory

Build size:
203 x 152 x 152 mm (8 x 6 x 6 in.)
Layer thickness:
.254 mm (.010 in.)



Stratasys Fortus 250mc
Material: ABSplus in multiple colors

Build envelope (XYZ):
254 x 254 x 305 mm (10 x 10 x 12 in.)
Layer thicknesses:
0.013 inch (0.330 mm)
0.010 inch (0.254 mm)
0.007 inch (0.178 mm)



Go!Scan 3D Scanner
Scanning area: 380 x 380 mm (15 in. x 15 in.)

Resolution: 0.500 mm (0.020 in.)
Texture Colors: 24 bits
Accuracy: Up to 0.100 mm (0.004 in.)

3D Printing Core Lab and Software:

- ❖ 3D Doctor
- ❖ Sketch up
- ❖ Auto Desk Inventor
- ❖ Solid Works
- ❖ Space claim
- ❖ Slicer

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