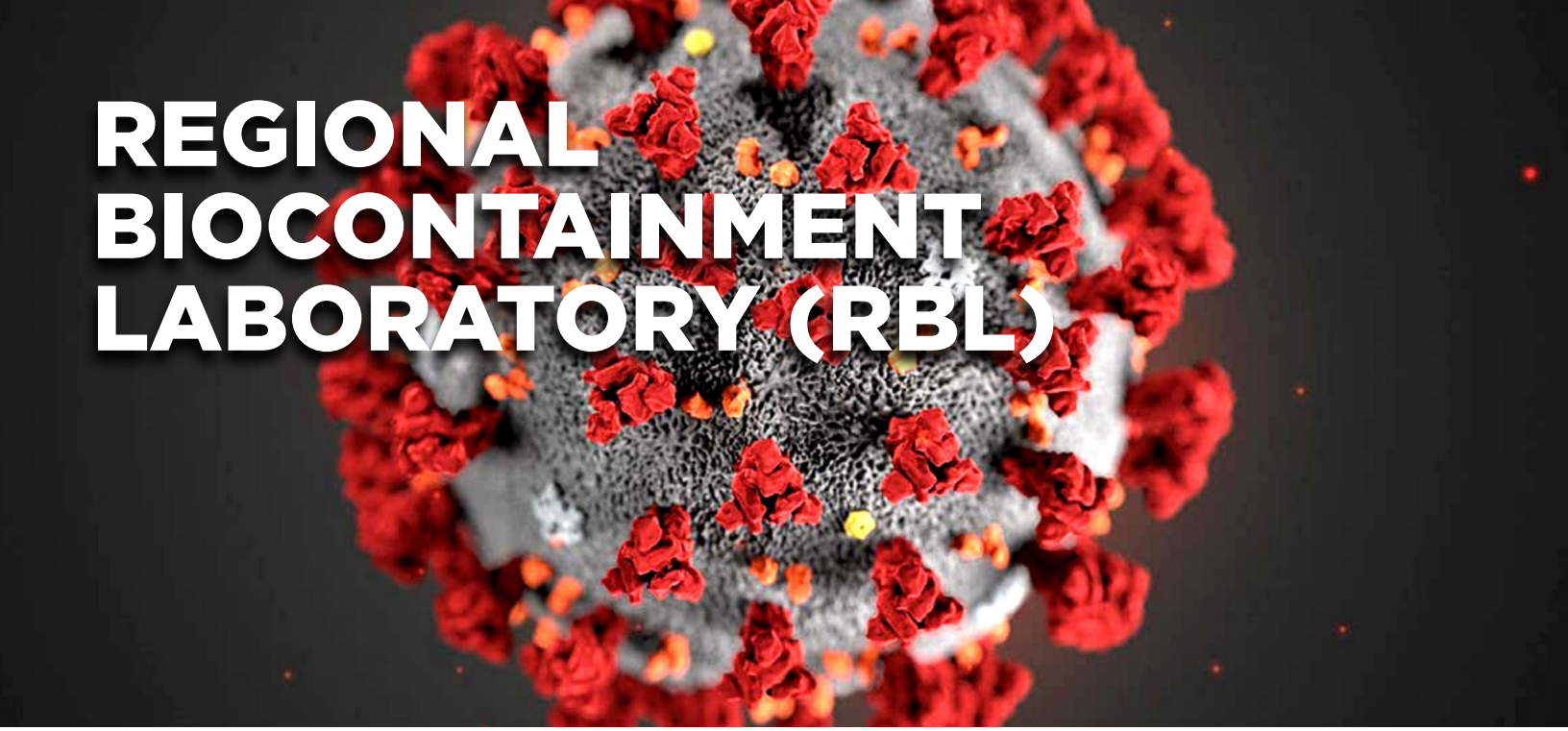

REGIONAL BIOCONTAINMENT LABORATORY (RBL)

The UTHSC Regional Biocontainment Laboratory (RBL) provides facilities and expertise supporting basic research in pathogen biology and translational research to advance discoveries of treatments and vaccines for infectious diseases impacting global health.

FACILITY

The 17,000 sq. ft. RBL provides a unique resource for the CERSI consortium. The main mission of the RBL is to provide leadership and support in the discovery and development of new drugs, vaccines and diagnostics that would protect the general population from emerging and reemerging infectious diseases and bioterrorism. Our facility is approved by the CDC for work with select agents. The RBL provides support for projects requiring biosafety level 2 or 3, but we also provide support for research that does not include infectious agents because of the unique instrumentation and skills of the staff. The staff currently support projects in collaboration with the government, commercial and academic entities (from UTHSC and elsewhere). The RBL is also the site of UTHSC's Center of Excellence in Encephalitic Alphavirus Therapeutics, a $21 million National Institutes of Health grant to research antiviral treatments for deadly viruses that spread to horses, and people, by infected mosquitoes.

CORE CAPABILITIES

The UTHSC RBL offers state-of-the-art essential services in biomarker discovery, assay development and implementation, small molecule screening, and testing and evaluation of small molecules and vaccines in small animal models. Instrumentation includes a VEVO3100 (ultrasound), Molecubes CT (computed tomography), Perkin Elmer IVIS (fluorescent and luminescent whole animal imaging) and a UltraMicroscope Blaze for next-generation light sheet imaging, high content imaging, and a LC mass spectrometer.

Broadly, the scope of our animal services include: (1) production and characterization of the pathogens for challenge; (2) determination of optimal route and dose for pathogen challenge; (3) natural history of infection in small animal models; (4) determination of the best indicators of infection and correlates of immunity; (5) development and standardization of non-GLP Animal Models. We also have GLP capabilities in support of *in vitro* and *in vivo* services. A second core capability is providing services supporting biomarker and pathogen discovery from NexGen sequencing to biomarker discovery. The RBL has hematology and clinical chemistry services. Third, the RBL has a complete array of immunology equipment and tools in support of essential questions in inflammation and host response such as a MagPix, Luminex, Cytospin, FACS, and Elispot. Fourth, the RBL is equipped with histopathological instruments and provides services starting from organ collection, processing and embedding, to customized sectioning and H&E staining.

SERVICES AND TRAINING

- Equipment Training
- Training for Work with Select Agents

Please contact the RBL Services Program Manager to discuss your project needs. Contact the RBL Services Coordinator to discuss iLab service requests.

PATHOGENS
(EXISTING OR ANTICIPATED)

SARS-CoV-1, SARS-CoV-2, MERS-CoV, old and new world hantaviruses, Oropouche virus, Mayaro virus, Venezuelan equine encephalitis virus, Eastern equine encephalitis virus, Western equine encephalitis virus, Madariaga virus, Chikungunya virus, Sindbis virus, Pichinde virus, influenza A viruses, influenza B viruses, Zika virus, West Nile virus, St. Louis Encephalitis virus, human coronavirus

MAJOR EQUIPMENT

- respons®910VET Chemistry Analyzer (RBL-ABSL-3)
- X•pedite™ HEM^3 VET Hematology Analyzer (RBL-ABSL-3)
- Agilent Bioanalyzer (RBL-BSL-2)
- Agilent Fragment Analyzer (RBL-BSL-3)
- QuantStudio 6 real-time PCR (96- and 384-well blocks) (RBL-BSL-3)
- Biotek Multiflo FX (RBL-BSL-3)
- Eppendorf PCR (RBL-BSL-3)
- Synergy (RBL-BSL-2; RBL-BSL-3; RBL-ABSL-3)
- Biotek Plate Washer (RBL-BSL-2)
- EnVision Reader (RBL-BSL-3; RBL-BSL-2)
- Luminex® 200 (RBL-BSL-2)
- Magpix® System with Milliplex® Analyst software (RBL-BSL-3)
- KingFisher (RBL-BSL-3)
- Illumina MiSeq (RBL-BSL-2- in select agent space)
- QBIT (RBL-BSL-3)
- Mindray ultrasound system with an Ultrasonic Transducer (RBL-ABSL-3)
- Vevo 3100 Ultrasound (RBL ABSL-3)
- IVIS Spectrum (RBL-ABSL-3)
- Molecubes CT (RBL ABSL-3)
- Miltenyi Biotec BLAZE (RBL-BSL-2- in select agent space)
- Olympus APEX (RBL-BSL-3)
- Yokogawa CQ1 system (RBL-BSL-2- in select agent space)
- EVOS fluorescent microscope (RBL-BSL-3)
- Phase microscopes (RBL-BSL-3)
- Miltenyi Biotech - MACSQuant Tyto Cell Sorter (RBL-BSL-3)
- Cytek Aurora Spectral Cytometer (RBL-BSL-2- in select agent space)
- C.T.L. EliSpot Analyzer (RBL-BSL-3)
- 10 X Genomics Chromium X (RBL-BSL-3)
- Emulate, Inc. - Zoe & Orb (RBL-BSL-3 – currently at BSL-2 as conditions set up)
- AB Sciex, LLc - QTRAP 5500+ mass spectrometer (RBL-BSL-3)
- Leica Microtome (RBL-BSL-2)
- Leica Paraffin Embedding Work Station (RBL-BSL-2)
- Refrigerated Centrifuges with biocontainment rotors (RBL-BSL-3)
- -80°C Freezers (RBL-BSL-3)
- Beadmill Homogenizer (RBL-BSL-3)
- CO2 incubators (RBL-BSL-3)

STAFF

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Core Director
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Dr. Jonsson is professor and Van Vleet Chair of Excellence in Virology, director of the RBL, and director of the Institute for the Study of Host-Pathogen Systems at UTHSC. She is the program director for an NIH awarded Center of Excellence for Encephalitic Alphavirus Therapeutics. She has over 28 years of experience in the study of highly pathogenic human viruses represented in more than 169 publications and 5 patents. Her research program focuses on basic and translational research targeting respiratory, encephalitic and hemorrhagic fever viruses. As RBL director she brings a unique blend of professional experience and leadership skills gained from her positions over the past 40 years in industry, academics and not-for-profit institutes. She has led several major cross-institutional, multi-disciplinary efforts funded by NIH, DoD, and NSF in drug discovery and virus ecology/discovery.

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For more information:

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